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MINISTRY OF HEALTH-ETHIOPIA

FEDERAL MINISTRY OF HEALTH OF ETHIOPIA

DISEASES PREVENTION AND CONTROL LEAD EXECUTIVE OFFICE

TRAINING ON BREAST CANCER SCREENING, EARLY DETECTION AND REFERRAL FOR PRIMARY LEVEL HEALTH WORKERS IN ETHIOPIA

Participant Manual

Table of Table of

List of Figures:

Foreword

The Government of Ethiopia is resolved to ensure that our people are healthy and productive as this is the cornerstone of socio-economic development and achievement of our vision of reaching middle-income status by 2035. Ethiopia faces a double burden of communicable and non-communicable diseases, we therefore continue to invest in high impact, evidence-based services to improve the health and wellbeing of our people by creating resilient and people-centered health systems.

In Ethiopia, breast cancer is the leading type of cancer with 16,133 new cases in 2020 and an age standardized incidence rate of 41.5/100,000. While rare in males accounting for less than 1% of all breast cancer cases, it is now the leading cause of cancer morbidity among adult women in our country, accounting for one third of all cancer cases in women and one in five of all cancers. A key objective of our National Cancer Control Plan and National Strategic Plan for the Prevention and Control of major Noncommunicable Diseases (2020 – 2025) is to expand access to breast cancer awareness, early detection, treatment and palliative care in order to reverse the growing numbers of people suffering from the disease and to reduce the current mortality rate by 25% by the year 2025, in alignment with the World Health Organization, Global Breast Cancer Initiative.

The training material is aimed at building health professional's competency on breast cancer awareness creation, screening and early detection, prompt referral and linkage with quality care of breast cancer. Thus, the main topics in this manual are organized based on the epidemiology of breast cancer and the disease burden; understanding normal breast; knowledge and skill on clinical breast examination; benign breast abnormality and malignant breast abnormality; introduction to management of breast cancer; palliative care for breast cancer and health promotion and education for breast cancer early detection. The main emphases in this course are to enhance knowledge and skill of health workers at primary level to promote breast cancer early detection, conduct quality clinical breast examination, prompt referral and linkage to diagnostic and care centers.

This is a 5-days course designed to offer a skills-based training to equip health workers with optimal competency to provide good quality screening of breast cancer through clinical breast examination.

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Approval Statement of the Ministry of Health

The Federal Ministry of health of Ethiopia has been working towards standardization and institutionalization of In-Service Trainings (IST) at a national level. As part of this initiative, the ministry developed a national in-service training directive and implementation guide for the health sector. The directive requires all in-service training materials fulfill the standards set in the implementation guide to ensure the quality of in-service training materials. Accordingly, the ministry reviews and approves existing training materials based on the IST standardization checklist annexed on the IST implementation guide.

As part of the national IST quality control process, this training material on breast cancer screening, early detection and referral has been reviewed and revised based on the standardization checklist and approved by the ministry.

Assegid Samuel Cheru
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Acknowledgment

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In particular, the Ministry would like to express gratitude to the following health professionals and experts for their unreserved commitment and professional contributions.

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Acronyms

AACR	Addis Ababa City Cancer Registry
AAU	Addis Ababa University
AJCC	American Joint Commission on Cancer
BCa	Breast Carcinoma
BCAM	Breast Cancer Awareness Month
BCC	Behavioral Change Communication
BCS	Breast-Conserving Surgery
BHAC	Breast Health Awareness Campaign
BSE	Breast Self-Examination
CBE	Clinical Breast Examination
CHEW	Community Health Extension Worker
CHS	College of Health Science
CHV	Community Health Volunteer
CME	Continuous Medical Education
CNB	Core needle biopsy
COE	Center of Excellence
CxCa	Cervix Carcinoma
DHIS2	District health information system
EDP	Early Detection Program
EKC	Else Kröner Center for Cancer Care
EMR	Electronic Medical Records
ER	Estrogen Receptor
FMOH	Federal Ministry of Health
FNA	Fine Needle Aspiration
FNAC	Fine Needle Aspiration Cytology
GBCI	Global Breast Cancer Initiative
GDP	Gross Domestic Product
HCW	Health Care Worker
HF	Health Facility
HIS	Health Information System
HIV	Human Immunodeficiency Virus
IDC	Invasive Ductal Carcinoma
IEC	Information Education and Communication
IHC	Immuno-Histochemistry
MDT	Multi-Disciplinary Team
MMC	Millenium Medical College
MOH	Ministry of Health
MOU	Memorandum of Understanding
MRI	Magnetic Resonance Imaging
NCCN	National Comprehensive Cancer Network
NCCP	National Cancer Control Plan
NCD	Non-Communicable Diseases
TWG	National Breast Cancer Technical Working Group

Introduction to the Training Manual

Breast cancer, with 99% of cases occurring in women, is the most commonly diagnosed cancer worldwide, with 2.3 million new cases reported in 2022. It is also the fifth leading cause of cancer-related deaths, accounting for 6.9% of global mortality. In Ethiopia, breast cancer has become a growing burden, surpassing other types of cancer. In 2022, there were 16,904 new cases, comprising one-third of all cancer cases in women and one in five of all cancers. The age-standardized incidence rate in Ethiopia is 41.5 per 100,000.

The majority of breast cancer cases in Sub-Saharan Africa, including Ethiopia, are diagnosed at advanced stages (60–75%), leading to poor outcomes. This is primarily due to low public awareness and inadequate early healthcare-seeking practices. The lack of clinical competency of HCWs at healthcare facilities is another contributing factor for delayed diagnosis. Furthermore, treatment options may be limited, expensive, or inaccessible, posing challenges for patients, their families, and the healthcare system.

Effective breast cancer management involves screening, early detection programs, and prompt treatment. This approach is more effective and cost-efficient, resulting in fewer complications, and significantly improving patient outcomes and quality of life. While mammographic screening is the global gold standard for reducing breast cancer mortality, it requires significant infrastructure and coordination. Therefore, the World Health Organization (WHO) recommends clinical breast examination (CBE) as a viable alternative. Measures to raise awareness of breast health should be implemented in conjunction with CBE, particularly among the target age group. Fast-track referral and diagnosis protocols should be implemented for suspicious cases to identify breast cancers as small as 1cm. Acquiring CBE skills is crucial for achieving Ethiopia's strategic objective of detecting more than 60% of breast cancers at stages I and II by 2030.

The primary healthcare (PHC) level of the country's healthcare delivery system presents a unique opportunity to train frontline healthcare workers in essential CBE skills. Drawing from the experiences and success of the national cervical cancer screening and treatment program, a national breast cancer guideline and implementation plan are developed to guide breast cancer prevention, early detection, referral, and comprehensive management, including palliative care.

The overall objective of this course is to improve the competency of primary healthcare professionals in providing high-quality, culturally appropriate health education and counseling services, identifying danger symptoms/signs,

conducting clinical assessments of the breasts, performing accurate clinical breast examinations (CBE), and distinguishing between benign conditions and suspected cases of breast cancer. Additionally, the course provides a comprehensive overview of breast cancer diagnostic (investigation) methods, treatment principles, the integration of palliative care, the significance of timely referral linkages, and the importance of monitoring and evaluation.

1. Core Competencies

The following are the core competency of this training manual:

- Provide high-quality, culturally appropriate health education, and counseling services
- Identification of danger symptoms/signs of breast cancer
- Perform proper CBE
- Differentiate benign and suspected breast cancer cases clinically
- Analyze the principles of overview of breast cancer diagnosis, treatment and integration of palliative care
- Identify cases requiring timely referral to the next level of care
- Performance monitoring and evaluation

2. Course Syllabus

Course Description:

The 5 days training is designed to equip participants with the knowledge, skills, and attitude required to conduct breast cancer screening, early detection, and perform proper CBE at the PHC level.

Course Goals:

To enhance knowledge and skills of health care providers at PHC levels in breast cancer screening, early detection, and treatment.

Participant learning Objectives:

At the end of the training, participants will be able to:

- Provide high-quality, culturally appropriate health education and counseling services
- Describe the normal breast anatomy
- Identify the danger symptoms/signs of breast cancer
- Perform proper clinical breast assessment, including CBE

- Differentiate benign and suspicious breast cancer using clinical evaluation
- Describe the magnitude of breast cancer burden and the importance of screening, detection, and timely treatment
- Describe principles of breast cancer diagnosis and treatment options
- Demonstrate the importance of integrating palliative care into breast cancer care
- Practice timely referral of suspected breast cancer cases to the next level of care
- Describe record keeping and data management for breast cancer screening, early detection and referral.

Training Methods:

- Illustrated lectures and group discussions
- Group exercise
- Individual reflection
- Case studies
- Role plays
- Simulated practice with anatomic models
- Practical attachment and evaluation of patients at health facilities
- Video clips
- Simulations for clinical decision-making
- Guided clinical activities (providing care and performing procedures)

Training Materials:

- National BC participant manual
- National BC facilitator guide
- National BC guidelines
- Power point slide
- Flipchart
- Markers
- Laptop computer
- CD-ROM
- Projection screen
- Masking tape
- Breast models (simulators)
- CBE (practical attachment to health facilities)
- Checklist for CBE
- Video of CBE

Participant Selection Criteria:

- Practicing and interested clinicians work in breast care (doctors, health officers, midwives, and nurses)
- There should be consistent institutional support and recommendations from the facilities
- Letter of agreement to stay in that health facilities at least 12 months after training

Trainer's selection criteria:

Training of trainers (TOTs) should be conducted to develop a national and regional pool of trainers that will help in cascading the program. A qualified trainer must be a proficient general surgeon or clinical oncologist and have completed this training successfully. The TOT course and/or the trainer shall acquire the following skills and core competencies:

- Completed MoH-approved, competency-based TOT in breast cancer screening and/or Competent service provider who is actively working in the area of breast cancer screening services
- Good experience in performing CBE and managing breast abnormalities for which they will be a trainer
- Good facilitation skills
- Coordinates training in collaboration with other staff and relevant stakeholders
- Document and report training proceedings

Method of evaluation

Participant Evaluation:

1. Formative
   - Pre- and post-course Knowledge Questionnaires
2. End-course evaluation
   - Post-test Questionnaires
3. Course
   - Daily evaluation
   - End-of-course evaluation

Certification criteria

Knowledge: The trainee has to score ≥80%
Skills: the trainees are expected to perform the following

Procedure	Observe (specify the number)	Perform under supervision (specify the number)
Proper history taking	10	10
Perform CBE	20	20
Provide culturally appropriate health education and counseling	5 sessions	5 sessions
Proper documentation	5	5

3. Course Duration

The training needs 5 days of both classroom-based and practical sessions using simulators and attachment in health facilities on real patients.

1. Suggested Course Composition
   - Up to 20 health professionals with mixed qualifications (doctors, health officers, midwives, and/or nurses)
   - Four clinical trainers (two general surgeons and/or two oncologists)
   - Four practice settings (five trainees per group)

2. Training venue
   - An accredited CPD provider will provide the training
   - This training will have continuing educational unit (15 CEUs)

4. Pre-training Instruction

- Participant registration (30 minutes)
- Opening speech (15 minutes)
- Facilitator and participant's introduction (30minutes)
- Pre-test (20 minutes)

5. Course Schedule

Date	Time	Activity
Day 1: Monday	8:30-9:00 AM	Registration
	9:00-9:10 AM	Opening speech
	9:10-9:30 AM	Facilitator and participant's introduction
	9:30: 9:45 AM	Overview of the course and review of course materials
	9:45-10:00 AM	Identify participant's expectations and set ground rules
	10:00-10:30 AM	Pretest
	10:30-10:45 AM	Health break
	10:45 AM -12:15 PM	Chapter 1: The Normal Breast 1. Normal breast appearances 2. Normal breast anatomies 3. Worrying breast changes
	12:15-12:30 AM	Summary of Chapter 1
	12:30-2:00 PM	Lunch
	2:00-3:30 PM	Chapter 2: Breast Examination 1. History taking for breast complaint
	3:30-3:45 PM	2. Clinical breast examination
	3:45-4:45 PM	2. Clinical breast examination (continued)
	4:45-5:00 PM	3. Summary of clinical breast evaluation of common breast problems and check list for examination
	5:00-5:30 PM	Review of the day's activities and plan for next day
	8:30-8:45 AM	Recap of the previous day
	8:45-9:45 AM	Chapter 3: Benign Breast Anomaly 1. Benign Changes of the Breast- General description

Day 2: Tuesday		2. 2. Palpable Breast Mass: I. Fibroadenoma II. Breast cyst
	9:45-10:15 AM	3.Painful Breast (Mastalgia) 4. Nipple discharge
	10:15: 10:30 AM	Session Summary
	10:30-10:45 AM	Health Break
	11:45 AM-12:30 PM	Chapter 4: Cancer of the Breast 1. Describe the global and Ethiopian burden of breast cancer 2. List the key distinctions between noninvasive (in situ) and invasive breast cancer
	12:30-2:00 PM	Lunch
	2:00-2:45 PM	3.Identify the different subtypes of invasive breast cancer 4. Describe the clinical manifestations of breast cancer
	2:45-3:30 PM	Session Summary
	3:30-3:45 PM	Health break
	3:45-4:45 PM	Chapter 5: Management of Breast Cancer 1.Surgical treatments for breast cancer 2. Chemotherapy 3. Hormonal and Other targeted therapies
	4:45-5:15 PM	4. Radiotherapy for breast cancer 5. Surveillance for Breast Cancer
	5:15-5:30 PM	Session Summary
Day 3: Wednesday	8:30-8:45 AM	Recap of previous day
	8:45-9:45 AM	Chapter 6: Palliative Care 1.Definition of palliative care 2. Pain Management
	9:45-10:15 AM	3.Dyspnea 4.Fatigue
	10:15: 10:30 AM	Health Break

	10:30-11:30 AM	5. Delirium and confusion
	11:30 AM-12:20 PM	6. Existential Suffering
	12:20-12:30 PM	Session Summary
	12:30-2:00 PM	Lunch
	2:00-3:30 PM	Chapter 7: Health Promotion and Education 1.Patient pathways - causes of delay in breast cancer early detection 2. Risk factors for breast cancer
	3:30-3:45 PM	Health break
	3:45-4:45 PM	Chapter 8: Monitoring and Evaluation
	4:45-5:00 PM	Session Summary
	5:00-5:30 PM	Preparation for practical attachment
Day 4: Thursday	AM	Hospital Practical Attachment
	PM	Hospital Practical Attachment
Day 5 Friday	8:30AM-12:30PM	Hospital Practical Attachment
	12:30-2:00 PM	Lunch
	2:00-2:30 PM	Post Test
	2:30-3:30PM	Action plan
	3:30-3:45 PM	Health break
	3:45 -4:45 PM	Presentation of action plan by participants
	4:45 -5:00 PM	Course evaluation
	5:00 -5:30 PM	Certification and closing ceremony

Chapter 1: The Normal Breast

Duration: 170 minutes

Chapter description:

This chapter discusses the normal breast including normal appearances, anatomy and changes that can occur during development, pregnancy, lactation and stage of involution of breasts. This chapter is meant to be used by trainees in conjunction with national guidelines for early detection of breast cancer.

Chapter objective:

By the end of this chapter participants will be able to describe the appearance and anatomy of normal breast and normal developmental changes from birth to elderly.

Enabling objectives:

By the end of this chapter participants are expected to:

- Describe the appearance of normal breast
- Describe the anatomy and physiology of normal breast
- Describe developmental changes that happen to the breast after birth, during puberty, pregnancy, lactation and at elderly

Outline:
1.1 Normal breast appearances
1.2 Normal breast anatomies
1.3 Changes in the breast which may be worrying
1.4 Chapter Summary

1.1. Normal breast appearance

Activity 1:
Instruction: read out case studies loudly (one by one) from projected PPTs, and discuss the answers.

Case study 1: A worried mother brings her 11-year-old daughter to a clinic complaining that she has noticed a hard lump behind her one nipple. There is nothing abnormal to be felt on the other side. The mother wants to know whether the child's breast is normal, as she has had breast cancer.

1. Should the mother be concerned that her daughter has a lump under one nipple?
2. Is it normal to get a breast lump on one side only?
3. Does it mean she will always have one breast bigger than the other?
4. Would you be more worried if the daughter's breast lump was painful?

Case study 2: A woman of 22 years of age complains of painful breasts every month before her period. She has also noticed a few lumps in both breasts. She has always had inverted nipples.

1. Is it common to have painful breasts?
2. Would you be worried about her inverted nipples?
3. What is the commonest cause of multiple breast lumps in a young woman?
4. What is ANDI?
5. At what age do fibroadenomas usually occur?

Case study 3: A woman of 25 years presents 3 months after the birth of her baby. She did not breastfeed. Her complaint is that her breasts have become softer and have changed shape.

1. What normal changes take place in a woman's breasts early in pregnancy?
2. What breast changes can be expected after pregnancy and breastfeeding?
3. Can these changes be prevented if the mother chooses not to breastfeed?
4. What further breast changes are likely to occur as she becomes older?

Time: 20 minutes

What is a breast?

Breasts are specially modified sweat glands in the skin and are present in all infants at birth. Breast size in the fetus increases as the pregnancy progresses. Therefore, the breasts may be very small in preterm infants. Usually, one breast is present on

either side of the chest around the pectoral region. However, one or more accessory (extra) nipples or breasts may be present along the 'breast line' from the armpit down to the groin.

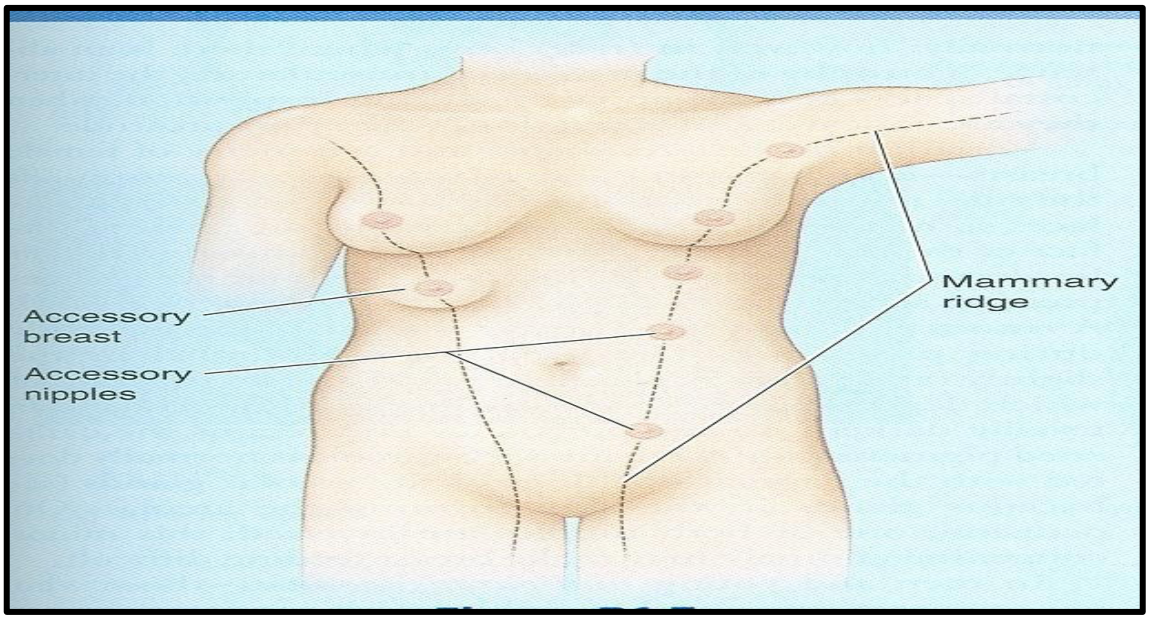


Figure 1 the mammary (breast) ridge

Note: Breasts or mammary glands are present in all mammals.
What are breasts normally like at birth?
In infants born at term the nipple and areola are well developed and a small lump called a breast bud can be felt under the nipple. The areola is the pink area around the nipple. The breast bud consists of glandular tissue which has grown due to the presence of sex hormones in the fetus. The appearance of the breasts and the presence of breast buds are the same in boys and girls.

Note: Slightly enlarged breasts in newborn infants are normal.

Do breasts change during the first months of life?

Yes. During the first months after birth one or both breast buds may enlarge further for a few weeks and may even produce small amounts of milk (witch milk). These normal changes in the breasts are due to sex hormones produced by the infant. After a few months sex hormones are no longer produced and the breast bud disappears. Do not try to express milk as this may result in infection of the breast.
Note: nipple bud is formed from the mass of basal cells from mammary ridge in the pectoral region bilaterally which in turn are formed from ectodermal cells. No significant mammary development change takes place until puberty after birth.
What happens to breasts during puberty?

At about 8 – 12 years of age the female child's ovaries start to produce the sex hormones estrogen and progesterone. This is called puberty. The sex hormones cause the breast to start developing with enlargement of the nipple and areola. A breast bud develops below the nipple and areola. These normal changes usually occur in both breasts at the same time. It is common for breast buds to be tender. Is it abnormal if one breast starts to develop faster than the other? No.

One breast bud may start to develop first so that the breasts are of different sizes (they are asymmetrical). This is normal and common. With time both breasts will increase in size normally. There is no need to worry about the breast lump being malignant as breast cancer is extremely rare in girls during puberty.

Note: Asymmetrical breasts are common during puberty

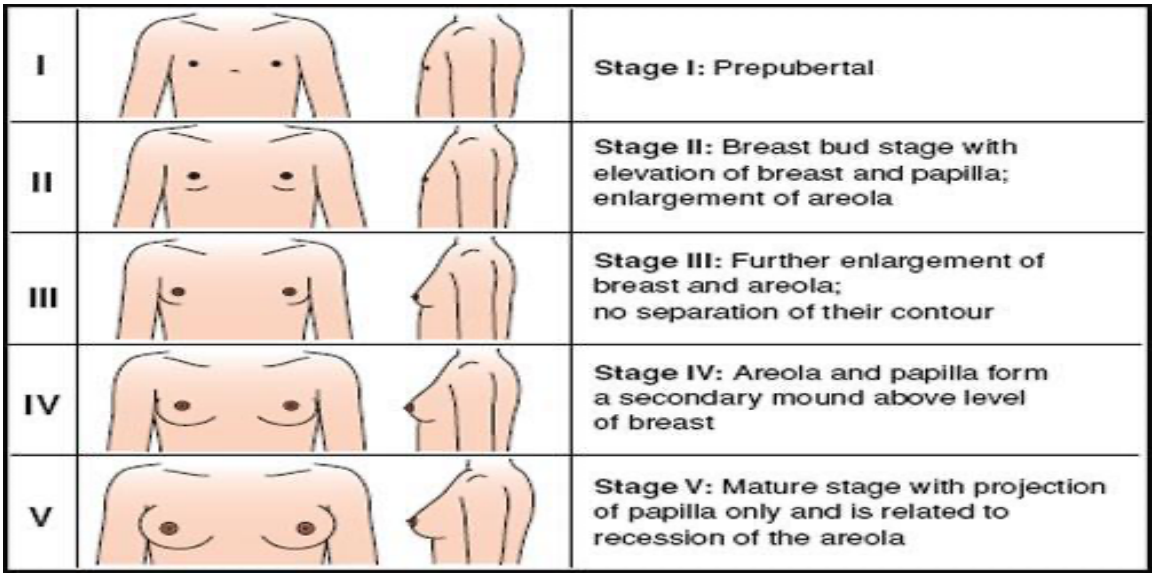


Figure 2 stages of normal breast development

When is breast development at puberty complete?

Usually, breasts reach their normal shape by about 18 years of age. Some individuals have larger breasts than others. Breast size usually follows a trend in the family.

Are a woman's breasts usually of the same size?

More than 50% of women have one breast that appears slightly larger than the other. This mild asymmetry is normal.

What happens to breast appearance in early adulthood?

The breasts may continue to enlarge and start to droop even if the woman is not pregnant. This change in breast size and shape is normal.

Note: In summary, human breast development is a progressive process that is initiated during embryonic life, with glandular maturation starting at puberty, and attainment of full breast differentiation only with subsequent pregnancy and lactation.

1.2. Normal breast anatomy

What is the shape of the normal breast?

The breast is shaped like a pear and the tail of breast tissue extends under the arm. Some women have breast tissue that can be felt in the armpit. This may be more noticeable during pregnancy.

What is the structure of the normal breast?

The breast consists of:

- The nipple
- The areola
- About 10 or more lobes (glandular tissue)
- Supportive and fatty tissue

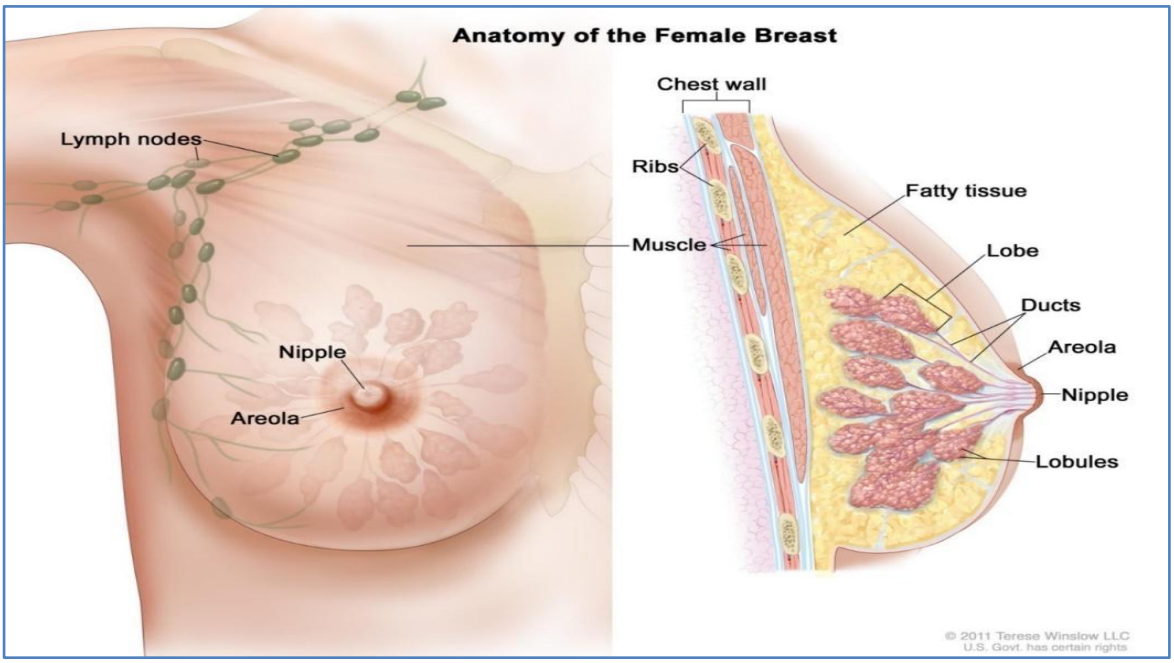


Figure 3: anatomy of normal breast

What is the appearance of a normal nipple and areola?

The nipple-areola complex (NAC) is made up of the nipple, which usually sticks out, and the surrounding pigmented areola. Under the skin of the areola is a circle of muscle which contracts when the nipple or areola is touched. The areola has sweat glands which can be seen as slightly raised pale dots.

Note: Circular muscle fibers surround the nipple. It is normal to have small nodules on the areola which are the openings of Montgomery's tubercles. The nipple-areola complex (NAC) is made up of both the nipple and surrounding areola.

What is the function of the lobes?

The lobes (made up of many lobules) are glandular structures. The major lobes drain into ducts which open onto the nipple. During pregnancy (and in newborn infants) the lobes produce milk.

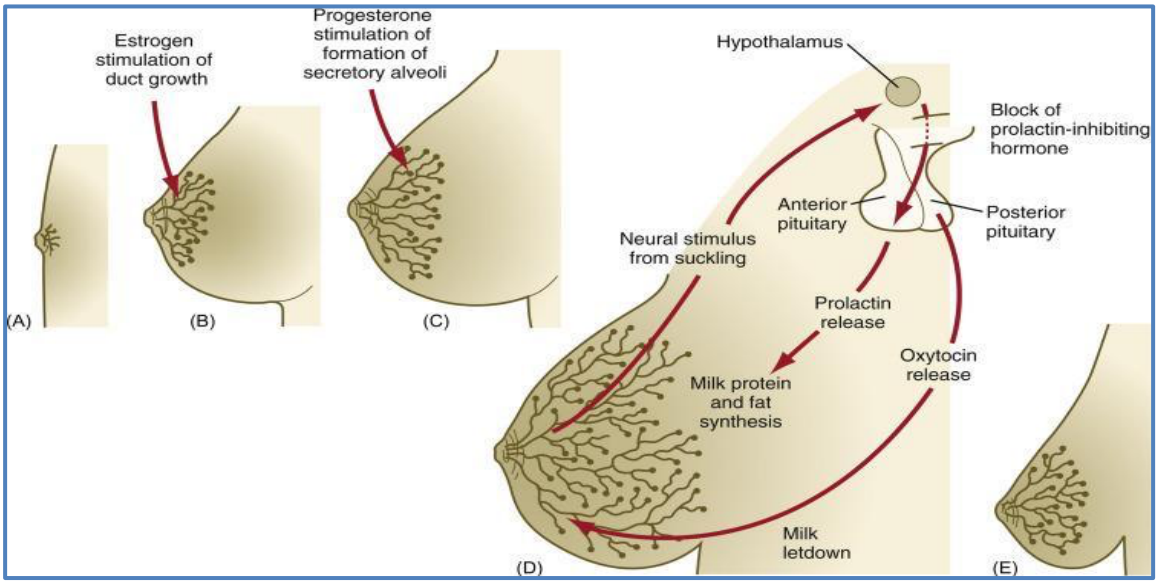


Figure 4: Hormonal control of development of the breast and mammary ducts. (A) Newborn; (B) young adult; (C) adult; (D) lactating adult; and (E) adult after the cessation of lactation.

Why is the supportive and fatty tissue in the breast important?

The supportive tissue helps to give the breast its shape while the amount of fatty tissue determines the size of the breast. Both the supportive and fatty tissue (stroma) is found around the lobes. The amount of supportive and fatty tissue varies enormously between individuals and with age. The basic anatomy of the male

breast is the same as that in the female breast, but the breasts usually do not enlarge during puberty and have no lobes.

Note: Breast enlargement during puberty in males is called gynecomastia. This can cause embarrassment but usually resolves within a few months without any treatment. It commonly occurs in only one breast

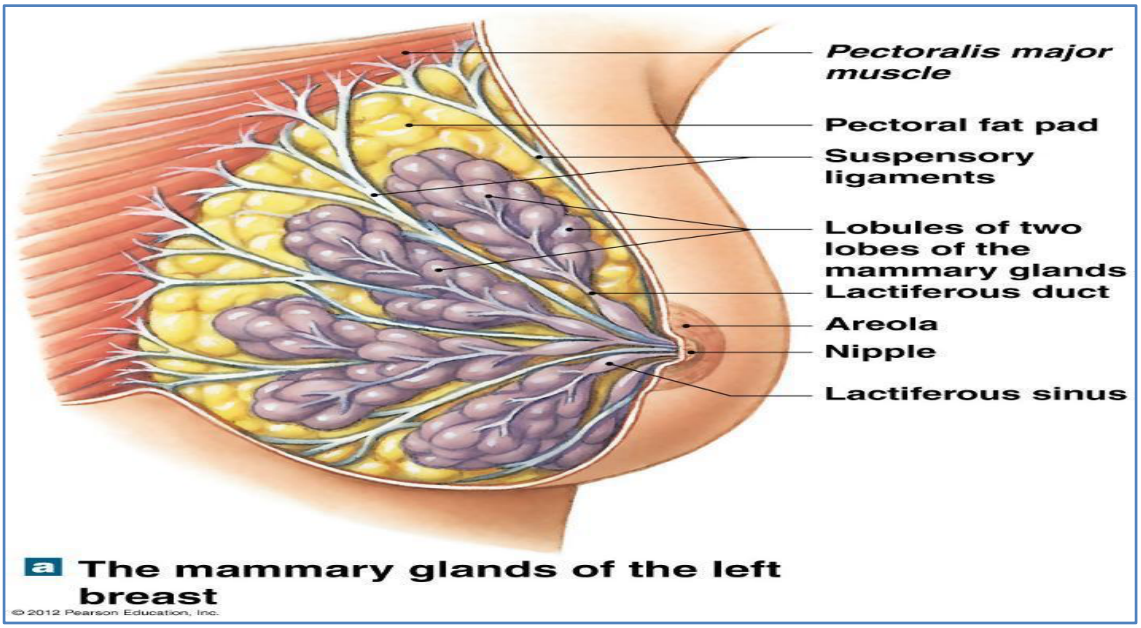


Figure 5: The mammary glands of the left breast

Why is the lymphatic drainage of the breasts important?

All organs in the body use both the blood and the lymphatic systems to drain fluid from the tissues. In this way the lymphatic system helps to remove unwanted cells and debris (breakdown products). The lymphatics (lymph vessels) drain lymph (tissue fluid) to local lymph nodes which act as sieves and remove abnormal cells which may be either infectious or cancer cells. If a cancer develops in an organ, the next place it will usually spread to is the draining lymph node. The breast generally drains to the lymph nodes in the axilla (armpit) but occasionally may drain to the lymph nodes in the chest. It is therefore always important to feel for axillary lymph nodes when examining a breast.

Note: All women with a breast complaint should have their armpits examined as well.

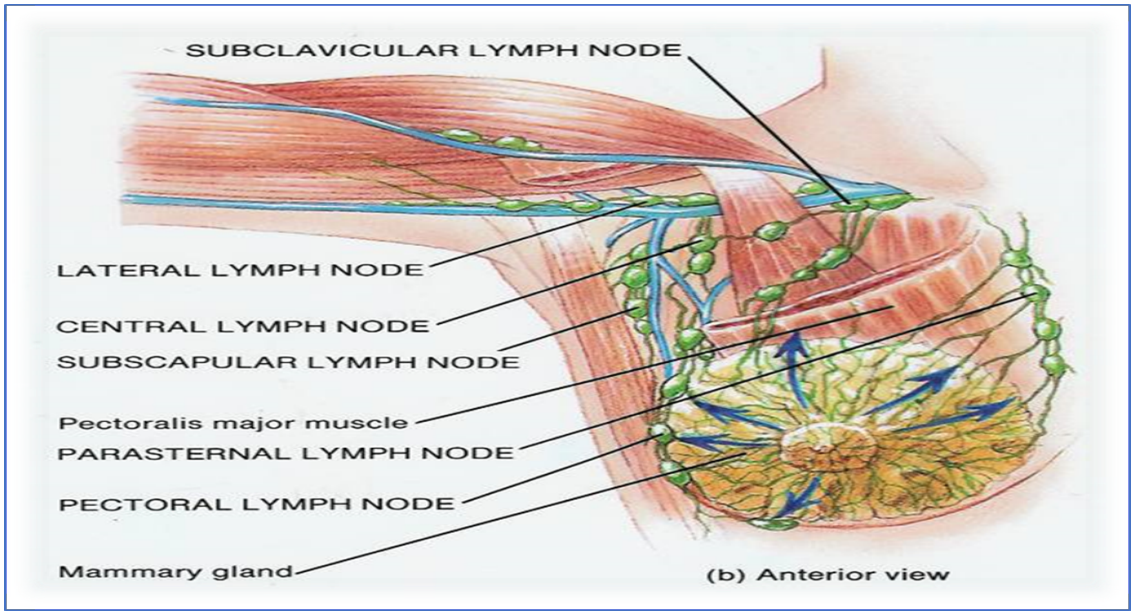


Figure 6: breast lymphatics

How are breasts affected by a woman's menstrual cycle?

The breasts change with the menstrual cycle as the breasts are influenced by the amount of sex hormones produced. Each month the size of the breast increases until the menstrual period starts. Once the period begins the breasts decrease in size. If a woman has lumpy breasts, the lumps also tend to get bigger before a period. Therefore, it is easier to examine a breast after the period has finished and before day 14 of the cycle (i.e. 14 days after the start of the period) when the breasts will again start to enlarge.

How do breasts change during pregnancy?

During pregnancy the breasts double in size and weight under the influence of large amounts of sex hormones produced by the mother and fetus. The changes start very early in pregnancy and breast enlargement and tenderness may be the first symptom of pregnancy. The size of the lobes increases dramatically. The nipples may stick out and more areola may get bigger and become more pigmented

Note: The blood flow to the breasts increases and the veins may become more obvious. Changes in the breasts with tenderness may be the first symptom of pregnancy.

How do breasts change during breastfeeding?

Colostrum may be present just before delivery, but milk production does not increase until a few days after the infant is born. Milk production continues as long as the infant breastfeeds. When the infant stops feeding, milk production rapidly decreases over a few days.

Note: The hormone prolactin results in milk production while the secretion of oxytocin during feeding results in the letdown reflex and milk dribbles from both nipples.

What changes are seen after breastfeeding?

The breasts decrease in size and may go back to the size they were before pregnancy, but the ducts remain the same. The size depends on how much weight was gained and bigger breasts are due to more fat. The breasts are generally droopier than before pregnancy. The darker nipple and areola will remain. Small amounts of milk may still be expressed in a woman who is not breastfeeding. These changes in breast size and shape are seen after pregnancy even if the woman has not breastfed her infant.

How do breasts change as a woman becomes older?

After the age of 35 years the breast tissue starts to shrink (involute). The glandular tissue in the lobes starts to become wasted and is initially replaced by fibrous tissue and cysts and later by fat. Once a woman's ovaries stop producing sex hormones at about the age of 50 years she goes into menopause. This causes the lobes to decrease in size even more and become replaced by fatty tissue. The breasts tend to become softer and hang down more (drooping or ptotic). The use of hormone replacement therapy (HRT) slows down this ageing process. Generally, the breasts get bigger and softer (due to increased fat) as a woman gets older.
Note: After menopause the breasts become softer.

1.3. Changes in the breast which may be worrying

What normal breast changes could be worrisome?

There are a number of normal changes in the breast which are not malignant (cancerous) but can result in the formation of lumps. These changes are referred to as aberrations of normal development and involution or ANDI. These are important as it may be difficult to decide whether changes in a breast are caused by ANDI or serious disease such as cancer.

Note: An aberration is not an abnormality, disease or cancer but a variation of normal which can cause symptoms and signs which may be of clinical concern

both to women and health providers. ANDI is a term used to include most benign breast conditions.

How are these normal breast changes best approached?

It is useful to divide women with breast changes into three age categories:

1. Developmental changes that occur during the early years in young women (15 to 25 years)
2. Changes due to menstrual cycle activity that occur during the mature reproductive years (25 to 45 years)
3. Changes that occur during the stage of breast involution (35 to 55 years or beyond in women who are on hormone replacement therapy)

All the changes in these three age categories are caused by hormonal effects in the breasts. As cyclical hormonal changes continue for a longer time during the mature reproductive years, ANDIs are most common in these women. The normal changes that take place in a woman's breast are determined by age.

What changes occur in the early years?

- Large breasts
- Inverted nipples

What is the appearance of a normal nipple?

There is a wide range of normal nipple shape and size. Shape and colour often change during pregnancy. It is common and can be completely normal to have an inverted (inward turning) nipple. However, it is abnormal if a nipple suddenly becomes inverted as this may be a sign of breast cancer. Eczema of the nipple is also abnormal.

What changes may occur during the mature reproductive years?

The commonest normal change is breast pain (mastalgia) which is usually worse in the days before the period starts.

1.4. Chapter Summary

- Breast development begins during embryonic life with the formation of mammary ridges, which later develop into mammary buds. These buds determine the final position of the nipple. At puberty, estrogen drives significant breast growth, leading to the development of the mature glandular structure.

- Full differentiation is reached during pregnancy and lactation. Hormonal influences, primarily estrogen, regulate breast development, from the newborn stage to adulthood and lactation

- The breast is shaped like a pear, with the tail of tissue extending towards the armpit. Some women may feel breast tissue in the armpit, especially during pregnancy which may be accessory breast tissue

- The breast consists of the nipple, areola, 10 or more lobes of glandular tissue, and supportive and fatty tissue.

- Breast lobes are the functional units of the breast, responsible for milk production during pregnancy and lactation. They drain into ducts that open onto the nipple.

- Supportive and fatty tissues help determine the shape and size of the breast and vary greatly among individuals and with age.

- The lymphatic system, which drains fluid from the tissues, plays a crucial role in removing waste and potentially harmful cells.

- Breast lymphatic typically drains to the axillary lymph nodes (armpit), but sometimes to the chest lymph nodes. Examining the axillary lymph nodes is essential during breast examinations.

Chapter 2: Clinical Breast Assessment

Duration: 190 minutes

Chapter description:

This chapter discusses clinical evaluation of breasts with careful history and thorough clinical examination to identify any abnormal findings. The chapter will be used by trainees in conjunction with national guidelines for early detection of breast cancer.

Chapter objective:

By the end of this chapter participants will be able to describe how to take careful history and be able to list important questions about breast complaints and be able to do thorough clinical examination of breasts.

Enabling objectives:

By the end of this chapter participants will be able to;

- Describe how to take careful history of patient with breast compliant
- Demonstrate thorough clinical breast examination
- Demonstrate breast self-examination

Contents:

2.1. History Taking for Breast Complaints

Activity 2:

Instruction: read out case studies loudly (one by one) from projected PPTs, and discuss the answers.

Case study 1: A 55-year-old woman presents with a painless lump in her breast. She feels the lump is new. On examination, she has a hard mass in the upper outer quadrant of the breast.

1. With regard to the risk of breast cancer, what are the 3 most important facts given in history?
2. Does breast cancer only occur in females?
3. Why is her age important?
4. What are the next most important questions to ask?
5. What specific factors are important to look for in the examination?
6. What should you feel for palpation?

Case study 2: A young woman of 23 years visits her general practitioner with an upper respiratory infection. While taking a history, she mentions that her father's mother had breast cancer.

1. Why is a family history of breast cancer important?
2. Is a history of breast cancer on the father's side of the family important?
3. Is it likely that she has breast cancer?
4. Why is the age at which the family member presented with breast cancer important?
5. What other cancer in the family will increase the risk of breast cancer?

Case study 3: A 40-year-old woman presents with a bloody nipple discharge from one breast. She is very embarrassed and asks if she can keep her T-shirt on during the examination. The general practitioner, who is in a hurry, agrees and examines her breasts with her lying down. Her armpits are not examined. He only then asks about the discharge but not about her past or family history.

1. What is the problem with the way history was taken?
2. Can you examine a woman's breast without her undressing?
3. In what position should the woman be in when her breasts are examined?
4. How should the armpits (axillae) be examined?
5. What other lymph nodes should be palpated for?
6. Where else should be examined?

Time: 30 minutes

How is a clinical assessment of the breasts performed?

1. Taking a careful history
2. Thoroughly examining the breasts

The purpose of the assessment is to reach at the most likely diagnosis of the problem.

Note: Always introduce yourself before starting the assessment.

Why is history taking so important?

An accurate history must be taken so that the patient's risk of having breast cancer can be assessed. The biggest risk factor for developing breast cancer is being female.

Breast cancer commonly occurs in women but it can also occur in males.

What history is needed?

- A family history
- A past history
- A present history
- A general medical history

What is the most important question to ask?

The most important question to ask when taking a history is the age of the woman. The risk of breast cancer increases with age (see table 2.1).

Table: 2.1: Risk of breast cancer by age when there is no family history of breast cancer.

Age (years)	Risk of breast cancer
25	1 in 15000
30	1 in 1900
40	1 in 200
50	1 in 50
60	1 in 23
70	1 in 15
80	1 in 11
85	1 in 10

The lifetime risk of breast cancer is 1 in 9 in a woman who lives to the age of 80.

What is the importance of a family history when assessing the risk of breast cancer?

A family history is very important. It is essential to ask if anyone in the woman's family has had breast cancer. If they have, they should be asked at what age did the breast cancer first present (not what age when they died of any cause). All the

people with breast cancer in the family should be noted. Ask how many women there are in the family to get an idea of the frequency of any breast cancer. A family history from the father's side is just as important as from the mother's side. Working out the risk of breast cancer from a family history is very complicated. The more cases of breast cancer there are in the family and the younger the women were at the time of diagnosis, the higher the risk to other family members. If there are women in the family who develop breast cancer at a very young age (less than 40) the risk is further increased.

A family history of breast cancer on the side of either the mother or father is an important risk factor.

Note: A number of mutations in genes such as BRCA 1 and 2 have been identified as carrying a high risk for breast cancer.

Are other cancers associated with breast cancer?

There are several other cancers that may also be a risk factor for breast cancer. The important ones are ovarian cancer and prostate cancer.

What questions should be asked in the past medical history?

- The most important question to ask is whether the woman has had breast cancer before. If she has and has a new complaint, it may well be a cancer-related problem.
- It is important to ask whether she has had other cancers, particularly ovarian cancer
- Ask about previous operations to the breasts. Women often do not tell you if they have had plastic surgery unless you ask.

What present history should be taken?

- Always take a general medical history.
- Ask general questions.
- Take a history of the presenting breast complaint.
- Ask specific questions about the breasts.

Why take a general medical history?

Although a woman may present with a breast complaint, she may have other important medical problems. These may or may not be related to the breast complaint but still need to be managed.

What general questions are important?

Ask about:

- Her menstrual cycle. It is important to know whether she is pre- or postmenopausal or pregnant.
- Is she actively breastfeeding? If not, when did she stop?
- Has she lost or gained weight recently?
- Is she taking any medications: some drugs can cause women to produce milk?

What history should be taken about the breast complaint?

It is important to ask what the main complaint is and whether one or both breasts are affected. If one, which breast is affected? Unfortunately, there are no presenting complaints that reliably indicate that the patient has breast cancer. In addition, there are many non-cancerous breast problems that can give the same symptoms as breast cancer. While the history can strongly suggest that the patient has breast cancer, the diagnosis cannot be made on the history alone. There are no presenting complaints that always indicate breast cancer.

What are the commonest breast complaints?

The commonest breast complaints are:

- Lump in the breast
- Pain in the breast
- Discharge from the nipple
- Change in breast appearance
- Breast increasing in size
- Lump in the armpit
- Redness of the breast
- Thickening of the breast

The important questions to be asked is to depend on the main complaint. This additional information is very helpful in identifying the cause of the complaint.
What questions should be asked about a lump in the breast?

- How long has the lump been present?
- Have you had a lump like this before?
- Is the lump painful? If it is painful, she should be asked whether the lump or the pain presented first. If she noticed the lump first, then it should be considered a painless lump. Lumps nearly always become tender once they have been noticed.

- Has the lump changed in size since it was noticed? If the patient is still menstruating and the lump has been there for over a month, ask whether it altered during menstruation.

What questions should be asked about pain in the breast?

- When did the pain start?
- Is the pain related to menstruation?
- Is the pain worse in any particular part of your breast?
- Can you put a finger on the point of tenderness?

What questions should be asked about discharge from the nipple?

- Are you pregnant?
- What color is the discharge?
- Is it from a single place on the nipple or from more than one place?
- Does it stain your clothes? This gives a good idea of the amount of discharge.
- Is there a discharge from both nipples?
- Does it come out without the breast being squeezed?

What questions should be asked about the change in appearance of the breast?

- When did you first notice the change in appearance?
- In what way has the breast changed? Color, skin appearance, shape, symmetry or size.

What questions should be asked about a breast increasing in size?

- Have both breasts become bigger or only one breast?
- Have you put on weight in general?
- Are you pregnant?
- Are you on any drugs such as ARVs? (Antiretroviral drugs for HIV may cause the breasts to increase in size.)

What questions should be asked about a lump in the armpit?

- Have you got lumps anywhere else? Particularly in the groins, armpits or neck.
- Have you had a fever?
- Do you have a cough?
- Have you had an injury to your arm in the last month? Specifically ask about burns to the hand from cooking.
- Always ask about HIV status.

What questions should be asked about redness of the breast?

- Is it associated with any pain or tenderness?
- Is it associated with a fever or history of itching?

- Are you pregnant or lactating?
- Are you a smoker?
- Has it changed since it was first noticed?
- How long has it been present?

What questions should be asked about thickening of the breast?

With thickening an area of the breast tissue feels denser (firmer) than the surrounding tissue:

- Is there thickening in both breasts?
- How long has it been present?
- Has it changed since it was first noticed?

What questions should be asked about nipple changes?

- Has the nipple inverted (gone in): if so, when?
- Has the skin over the nipple changed?
- Have the changes happened to both breasts?

What are associated complaints that should be asked?

- Associated cough or chest pain?
- Back or any bony pain?
- Abdominal pain or history of yellowish discoloration of eyes?

Having taken a careful history and asked the important questions, the patient's breasts should now be thoroughly examined

2.2. Clinical breast examination

How should the patient be prepared for a breast examination?
If the patient is comfortable, she should undress down to her waist and put on a gown. The examination must be done somewhere private and well illuminated. Always explain what you are going to do. Most women will be comfortable sitting undressed down to the waist. However, some teenagers may be uncomfortable and women who have large tumors may be very reluctant to show you their breasts particularly if the tumor is fungating (ulcerated and often smells offensive), It is very important to
Be able to have a good look at both breasts systematically in quadrants.

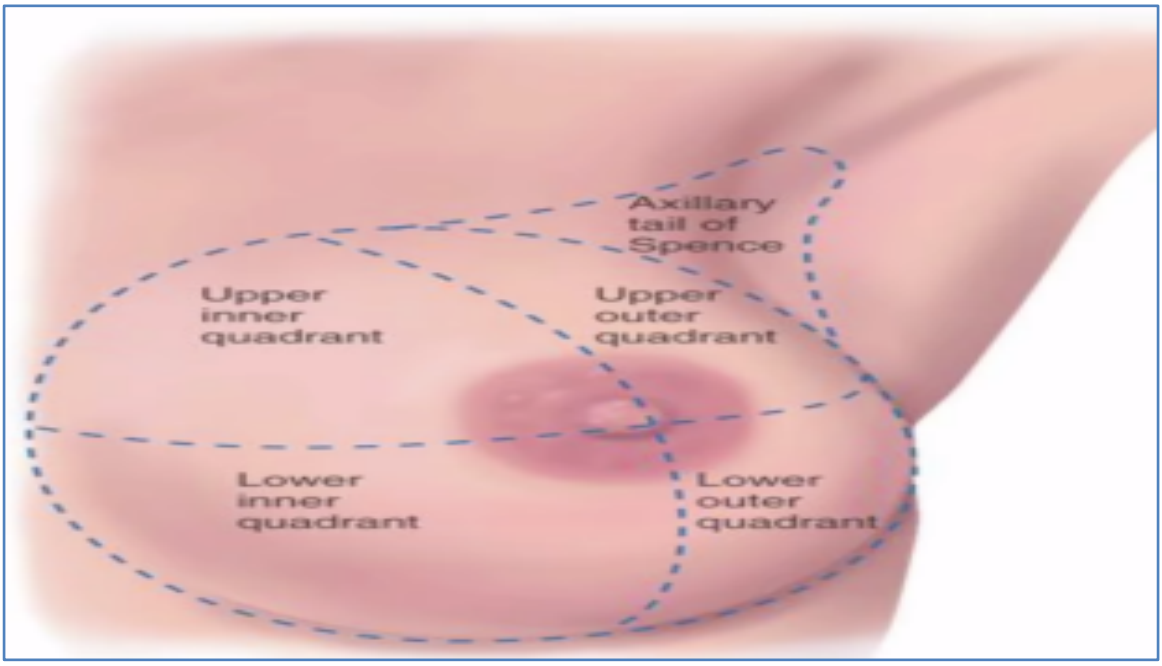


Figure 7: breast quadrants

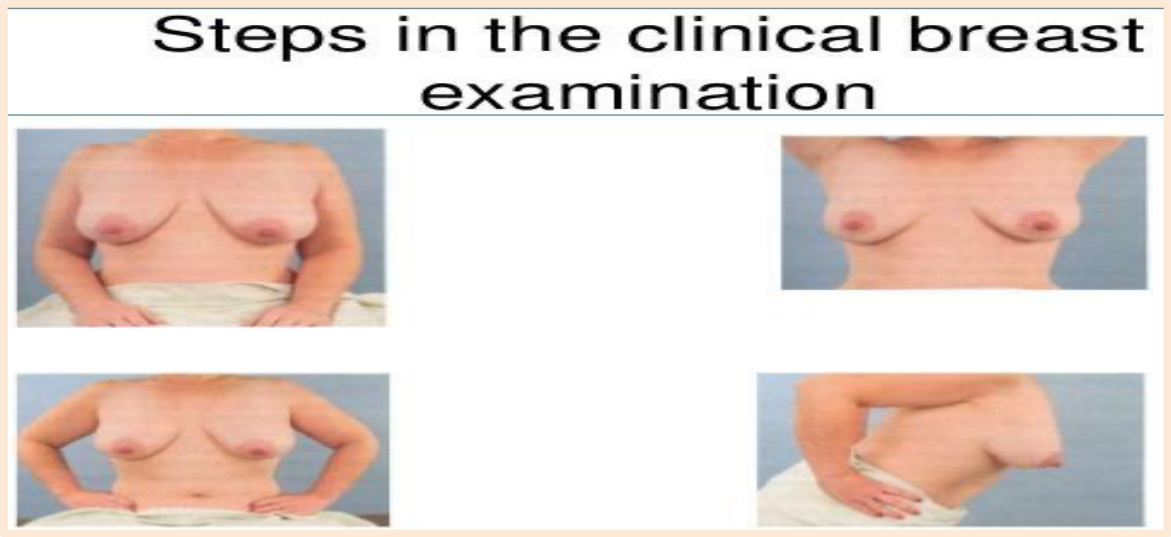


Figure 8 Different breast positions at CBE

How should a step-by-step examination of the breast be done?

The examination consists of both looking (inspection) and feeling (palpating). Wherever possible, the examination should be done in a standardized step-by-step manner. Once you have done a breast examination a few times, it will become quite quick.

1. Let the patient sit down on the examining couch and look at her breasts with her arms relaxed. Look for breast asymmetry, nipple inversion, skin changes and redness.

2. Ask the patient to raise her arms above the head. Look for any skin puckering. Ask the patient to point out where the problem is. Look specifically in that area to see if there is any change in the skin while she is moving her arm. This will help identify if a lump is attached to the skin.

3. Ask the patient to put her hands on her hips and squeeze. Look and see if the area over the lump changes. This will show whether a lump is attached (tethered) to underlying muscle. The breasts should be examined from the front with the patient sitting and relaxed, then with the arms raised and finally with the hands pressing on the hips.

4. Feel in the area above the clavicle (collar bone) for any lumps in the neck.

5. To examine the armpits properly the patient must be relaxed. If the patient is very ticklish it helps to press more firmly. The best way to get the patient to relax her muscles is by asking her to extend her arms and rest them on your shoulders while you examine the armpits. Feel in the two armpits (axillae) at the same time for any lumps. This allows you to compare the two armpits. The armpits are shaped like pyramids. You should feel along the inside wall and towards the front (anterior) for lymph nodes. Remember to feel at the top of the armpit also. If you think you feel a lump, examine that armpit very carefully. If you think you can feel a lump in one armpit it is best to examine that side alone. Palpating the armpits is an essential part of breast examination. To examine the armpits properly the patient must be relaxed.

6. Finally lie the patient down, flat on her back or sitting and palpate (feel) her breasts with her arms above her head. This will flatten the breasts and make examination easier. It is easier to think of the breasts being divided into strips and then palpate each breast from the center of the chest outwards. The breast extends from the clavicle (collarbone) above to the 6th rib below. The whole area of the breast must be examined. Always use the pulps of your fingers (the most sensitive part of your hand) with the rest of your hand gently resting against the breast. Do not use cold hands

7. Never forget to examine behind the nipple-areola complex (NAC) for any abnormalities such as skin changes, lumps or an inverted nipple. It is best to leave the nipple examination to the end once you have won the woman's trust.

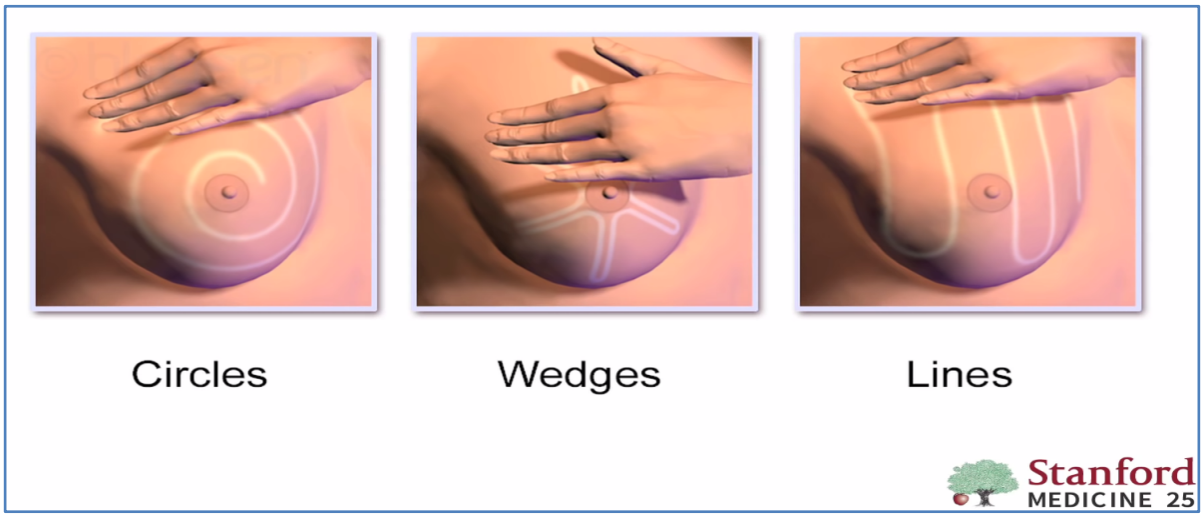


Figure 9: The breast is palpated in strips to make sure the whole breast is examined while supine (lying on her back) or sitting with her arms above her head.

Figure 10: Position while feeling in the armpits for nodes.

What do you look for when examining the breast?

1. Asymmetry: compare both breasts
2. Skin changes: the skin changes that are important include:

- Peau d'orange means skin of an orange and usually indicates that there is cancer.
- Redness. Mark the area of redness.
- Note if there are any areas where the skin seems to be stuck to the underlying breast tissue.

3. Change in the nipple. The 3 important things to look for are:

   - Inversion: a nipple pulled in instead of sticking out. This may be normal for the patient but is important if it has changed and the nipple used to stick out.
   - Change in the skin over the nipple: eczema-like changes need to be tested to ensure they are not Paget's disease which involves the nipple and areola.
   - Discharge: if there is discharge from one or both nipples, note the color and how many places in the nipple it comes from. Discharge from only one duct is more likely to be associated with malignancy.

4. There can be any number of skin related problems that can be seen over the breast: melanomas, other skin cancers or sebaceous cysts.

What should you feel for when examining a breast?

5. Lumps in the breast. It is important to note (characterize the lump):
   - The texture of the lump. The texture may be soft, firm or hard. Soft feels like your lips, firm feels like the tip of your nose, hard is like bone (your forehead).
   - Whether the lump is fixed to the skin or chest wall.
   - The tenderness, size and position of the lump.
   - If the lump is easy to move or not (mobility).
   - If the lump has well-defined edges.
6. Thickening of the breast. Women with dense breasts may have normal dense tissue overlying and hiding a small cancer. If there is obvious asymmetry in the thickening, there may be a pathological cause. These patients should be referred for imaging. However, some asymmetry is normal.
7. Lumps in the armpit. It can be normal to feel lymph nodes in a thin patient. Any lymph node should be further evaluated.

When is the best time to examine a woman's breasts?

Examining the breasts can be very difficult particularly in young women. They can vary enormously depending on individual changes, the age of the patient and the stage of the menstrual cycle. The ideal time to examine a young woman is between day 6 and14 of her menstrual cycle. (Day 1 being the first day of the period.)

How should a breast examination be performed in a man?

The majority of patients with breast complaints are female. However, there are a number of male patients and they must be treated with empathy and compassion, as they are often very embarrassed to admit to having a problem with their breast. The approach to taking a history and examining the breasts of a man must be the same as that of a woman.

2.3. Breast Self-Examination

Note: All women should be shown how to examine their breasts every month.

All women should be taught to examine their own breasts (BSE) and advised to have a healthy lifestyle. They should look for any change like:

- Lump or thickening inside the breast
- Swelling, warmth or change in color of breast
- Change in size or shape of the breast
- Dimpling or puckering of the breast
- Itchy, scaly sore or rash on the nipple
- Pulling in of nipple or other parts
- Nipple discharge that starts suddenly
- New pain that does not go away
- They should be advised healthy lifestyle like:
    - Maintain weight, add exercise, limit alcohol, limit postmenopausal hormone use, encourage breastfeeding

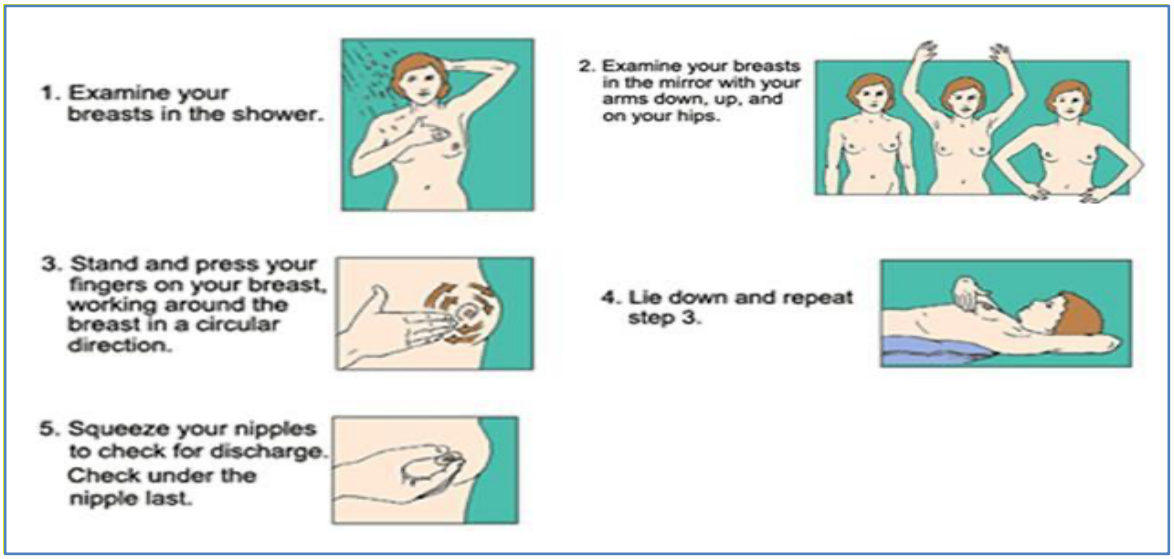


Figure 11: how to do breast self-examination (BSE)

Checklist for breast examination

Risk Factors

- ✓ Age
- ✓ Sex (being female)
- ✓ Family history-first degree relative
- ✓ Early menarche
- ✓ Late menopause
- ✓ Nulliparous
- ✓ Previous breast biopsies with abnormal results
- ✓ History of ovarian cancer
- ✓ History of breast cancer (unilateral)

Breast Examination;

- ✓ Use a well-lit examination room;

Breast Inspection patient in 4 positions:

- ✓ Arms at sides
- ✓ Arms over head
- ✓ Hands on hips
- ✓ Leaning forward;
- ✓ Inspect both breasts noting any abnormalities and differences.
- ✓ Suspect malignant lesion if:
- ✓ New nipple retraction
- ✓ Dimpling of skin
- ✓ Bloody nipple discharge
- ✓ Unilateral nipple discharge
- ✓ Ulceration on the areola (R/O Paget's)
- ✓ Erythematous plaque with or without ulceration

Breast Palpation;

- ✓ Position patient in supine, relaxed position with arm overhead and breast exposed;
- ✓ Palpate the breast tissue using the palmar pads of the middle three digits; use a gentle rotatory motion and at each palpation site use three levels of pressure intensity: shallow, medium and deep;
- ✓ Overlap each site using the vertical strips pattern;
- ✓ Cover all areas within these borders:
- ✓ The clavicle superiorly
- ✓ The sternum medially
- ✓ The mid-axillary line laterally

- ✓ Rib beneath the breast inferiorly.
- ✓ "Tail of Spence";
- ✓ Gently palpate the subareolar area and the nipple;
- ✓ Examine the other breast using the same procedure. Note any differences.

If a lump is detected, document:

- ✓ Size, in centimeters
- ✓ Location: quadrant/subareolar
- ✓ Mobility
- ✓ Texture: soft/hard
- ✓ Texture: smooth/irregular
- ✓ Associated skin changes

Lymph Node Palpation;

- ✓ Palpate the areas above and below the medial aspects of the clavicle; note any nodules or masses. Place tips of digits into the apex of the axilla and gently palpate all surfaces of the anterior and posterior walls. Note any nodules or masses.

If node is palpable, document:

- ✓ Texture-soft, rubbery, hard
- ✓ Mobility
- ✓ Tenderness
- ✓ Location
- ✓ Size, in centimeters

2.4. Chapter Summary

- In a woman in whom breast disease is suspected, it is important for the examiner to determine the patient's age and to obtain a reproductive history.
- The family history should detail any known genetic abnormalities as well as any cancer, but especially of the breast and ovaries and the menopausal status of any affected relatives.
- The patient should be asked about the history of a mass, breast pain, nipple discharge, and any skin changes.
- The physical examination of the breast should be in a different position begins with the patient in the upright sitting position. The breasts are visually inspected for obvious masses, asymmetries, and skin change Visual inspection should be followed by palpation of the regional lymph nodes and breast tissue
- Palpation of the breast is always done with the patient lying supine on a solid examining surface, with the arm stretched above the head.
- The breast is best examined with compression of the tissue toward the chest wall, with palpation of each quadrant and the tissue under the nipple-areolar complex.
- Benign tumors are soft to firm usually, these benign entities are distinct, well circumscribed, and movable.
- Carcinoma is typically firm but less circumscribed, and moving a carcinoma produces a drag of adjacent tissue. Most palpable masses are self-discovered by patients during casual or intentional self-examination and all females of the reproductive age group are strongly advised to perform BSE.

Chapter 3: Benign Breast Abnormality

Duration: 260 minutes

Chapter Description:

This chapter explores benign breast changes that arise from a variety of clinical conditions, including inflammation, infections, and physiological changes associated with pregnancy. It discusses different types of proliferative and non-proliferative breast abnormalities, highlighting how these can lead to symptoms such as lumps, discharge, and pain. A significant emphasis is placed on the critical need to differentiate these benign conditions from breast cancer. The chapter aims to equip trainees with the essential knowledge and skills necessary for accurately distinguishing between benign breast abnormalities and malignant conditions, thereby enhancing clinical assessment and patient management.

Chapter Objective:

By the end of this chapter participants will be able differentiate different types of benign breast abnormalities

Enabling objective:

- Explain symptoms of benign breast disease
- List the causes of Benign breast lump
- Outline the causes painful breasts
- Describe the cause of nipple discharge
- Demonstrate how to differentiate different types of BBC from Breast cancer

Outline:

3.1. Benign changes of the breast

Activity 3

Instruction: read out case studies loudly (one by one) from projected PPTs, and discuss the answers.

Case study 1: Breast lump; A 21-year-old woman presents to the clinic with a breast lump On examination it is 2 by 2 cm mobile mass.
1. What is the most likely cause?
2. How do you evaluate this patient?
3. What investigation do you order?
4. When is biopsy required?
5. Ultrasound examination revealed well defined mass with sharp border suggestive of fibroadenoma. How do you treat this patient?
6. Will the approach be different if the age at presentation was 45 years?

Case study 2: Breast pain; A 42-year-old lady worried about recent onset of breast pain; she has no palpable breast lump. She has no family history of breast cancer.
1. What further question do you ask?
2. What are the types of breast pain?
3. What investigation do you request?
4. How do you treat this lady?

Time: 30 minutes

Benign changes of the breast are non- cancerous unusual growths or other changes in the breast tissue. Most benign breast conditions don't increase your risk of developing breast cancer. Some of them cause symptoms.

Why is it important to know about benign breast conditions?

- They are quite common — even more common than breast cancer
- The symptoms and signs often mimic those caused by breast cancer and at times require further testing. Any abnormal change in the breast can be a sign of cancer and needs to be checked by health professional
- Some benign breast conditions can increase risk of developing breast cancer.

Benign conditions are grouped into three categories

1. Non proliferative: There is no increase in risk of breast cancer in this group. Breast cancer screening like any average risk woman is recommended. Examples - breast cyst, fibroadenoma, fibrocystic breast change, central intraductal papilloma, papillary apocrine change
2. Proliferative: This group has slight increased risk of breast cancer. Examples - Peripheral intraductal papilloma, Benign Phyllodes tumor and Adenosis.

3. Atypical proliferative: This group is associated with moderate increase in risk of breast cancer. It requires more frequent screening and individualized decisions on a case-by-case basis. There are three main types of atypical hyperplasia (atypical lobular hyperplasia, atypical ductal hyperplasia and lobular carcinoma in situ).

Diagnostic evaluation: same as those used to diagnose breast cancer. The goals are:

1. To make sure that the growth or other change detected is really benign
2. To determine whether the condition is associated with any increase in cancer risk

Proper evaluation includes:

- Medical history and physical exam
- Imaging tests (mammography and breast ultrasound of the breast
- Nipple discharge analysis
- Pathology: FNAC or Core needle Biopsy. Incisional/Excisional biopsy if FNAC or Core Needle Biopsy are inconclusive

Signs and symptoms of benign breast conditions

- Pain, swelling, nipple discharge
- Redness or scaling on the nipple and/or skin of the breast
- Nipple retraction, tenderness, palpable mass

Symptom or Finding	Possible Causes or Disorders
Breast pain	
Cyclic pain	Hormonal stimulation of normal breast lobules before menses
Noncyclic pain	Stretching of Cooper's ligaments Pressure from brassiere Fat necrosis from trauma Hidradenitis suppurativa Focal mastitis Periductal mastitis Cyst Mondor's disease (sclerosing periphlebitis of breast veins)
Nonbreast pain	
Chest-wall pain	Tietze's syndrome (costochondritis) Localized lateral chest-wall pain Diffuse lateral chest-wall pain Radicular pain from cervical arthritis
Non–chest-wall pain	Gallbladder disease Ischemic heart disease
Nipple discharge	
Presence of galactorrhea	
From multiple ducts bilaterally	Hyperprolactinemia from pituitary tumor, hypothyroidism, drugs*
Absence of galactorrhea	
From one duct — elicited or spontaneous and bloody, with occult blood, or serosanguineous	Intraductal papilloma Ductal carcinoma in situ Paget's disease of breast
From multiple ducts — elicited and bloody or nonbloody, bilateral, black or clear	Fibrocystic changes Ductal ectasia
Discrete solitary lump	
Age <30 yr	
Firm, rubbery lump	Most common lesion: fibroadenoma
Age 30–50 yr	
Firm, discrete lump	Most common lesions: fibroadenoma, cyst, fibrocystic changes, usual ductal hyperplasia, atypical ductal hyperplasia, atypical lobular hyperplasia†
Age >50 yr	
Firm, discrete lump	Most common lesions: cyst, ductal carcinoma in situ, invasive cancer
Diffuse lumpiness ("lumpy-bumpy")	
Absence of discrete lump	Fibrocystic changes

Figure 12: Breast symptoms and possible causes

3.2. Breast Lump

3.2.1. Breast cyst

Breast cysts are round or oval structures filled with fluid representing 25% of all breast masses ranging in size from very tiny to large palpable cysts. They're most common for women in their 40s.

Symptoms: Small cysts are often asymptomatic and detected in imaging. Larger cysts cause pain, tenderness, or lumpiness in the breast. Those symptoms may worsen and get better at different points in the menstrual cycle. On examination, large cysts are usually round and fairly mobile under the skin.
Diagnosis: requires ultrasound examination of the breast.
Classification: three types based on ultrasound finding:

1. Simple cysts have smooth, thin, regularly shaped walls and are completely filled with fluid. Simple cysts are always benign.
2. Complex cysts have irregular or scalloped borders, thick walls, and some evidence of solid areas and/or debris in the fluid. A complex cyst needs to be aspirated, or drained with a fine needle. If blood or any unusual cells are identified on cytology, biopsy is mandatory to rule out breast cancer.
3. Complicated cysts are "in between" simple and complex. Although they share most of the features of simple cysts, they tend to have some debris inside them. However, they don't have the thick walls or obvious solid components that a complex cyst has.

It is very important to rule out any possibility of malignancy in complex and sometimes complicated cysts. In such cases biopsy may be needed.

Treatment: depends on the type and size of the cyst

- For Simple cysts, no treatment is needed unless the cyst is large, uncomfortable, or painful. The cyst can be then drained with a fine needle. If the cyst comes back, it may be evaluated again with mammogram and ultrasound.
- For complicated or complex cysts, the follow-up plan is generally every 6-12 months for 1-2 years. The follow up evaluation includes clinical breast exam and ultrasound, with or without mammography.

3.2.2. Fibroadenoma

It is a tumor made up of fibrous tissue, and glandular tissue It is the most common type of benign breast tumor with prevalence of about 25%. It usually occurs in younger age with peak age of 15- 35 years. Fibroadenomas comprise about 50% of all breast biopsies, and this rate rises to 75% for biopsies in women under the age of 20 years.

Cause: unknown but may be related to reproductive hormones

- Occurs more often during reproductive year
- Higher estrogen levels due to pregnancy or hormone therapy can cause a fibroadenoma to get bigger
- Menopause often causes it to get smaller.

Types of fibroadenoma:

- simple fibroadenoma
- Complex fibroadenomas: can contain changes, such as an overgrowth of cells (hyperplasia) that can grow rapidly
- Juvenile fibroadenomas: in girls and adolescents between the ages of 10 and 18. These fibroadenomas can grow large, but most shrink over time, and some disappear
- Giant fibroadenomas: fibroadenoma larger than 5 centimeters

Characteristics: well-defined round/oval and a rubbery-feeling and is freely movable
Diagnosis:

- In young patients < 30 years of age: clinical examination with typical ultrasound finding
- In patients older than > 30 years: cytology or biopsy is required to exclude cancer.

Treatment: For simple fibroadenoma reassurance is enough. In case of Giant fibroadenoma and anxious symptomatic patient surgical removal is advised.

3.3. Painful Breast (Mastalgia)

Painful Breast (Mastalgia) is very common in women of all ages and is a cause of anxiety. On its own, pain in the breasts isn't usually a sign of breast cancer.
Types of breast pain

- Cyclic Breast pain - is often happening around the time of a woman's menstrual period. It goes away after the period ends. This type of pain

usually occurs in both breasts. It is more common in younger women and often stops after menopause

- Non-cyclic Breast pain - does not appear to be related to the menstrual cycle. This type of breast pain is more common in women between 30 and 50 years of age. It can occur mostly in one breast.

It is important to note that Breast pain without breast lump may not be a sign of breast cancer. It is usually a sign of non-cancerous (Benign) breast conditions. The other cause of pain which at times is considered as breast pain comes from chest wall conditions usually caused by muscular or joint problems of the chest wall. Most breast pain is effectively managed with simple analgesic.

	Cyclical	Noncyclical	Musculoskeletal
Age of onset	30s	30s-40s	Any age
Location	Bilateral, upper-outer quadrant	Unilateral, one area	Usually unilateral near the breast-bone
Area	Spread out	One spot	Different parts of the breast
Description of pain	Dull, aching	Sharp, stabbing	Burning, aching
Menstrual status	Premenopausal	Pre- or post-menopausal	Any age
Hormone therapy	Responds well	Minimal response	No response
Ibuprofen/ aspirin	Some help	Some help	Very helpful

Adapted from Provenzano DA, Levin M. Chronic pain syndromes: how to break the cycle, part 1. *Consultant.* 2008;4:297-298.

Figure 13: Characteristics of breast pain by type

3.4. Nipple Discharge

Nipple discharge is any fluid or other liquid that comes out of your nipple spontaneously or when you squeeze the nipple. Nipple discharge is the third most common breast symptom prompting medical care after breast pain and breast mass. It is categorized as lactation (physiologic) and pathological according to clinical history and the characteristics of the discharge.

Pathological causes of nipple discharges

- Contraceptive pills
- Breast infection or abscess
- Duct papilloma
- Drugs that increase levels of prolactin, such as antidepressants
- Fibrocystic breast
- Hormone changes during your period or menopause
- Injury to the breast
- Mammary duct ectasia, a blocked milk duct
- Prolactinoma, a noncancerous tumor of the pituitary gland
- Hypothyroidism
- Breast cancer

Table 3.1: Characteristics of nipple discharge colors and possible causes in lactating women

Nipple Discharge Color	Possible Cause(s)
Clear (serous)	Blocked milk ducts, breast cancer
Milky white	Breastfeeding, hormone changes, galactorrhea
Yellow	Infection
Green	Blocked milk ducts, fibrocystic breast disease
Brown	Fibrocystic breast disease
Red (bloody)	Intraductal papilloma, breast cancer

3.5. Breast Infections

Mastitis

Mastitis is defined as inflammation of the breast with or without infection. It is a relatively common breast condition; it can affect patients at any time but predominates in women during the breast-feeding period.

Figure 14: mastitis

Breast Abscess

Breast abscess is defined as a localized collection of inflammatory exudates in breast tissue. Lactational breast abscess is a complication of lactational mastitis if not managed in an expeditious fashion.

Figure 15: breast abscess

Signs and symptoms of breast infection

- Breast pain. fever, malaise, and myalgia
- Warmth, tenderness, swelling, erythema and fluctuant mass in the affected breast
- Enlargement of axillary lymph nodes

Diagnosis: Diagnosis of mastitis or breast abscess is usually made based on the clinical presentation. Ultrasound is a useful diagnostic tool. A full blood count (FBC) with a differential and blood cultures are indicated in patients with suspected systemic infection, abscess, recurrent infection, or treatment failure. Fine needle aspiration can be used for diagnosis.

Management of Mastitis

- Lactational mastitis: analgesia +/- warm compress and effective milk removal from the affected breast + anti-staphylococcal antibiotics.
- Non-lactational mastitis: the first line therapy should be with oral antibiotics against staphylococcus aureus and anaerobic bacteria. If MRSA is suspected, then the patient should be started on a non-beta-lactam antibiotic. The patient should be reassessed and if there is no improvement antibiotic needs to be changed to antibiotic with activity against MRSA.

Note: the possibility of other underlying pathology should be ruled out. It is advised to take FNA or biopsy

Management of Breast Abscess

- Needle aspiration: for draining abscesses less than 5 cm.
- Open surgical drainage: for those with ischemia or necrosis of the overlying skin or those with abscesses over 5 cm in diameter

Activity 4
Instruction: read out case studies loudly (one by one) from projected PPTs, and discuss the answers

Case Study 1: Breast lump; A 21-year-old woman presents to the clinic with a breast lump on RUQ. On examination it is 2 by 2 cm mobile mass.

1. What is the most likely cause?
2. How do you evaluate this patient?
3. What investigation do you order?
4. When is biopsy required?
5. Ultrasound examination revealed well defined mass with sharp border suggestive of fibroadenoma. How do you treat this patient?
6. Will the approach be different if the age at presentation was 45 years?

Case Study 2: Breast pain; A 42-year-old lady worried about recent onset of breast pain; she has no palpable breast lump. She has no family history of breast cancer.

1. What further question do you ask?
2. What are the types of breast pain?
3. What investigation do you request?

A. How do you treat this lady?

Time: 30 minutes

3.6. Chapter Summary

- Benign changes of the breast are non- cancerous unusual growths or other changes in the breast tissue. They are very common and affect many women.
- Evaluation of benign conditions is important as the symptoms overlap with those of breast cancer. Evaluation is also important to identify those lesions that have increased risk for breast cancer. Evaluation is similar to that of breast cancer and includes clinical evaluation, imaging studies and pathologic examination.
- Treatment should be individualized based on specific diagnosis and risk of breast cancer.

Chapter 4: Cancer of the Breast

Duration: 140 minutes

Chapter Description:

This chapter provides a comprehensive overview of breast cancer, a critical public health concern globally and in Ethiopia. It explores the magnitude of the problem, different types of breast cancer, clinical presentations, and diagnostic imaging techniques.

Chapter Objective:

At the end of this chapter the participants' will be able to describe breast cancer

Enabling Objectives:

- Describe the global and Ethiopian burden of breast cancer
- Identify the different subtypes of breast cancer.

Contents:

4.1.Introduction

Activity 5

Instruction:

Read the following two case studies one by one and discuss the three questions that follow in small groups.

Case Study 1: A 45-year-old woman with no significant family history presents with a painless lump in her left breast. A core needle biopsy reveals a cluster of abnormal cells lining a milk duct. These cells show signs of uncontrolled growth but lack invasion into surrounding breast tissue.
Case Study 2: A 62-year-old woman with a strong family history of breast cancer notices a dimpling in the skin of her right breast. A surgical biopsy reveals a mass of malignant cells within breast tissue. The tumor cells have infiltrated beyond the basement membrane of the milk ducts.

1. Is this Invasive or non-Invasive cancer?
2. What specific details in the pathology description were most helpful in making your decision?
3. What are some recommended next steps for this patient?
4. Which signs and symptoms from Lists A and B are potentially indicative of breast cancer? Explain your reasoning for each selection
    A. List A: breast lump, nipple retraction, skin changes, bloody discharge
    B. List B: breast pain, premenstrual breast tenderness, itchy nipples

Time:30 minute

Breast cancer poses a significant global health challenge. It's the second most common cancer diagnosed in women worldwide with an estimated 2.3 million new cases, comprising 11.6% of all cancer cases. Alarmingly, it's also the leading cause of cancer death among women. In 2022, it is estimated that 666,000 women died from breast cancer. This translates to roughly 15.4% of all female cancer deaths.

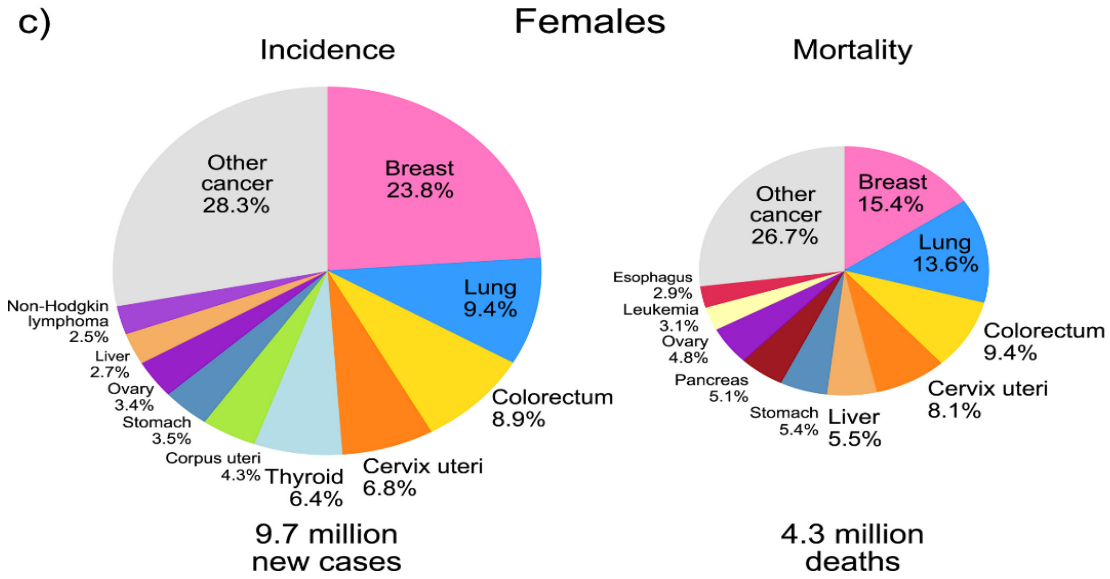


Figure 16: Distribution of Cases and Deaths for the 10 Most Common Cancers in 2022 for (C) Females. For each sex, the area of the pie chart reflects the proportion of the total number of cases or deaths; nonmelanoma skin cancers are included in the "other" category. Source: GLOBOCAN 2022.

Local data on epidemiology of cancer in Ethiopia is limited. However, the Addis Ababa Population-Based Cancer Registry (AACR), established in September 2011, serves as the sole source of population-based cancer data in the country. Global Burden of Cancer Study (GLOBOCAN) uses this data to estimate cancer incidence and mortality.

Breast cancer emerges as the leading cancer in Ethiopia, with an estimated 15,244 new cases annually. This translates to 32.9% of all female cancers diagnosed each year. It's important to note that this national estimate is based on data collected from the Addis Ababa registry.

4.2. Breast cancer

What is breast cancer?

Breast cancer is a group of diseases resulting from transformation of normal breast tissue cells to cancer cells and characterized by uncontrolled growth. It primarily affects women and people assigned female at birth (AFAB), but can also occur in men.

The Origins of Breast Cancer:

- Breast cancer arises when mutations occur in the DNA of breast cells, causing them to grow and divide uncontrollably. These mutations can be: Inherited or Acquired:
- How breast Cancer Develops:
- Once mutations occur, abnormal cells may start dividing rapidly and forming lumps or masses.
- Early stage breast cancer involves abnormal cells confined within the ducts or lobules.
- If left treated, these abnormal cells can break through the walls of the ducts or lobules and invade surrounding breast tissue.
- Invasive cancer cells can further enter the LVS and potentially travel to other parts of the body.

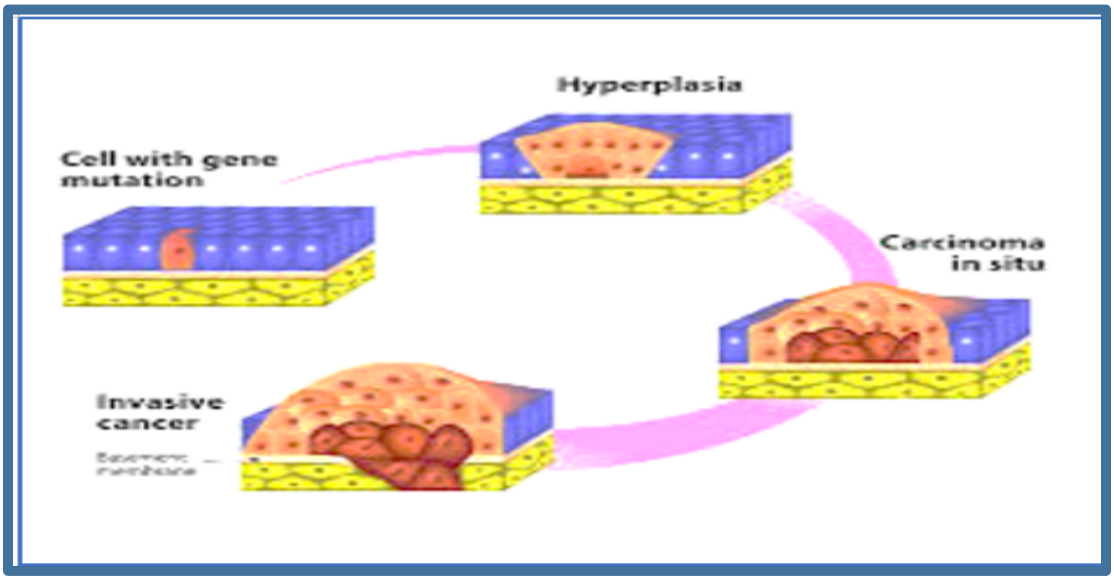


Figure 17: Breast cancer development

Types of breast cancer?

There are many different types of Breast cancer. Most Breast malignancies arise from epithelial elements and are categorized as adenocarcinomas.

Breast carcinomas are a diverse group of lesions that differ in microscopic appearance and biologic behavior, although these disorders are often discussed as a single disease.

Breast cancer is usually classified based on:

1. Invasiveness
2. The cell (tissue) of origin - 2019 WHO classification of tumors of the breast (Annex)

3. The biology of the tumor -molecular subtype

1. Based on Invasiveness: breast cancer can be classified into two
   I. Non-invasive breast cancer
   II. Invasive breast cancer

I. Non-invasive (carcinoma in-situ) – Stage 0 Breast cancer:

The grades are:

- Grade 1 (well differentiated) corresponds to a sum of three to five points,
- Grade 2 (Moderately differentiated) - corresponds to a sum of six to seven points, and
- Grade 3 and 4(poorly differentiated) -corresponds to a sum of eight or above.

It is important to note that:

- ✓ The symptom and sign depend on stage of the disease
- ✓ Early breast carcinomas are asymptomatic

1. Patient History

The history includes the duration of lump, associated local symptoms noted by the patient. The duration will give us an idea about the biology of the tumor. Slow growing over years tends to be indolent. The history should look for all systemic symptoms for evaluation of distant spread. These includes:

- ✓ Cough and chest pain
- ✓ Abdominal pain
- ✓ Bone/back pain
- ✓ Headache

Note: The other purpose of the history is for risk assessment (all possible risk factors). A detailed family history of breast cancer in a first-degree relative will help for genetic counseling and screening of the other family members.

2. Physical Examination

Include the following:

- Breast examination

The aim of the examination is to evaluate the clinical stage of the cancer. Based on clinical examination of the breast and regional lymph nodes the clinical T and N stage is given and the patient is labeled as early stage or locally advanced breast cancer patient.

Characterization of breast lump:

- ✓ Change in breast size or shape
- ✓ Lump size, location, constancy, mobility, border
- ✓ Nipple retraction, discharge, and skin change
- ✓ Fixation to skin or chest wall
- ✓ Skin dimpling or skin changes (eg, thickening, swelling, or redness)
- ✓ Edema or peau d`orange

Examination of regional lymph nodes

- ✓ Axillary and supraclavicular lymph node size and fixation are important for staging
- ✓ Location of lymph node (same side or contralateral)

Systemic Examination:

Some patients may present late with metastatic disease at presentation. A complete examination includes assessment of the chest, abdominal, sites of skeletal pain, and neurologic examinations. The clinician should be alert to symptoms of metastatic spread such as,

- Jaundice
- Any chest finding on examination
- Bone tenderness
- Abdomen- enlarged liver, sign of fluid collection
- Any localizing neurologic signs or altered cognitive function

3. Imaging studies in breast cancer:

3.1 Mammography:

There are 2 types of mammography examinations: screening and diagnostic.

- ✓ Screening mammography is done in asymptomatic women.
- ✓ Diagnostic mammography is performed in symptomatic women.Most guidelines recommended starting regular mammography for women at average risk for breast cancer at age of 40- 50 years, and to perform mammography annually or biennially

4.3. Chapter Summary

- Breast cancer arises from mutations in breast cell DNA, leading to uncontrolled growth. These mutations can be inherited or acquired throughout life
- Breast cancer can be classified into three types based on their invasive behavior, histological and molecular classification
  1. noninvasive (in situ) and invasive carcinoma,
  2. histological types of invasive breast cancer.

3. Molecular classification

- The main signs and symptoms of breast cancer include breast lump, nipple retraction, pau de d'orange skin changes and bloody nipple discharge

Chapter 5: Management of Breast Cancer

Duration: 50 min

Chapter description:

This chapter provides trainees with an understanding of breast cancer treatment modalities, focusing on the differentiation between early and advanced stages, various treatment options, the role of multidisciplinary teams, and palliative care options for advanced-stage patients.

Chapter Objective:

By the end of this chapter participants will be able to describe treatment modalities of breast cancer and refer for appropriate interventions.

Enabling Objectives:

By the end of this chapter participants will be able to:

- Differentiate between early and advanced stages of breast cancers
- Mention treatment options of breast cancer both for early and advanced stages of breast cancers
- Explain the role of multidisciplinary team discussion (MDTs) for breast cancer treatments

Outline:

5.1 Surgical treatments for breast cancer

- Simple mastectomy
- Modified radical mastectomy
- Breast conserving surgery

- Radical mastectomy
- Skin sparing mastectomy
- Nipple areola sparing surgery
- Palliative surgery

5.2 Chemotherapy

Neoadjuvant chemotherapy (NACT):

- Is the administration of therapeutic agents before a primary treatment (e.g. Surgery, radiotherapy).
- The goal is to shrink the primary tumor to improve the effectiveness of surgery or to decrease the likelihood of micro metastases.

Adjuvant chemotherapy (ACT)

- Also known as adjunct therapy, add-on therapy, and adjuvant care, is therapy that is given in addition to the primary or initial therapy to maximize its effectiveness.
- Adjuvant treatment of breast cancer is designed to treat micro-metastatic disease
- Treatment is aimed at reducing the risk of future recurrence, thereby reducing breast cancer-related morbidity and mortality.
- Adjuvant treatment for breast cancer involves radiation therapy and systemic therapy (including a variety of chemotherapeutic, hormonal and biologic agents).

5.3 Hormonal and other targeted therapies

Hormonal Therapy:

- Hormone treatments act by blocking the action of estrogen at the receptor or by decreasing its production.
- Adjuvant hormone therapy can reduce the relative risk of distant, ipsilateral, and contralateral breast cancer recurrence by up to 50% in tumors with high ER receptor expression

5.4. Radiotherapy for breast cancer

Radiation therapy

- It is a clinical modality dealing with the use of ionizing radiation in the treatment of patients with malignant neoplasia.

- The aim of radiation therapy is to deliver a precisely measured dose of irradiation to a defined tumor site with as minimal damage as possible to surrounding healthy tissue.
- This results in eradication of the tumor, improved quality of life, and prolonged survival or palliation of symptoms.

5.5. Surveillance for Breast Cancer

After treatment for breast cancer patients are expected to have scheduled follow-up

- History and physical examination every 3 months for the first two years; every six months for the next three years and then annually for next 5 years.
- Follow up with mammography should be done annually.
- If there is no sign and symptom of recurrence/ metastasis there is no indication for laboratory or imaging studies.

Patients are supposed to be educated regarding overall health care, lifestyle, adherence to any endocrine therapy, symptoms of recurrence and complications of treatments.

5.6. Breast cancer in special population

Male breast cancer

- Breast cancer is a rare diagnosis in men. In addition, the prognosis for men and women with breast cancer is similar.

Breast cancer in pregnancy

- After counseling the patient, surgery can be done for the eligible ones.
- Most chemotherapy agents for breast cancer carry a risk of teratogenicity in humans.
- Chemotherapy can safely be administered after the first trimester until up-to 1 month prior to expected date of delivery

5.7. Chapter Summary

- The management of breast cancer depends on the stage of the disease.
- Treatment options encompass surgical interventions, chemotherapy, hormonal therapies, and radiotherapy.
- The significance of multidisciplinary team discussions (MDTs) in formulating comprehensive treatment plans is highlighted.

- Palliative care should be incorporated into the overall management strategy.
- Additionally, breast cancer can affect males and occur during pregnancy.

Chapter 6: Palliative Care in Breast Cancer

Duration: 90 min

Chapter Description:

This chapter aims to equip trainees with a comprehensive understanding of palliative care, specifically for breast cancer patients, including its definition, components, and evaluation of common physical symptoms. Trainees will also learn about psychosocial support in palliative care and gain insights into end-of-life care, including issues related to delirium, confusion, and coma.

Chapter Objective:

At the end of this chapter participants will be able to discuss palliative cares for breast cancer patients.

Enabling objective:

- Describe concept of palliative care
- Explain the evaluation of common physical symptoms
- List components of palliative care
- Mention what psychosocial support is in palliative care
- Discuss about end-of-life care, delirium, confusion and coma

Contents:

6.1. Definition of palliative care

Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification, assessment and treatment of pain, physical, psychosocial and spiritual problems. (WHO 2020)

- Palliative care Provides relief from pain and other distressing symptoms by integrating the psychological and spiritual aspects of patient care.

- It affirms life and regards dying as a normal process, by intending neither to hasten nor postpone death.
- Palliative care offers a support system to help patients live as actively as possible until death and to help the family cope during the patients' illness and in their own bereavement.
- It is always to be remembered that palliative care should be integrated early in the care of the course of illness, in conjunction with other therapies that are intended to prolong life, such as chemotherapy, surgery or radiation therapy.
- It includes investigations needed to better understand and manage distressing clinical complications

Breast cancer is the most common cancer and is the leading cause of cancer-related death in women worldwide. Palliative care should be integrated into the whole spectrum of breast cancer care.

6.2. Pain Management:

Pain arising in the advanced stage of breast cancer can cause emotional suffering and affects the quality of life of patients.

- Pain usually does not occur in early breast cancer.
- A painless lump may be the first symptom.
- In later stages, pain may occur due to involvement of deeper structures like muscles, ribs, etc., resulting in severe pain which increases with chest movement

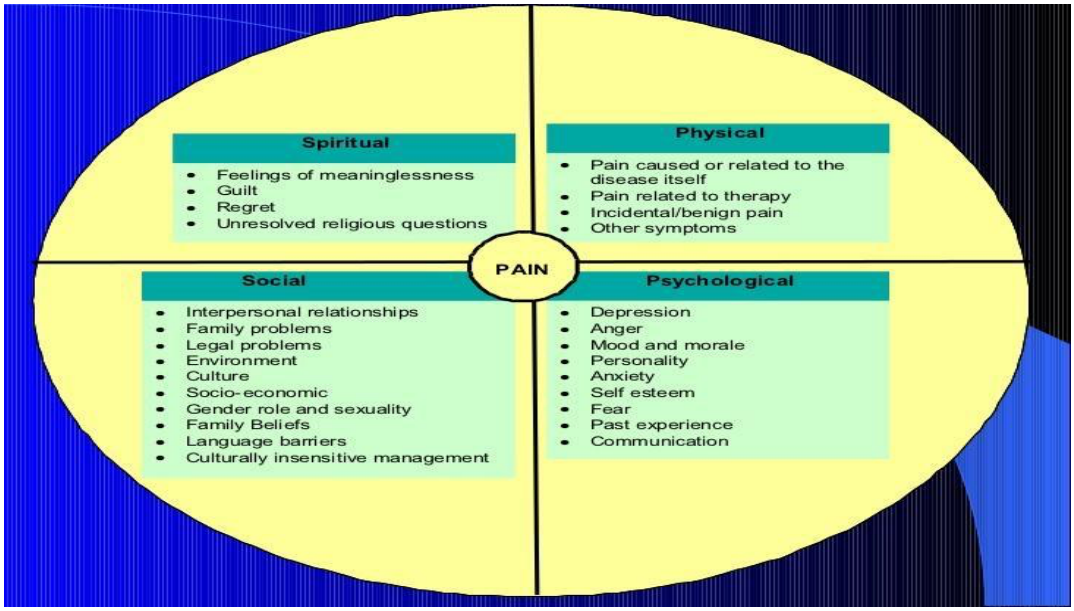


Figure 18: Causes of pain

1. Cancer itself: due to release of inflammatory mediators or due to metastases to distant tissues including bones and neuronal tissue
2. Cancer treatment-sensory neurons are degenerated after chemotherapy and leading to neuropathic pain.
3. Radiotherapy induced pain arises as a result of micro vascular changes and nerve compression.
4. Surgery causes nerve injury and irritation of nerves resulting in continuous pain

Pain management:

In about 85 – 90 per cent of the patients, the pain can be controlled by oral analgesics given according to the World Health Organization (WHO) analgesic ladder, while in others additional interventions may be required. These could be offered in an integrated approach including:

- Antitumor therapies (including disease-modifying agents: hormonal, chemotherapeutic and biological therapy, radiotherapy, and surgery
- Rehabilitation and
- Psychosocial and spiritual care

According to the WHO analgesic ladder, the treatment for cancer pain should follow a sequential order. It is initiated by non-opioid drugs, e.g. paracetamol, ibuprofens, which constitute Step I.
If adequate analgesia is not achieved, weak opioids like codeine, tramadol should be added. If the pain is still not properly controlled, strong opioids such as morphine, oxycodone can be given
Adjuvant medications for pain relief are also provided for different types of pain

6.3. Breathlessness (Dyspnea):

- Dyspnea is defined as a subjective sensation of difficulty in breathing. It is a common symptom among patients with advanced breast cancer.
- There are many potential causes of breathlessness including massive pleural effusion, extensive lung metastasis
- Symptomatic management of dyspnea uses non-pharmacological and pharmacological approaches. Sitting the patient upright, increasing air flow over the face using a fan or open window, and use of bedside relaxation techniques are all helpful. Large symptomatic pleural effusions should be drained.
- Treatment of pulmonary thromboembolism should be considered

6.4. Fatigue:

- Fatigue is defined as feeling extremely tired, weak, heavy, run down and having no energy.
- It is the most common adverse effect of chemotherapy, and it is a common complaint among women receiving hormonal and biological therapies for breast cancer.
- Other factors exacerbating fatigue and tiredness may include anemia, infection, fever, dehydration, electrolyte imbalance, cachexia, hypogonadism, depression, sleep disturbance, and centrally acting sedating medications

6.5. Delirium and confusion:

- Delirium can be described as alteration in attention and awareness fluctuating in severity across time.
- It is sometimes accompanied with neurological deficits such as aphasia, disorientation, hallucinations, and psychomotor changes.
- Common precipitating events include sepsis, medication side effects, and metabolic aberrations (particularly hypercalcemia, hyponatremia, uremia, dehydration, brain metastases, or cerebrovascular events), spiritual and psychosocial factors.
- Medications for treating agitation and delirium in the terminal phase include antipsychotics: the newer agents such as olanzapine.
- Benzodiazepines may be required for more rapid control of agitation and anxiety, but they can occasionally cause paradoxical agitation if used alone.

6.6. Existential suffering:

Existential distresses may be related to past, present, or future concerns.

- Present: Current personal integrity and identity can be disrupted by changes in body image; somatic, intellectual, social, and professional function and in perceived attractiveness as a person and as a sexual partner.
- Past: For some patients, retrospection can trigger profound disappointment from unfulfilled aspirations or remorse from unresolved guilt or unsolved matters.
- Future: If life is perceived to offer, at best, comfort in the setting of fading potency or, at worst, ongoing physical and emotional distress, anticipation of the future may be associated with feelings of

hopelessness, futility, or meaninglessness such that the patients see no value in continuing to live.

Even in the setting of advanced cancer, hope remains important. Clinicians can help the patients shift the focus to achievable and meaningful hope such as hope for time, hope for freedom from discomfort, hope to maximize the quality of one's life in the setting of threatened duration of survival, hope that one's loved ones will cope with the time ahead, hope that as one approaches the end of one's days that it will be with the feeling of satisfaction with the quality of what has been achieved, and hope for a peaceful death without suffering or indignity.

6.7. Chapter summary:

- Palliative care is vast concept and major parts of palliative care should be addressed for advanced breast cancer patients
- One should consider the physical, psychosocial and spiritual aspect of patients and families
- Pain is one of the commonest presentations of advanced breast cancer patients and should be managed adequately
- Others like fatigue, dyspnea, delirium, vomiting and nausea, infection and other emergency condition should be addressed

Chapter 7: Health Promotion and Education for Early Detection

Duration: 100 min

Chapter Description:

This chapter describes the importance of health promotion in the context of breast cancer early detection as well as explains culturally sensitive health education thus to empower women timely to seek and receive health care and enable early detection of breast cancer. In addition, the chapter explains risk factors for breast cancer, first causes of delay in breast cancer care, and the need for health promotion.

Chapter Objective:

At the end of this chapter, the participant will be able to:

- Describe the importance of health promotion in the context of breast cancer early detection as well as be able to deliver culturally sensitive health education at multiple settings.

Enabling objective:

By the end of this chapter, participants will be able to:

- Identify the main causes of delay in the patient pathways
- List risk factors for breast cancer
- Describes health promotion in context of early detection
- Describe various setups and methods for health education

Outline:

7.1 Patient pathways - causes of delay in breast cancer early detection
7.2 Risk factors for breast cancer
7.3 Health promotion for breast cancer early detection
7.4 Setups and methods of health education
7.5 Chapter summary

7.1. Patient Pathways – the First Causes of Delay for Breast Cancer Early Detection

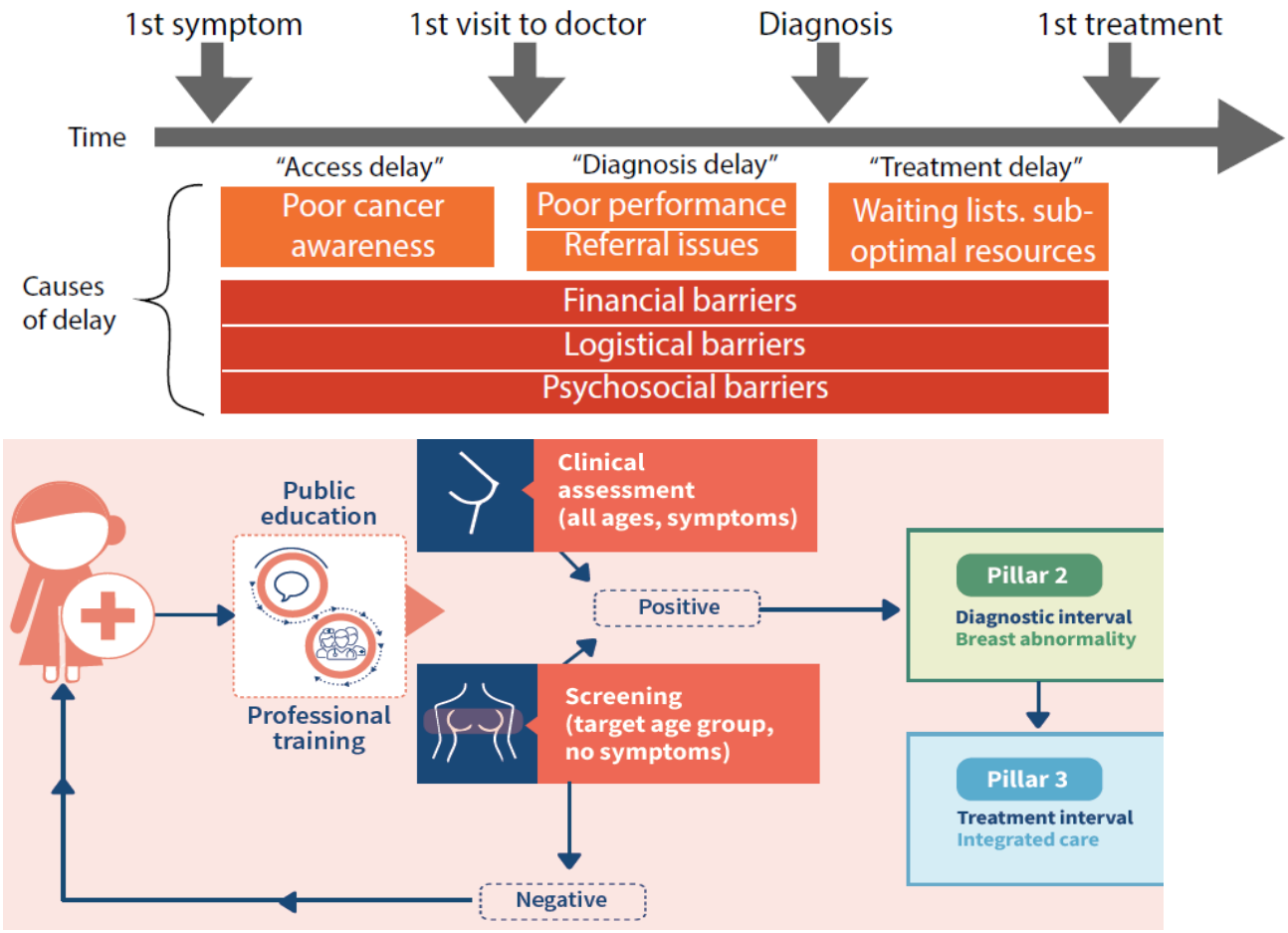


Figure 19: WHO recommended systematic health promotion to diagnose >60% of invasive cancers at stage I or II as a measure of good practice for early detection of breast cancer.

7.2. Risk Factors for Breast Cancer

Risk factor is an aspect of personal behavior, lifestyle, environmental exposure, an infection, or a hereditary characteristic that is associated with an increase in the occurrence of a particular disease, in this case breast cancer. Breast cancer is a complex disease (or group of diseases) with multiple risk factors, some resulting from genetic predisposition and others accumulating throughout the life-course. Female sex and advancing age are the strongest risk factors for breast cancer, with over 99% of cases occurring in females. Beyond sex and age, the primary risk

factors for breast cancer include: (i) inherited factors; (ii) hormone-related factors; (ii) environmental and lifestyle factors; and (iv) breast-related factors.

i) Inherited factors:

A family history of breast cancer (and, to a lesser extent, ovarian cancer) can represent the presence of inherited mutations in moderate to highly penetrant genes which increase the risk of breast cancer significantly.

ii) Hormone- and reproduction related factors

Hormone-related risk factors for breast cancer include:

- Early menarche,
- Late menopause,
- Exposure to higher levels of endogenous estrogens, androgens, prolactin, and insulin-like growth factor 1 (IGF-1)
- Prolonged use (>5 years) of combined oral contraceptives
- Estrogen-based hormone-replacement therapy in the postmenopausal period

iii) Reproductive related factors, such as lower parity or later age at first birth. The pregnancy period also leads to a transient modest increase in breast-cancer risk, which persists up to 20 years after childbirth before conferring a life-long protective effect. However, risk to mothers can be reduced by breastfeeding.

iv) Environmental and lifestyle factors, such as ionizing radiations, physical inactivity, harmful use of alcohol and tobacco use.

7.3. Health promotion for breast cancer early detection

“Health promotion” is the process of enabling people to increase control over, and to improve their health” (WHO). In the context of breast cancer, health promotion for early detection focuses on improving the understanding of the public and health-care professionals of breast cancer risk factors and symptoms. Hence enable health workers to provide high quality and culturally sensitive health education and be able to empower women timely to seek and receive health care for early detection of breast cancer.
In line with the national guideline the purpose health promotion in this training the objective is to achieve:

i) Social Behavior Change Communication (SBCC) – seeks to increase awareness of breast health, influence social norms, and facilitate behavior change amongst individuals, families, and communities to access breast health services.

ii) Social mobilization – a broad-scale movement to engage people's participation in achieving specific development goals of breast cancer early detection by embracing the principle of community involvement.

7.4. Setups and methods of health education

Appropriate and culturally acceptable health education remains an integral component of the national breast cancer initiative and a major deliverable to healthcare workers in the PHCU. Delivery settings include:

Delivery setups include: Where?

- Health facilities
- Community settings – community gathering, religious centers…
- Schools
- Home based – primarily by the family team and health extension workers

Delivery methods: How?

- Interactive discussion
- Recorded audio, videos
- Posters
- Provision of awareness creations materials: Leaflets, flyers
- Demonstrations (breast self-examination

7.5. Chapter summary

- Identifying main causes of delay in patient pathway and knowing risk factors for breast cancer are crucial for early detections
- Health promotion and Education on breast cancer improve health seeking behaviors
- Primary health care facilities should play vital role in creating public awareness on early detection of breast cancer

Chapter 8: Monitoring and Evaluation

Duration: 100 min

Chapter description:

This chapter focuses on the monitoring and evaluation of breast cancer management through an effective Health Information System (HIS). It outlines the processes for routine data collection and reporting at facility, woreda, zone, and regional levels, emphasizing the roles of various coordinators in ensuring the timely delivery of early detection and treatment services. The chapter also establishes performance targets aimed at reducing breast cancer incidence and describes the implementation tools and key indicators used to assess program effectiveness. Overall, it provides a comprehensive framework for improving breast cancer care through systematic oversight and data-driven decision-making

Chapter Objective:

At the end of this chapter participants will be able to describe breast cancer early detection referral monitoring and evaluation tools.

Enabling objective:

- Describe concept of breast cancer monitoring and evaluation within HIS
- Explain the role and responsibilities of various health system levels
- Mention performance targets aimed at reducing breast cancer incidence
- Describes the implementation tools and key indicators used to assess program effectiveness

Outline:

8.1. Introduction
8.2. Health Information System at Facility Level
8.3. Target Setting
8.4. Implementation and Monitoring Tools for the Breast Cancer Early Detection and Treatment Program
8.5. Eligibility assessment, triage and referral linkage
8.6. Breast cancer early detection and treatment register
8.7. Breast cancer early detection and treatment service reporting form
8.8. National program indicators
8.9. Chapter summary

8.1. Introduction:

Monitoring, evaluation is a process that helps assess performance, take steps to learn and respond to gaps and agree adjustments towards incremental achievement of the desired objectives. The goal is to shape current and future management of these national guidelines using appropriate existing and new mechanisms.

The key to health information system (HIS) effectiveness is routine collection of essential data and generation of regular monitoring reports. The National Breast Cancer Early Detection and Treatment Program lies under the responsibility and accountability of the NCD Desk. Standardized national forms have been approved by the FMOH and are linked to the current district health information system (DHIS2). The National Breast Cancer Early Detection and Treatment Program monitoring and evaluation protocol will follow the existing integrated DHIS2 in Ethiopia, which is operational from the facility to the central level.

8.2. Health Information System at Facility Level

An adapted facility-level HIS should be used to monitor and evaluate the specific services provided at that facility, largely relying on registers to collect individual data and generate reports with aggregate data.
Documentation of services should take place daily by a trained health care provider. Information gathered from the registers will be used to calculate monthly statistics based on the program indicators. The health facility cancer focal person will be responsible to compile monthly data, analyze and report breast cancer screening and treatment performance to the health facility HIS officer. Health facility management needs to incorporate monthly analysis and review against facility level targets. In addition, the health facility HIS officer will regularly update data on DHIS2 . If DHIS2 is not functional, health facility HIS officers will be responsible for reporting to the Woreda (District) NCD focal person via their respective HMIS focal person.

8.2.1. Health Information System at Woreda

Performance targets will be agreed with the Federal Ministry of Health (FMOH). The Woreda NCD coordinator will be responsible for sharing these performance targets with selected health facilities in their Woreda responsible for screening all eligible women living there. Other health facilities in the Woreda are expected to refer eligible clients.

The Woreda NCD coordinators are responsible for ensuring timely reporting of early detection and treatment activities by health facilities via the DHIS2. If the DHIS2 system is not functional, the Woreda NCD coordinator will ensure HFs share the manual HMIS report. The Woreda NCD coordinator is also responsible for analyzing

the performance of health facilities in their respective catchment area on a monthly basis, reviewing this performance against agreed targets and supporting health facilities to develop performance improvement plans for gaps identified. In addition, the Woreda NCD coordinator will regularly conduct supportive supervision and quality assurance in HFs. Other responsibilities of the Woreda NCD coordinators include:

- Following the performance and reporting breast cancer early detection and treatment service conducted by non- governmental organizations and private HFs in the Woreda and,
- Ensuring distribution, continued availability and appropriate utilization of breast cancer early detection and treatment M&E tools, in the selected HFs in the respective Woreda.

8.2.2. Health Information System at Zone/ Sub city Level

The Zonal/ Sub city level (SC) NCD coordinator will take on the same responsibilities as above, zone-level. be responsible for ensuring that Woreda have shared the Woreda-level targets to implement health facilities in their zone and tracking performance against targets. As above the Zone/SC NCD coordinators will be responsible for ensuring timely by following the DHIS2 report, analyzing the performance on a monthly basis, supporting development of performance improvement plans and conducting supportive supervision (SS) and quality assurance visits with high impact HFs. Based on the SS findings. The Zonal/SC NCD coordinator will be responsible in identifying best practices and identifying solutions to fill implementation gaps. In addition, Zonal Health Departments are responsible for ensuring breast cancer early detection and treatment service performance assessment is included in the regular Zonal review meetings. Other activities of Zonal/SC NDC coordinator include ensuring:

- Availability of the minimum requirement of staff and resourcing for initiation and maintaining breast cancer early detection and treatment services.
- Smooth initiation of breast cancer early detection and treatment service in new health facilities.
- Competency of newly trained HCPs by linking them with experienced service Providers.
- Post training follow up of newly trained HCPs,
- Distribution and continuous availability of M&E tools and their appropriate utilization in the health facilities.

8.2.3. Health Information System at Regional level

Regional NCD/MH case team focal points are responsible for ensuring Zones/SC are overseeing implementation and monitoring performance of all Woreda in their respective Zone/SC and timely reporting of activities to FMOH. In addition, regional NCD case team/ cancer focal points will regularly conduct SS and quality assurance for health facilities by prioritizing high impact zones, woreda and health facilities and identifying best practices and solutions to fill implementation gaps which will also inform additional responsibilities of this regional role:

- Planning and implementation of expansion of breast cancer early detection and treatment services.
- Planning and implementation of basic and refresher training related to breast cancer early detection and treatment service.
- Identifying and regularly updating a pool of trainers.
- Leading advocacy and community mobilization activities at regional, zonal and Woreda level.
- Resource mobilization and monitoring effective utilization of resources.
- Support zones in strengthening referral pathways at and between each health service level.
- Ensure breast cancer early detection and treatment service activities are included in the regular regional review meetings.
- Ensure continuous availability and appropriate utilization of M&E tools.

8.2.4. Health Information System at FMOH

The breast cancer focal point at the FMOH NCD/MH desk is responsible for ensuring that regional health boards (RHBs) are tracking breast cancer early detection and treatment services of all zones/SCs and monitor performance trends against their respective targets. Regular comparative analysis of the performance of the respective regions on a monthly basis will support regions in optimizing their programs and developing performance improvement plans. The breast cancer focal point at the FMOH NCD/MH desk, in collaboration with RHBs, will also regularly conduct SS and quality assurance of breast Cancer early detection and treatment services.

8.3. Target setting

This guideline sets the ambition to attain the shared goal of reducing breast cancer by 2.5% per year. Annual evaluation reports will adopt the global 60:80:60 targets and implementation plans will need to construct plans which achieve the following levers for impact incrementally in the next four years:

- Health promotion for early detection to diagnose >60% of invasive cancers at stage I or II

- Timely breast diagnostics with within 60 days
- Comprehensive breast-cancer management where >80% undergo multimodality treatment without abandonment

8.4. Implementation and Monitoring Tools

The five main tools to be used are:

i) eligibility assessment,
ii) triage and referral linkage plan,
iii) breast cancer early detection and treatment register,
iv) breast cancer early detection and treatment service reporting form and
v) national program indicators. Each is described below.

8.5. Eligibility assessment, triage and referral linkage

To strengthen the linkage of eligible women from the general population to breast cancer early detection services, a Breast Cancer Early Detection Eligibility Assessment and Linkage Form (please see appendix H) supports health facilities where eligible clients are seen (such as, cervical cancer screening, family planning and maternal child health units, out-patient departments and hospital wards as well as antiretroviral therapy clinics and prevention of mother to child transmission clinics) to integrate this assessment into their schedules. This form supports a rapid eligibility assessment of the client by checking her age, family history, record of attending CBE and previous history of breast cancer.
HCPs must ensure all women of eligible age are navigated to breast cancer early detection services.

8.6. Breast cancer early detection and treatment register

The Breast Cancer Early Detection and Treatment Register is a register maintained at cervical cancer screening units and at out-patient departments. HCPs complete this paper form for each client and maintain these records. Instructions on how to use the register are included on the first page. The register has columns to capture key information, including:

- Client identification,
- Previous screening history
- Risk factors for breast cancer
- Screening modality employed
- Result and stage (if known)
- Referral (self, facility)
- Follow up plan

- Intended treatment modalities (surgery, chemotherapy, radiotherapy, hormonal, biologic therapy)

8.7. Breast cancer early detection and treatment service reporting form

The Breast Cancer Early Detection and Treatment Service Reporting Form summarizes the performance of breast cancer early detection and treatment service among eligible women. The reporting tool helps to generate information on Breast cancer early detection and treatment service provided for the general population. The reporting format helps to generate data on breast cancer early detection and treatment services given for:

I. New clients are defined as women aged >30 years who have been screened for the first time.
II. Repeat clients are defined as women aged >30 years who have been screened two or more times.
III. Clients that have received treatment and for which follow-up data is being provided.

The following key program indicators are included in the report. The number of secondary health care facilities providing diagnostic service including the private facilities should be noted, and per facility the following indicators are required:

- Number of CBEs performed
- Number of women screened by mammography
- Number of timely referred (noting reasons for delays)
- Number of patients diagnosed within 60 days (noting reasons for delays)
- Percentage of patients with cancer with full TNM stage
- Number of breast cancer cases detected (all stages)
- Percentage of breast cancer diagnosed at stage I and II
- Number of women receiving a treatment recommendation via an MDT
- Number of women receiving timely comprehensive treatment (i.e. treatment was initiated within 30 days of treatment decision
- Percentage that completed the intended treatment in full (noting reasons for non-completion)

8.8. National Program Indicators

The National Breast Cancer Early Detection and Treatment Program will track program-level indicators through the above-described reporting system. Appendix provides a summary of the rationale and calculation per indicator. The following key indicators will be incorporated within the DHIS2-reported national health indicators:

Core Indicator 1: More than 60% of invasive cancers diagnosed at stage I or II

The percentage of women aged >30 years who have been screened for the first time with CBE/mammography in the reporting period. This indicator measures the volume of CBE/mammography screenings performed in the reporting period against set targets and will show the trend of shifting from first ever screens to repeat screens over time.

Core Indicator 2: Timely breast diagnosis within 60 days

The percentage of women diagnosed within 60 days of their CBE date against all women diagnosed with breast cancer within the same reporting period. This indicator provides a benchmark per region on how many women were diagnosed within 60 days in the reporting period and will also show the trend of increasing numbers of women receiving a timely diagnosis overtime.

Core Indicator 3: >80% of patients undergo timely multimodality treatment

The percentage of breast cancer patients who started comprehensive management within 30 days of the definitive diagnosis in the reporting period against all women diagnosed and treated for breast cancer within the same reporting period. This indicator measures provides a benchmark per region on numbers of patients receiving multimodal treatment and will also show the trend to timely treatment overtime.

8.9. Chapter Summary

- Monitoring and Evaluation: Highlights the importance of assessing performance and making adjustments to meet objectives in breast cancer management.
- Health Information System (HIS): Emphasizes routine data collection and reporting through the National Breast Cancer Early Detection and Treatment Program linked to DHIS2.
- Facility-Level HIS: Involves daily documentation by trained staff and monthly data compilation by cancer focal persons.
- Woreda and Zone Coordination: Woreda NCD coordinators set performance targets, ensure timely reporting, and conduct supportive supervision. Zone coordinators track performance and assist in quality assurance.
- Regional and FMOH Oversight: Regional NCD focal points oversee

implementation and resource mobilization, while the FMOH monitors overall program performance across regions.

- Target Setting: Aims for a 2.5% annual reduction in breast cancer incidence with specific targets for early detection and timely treatment.

- Implementation Tools: Includes eligibility assessments, treatment registers, and performance indicators to monitor program effectiveness.

- Key Indicators: Tracks the percentage of early-stage diagnoses, timely diagnoses within 60 days, and timely multimodal treatments to evaluate program success.

Appendices: Learning Support Materials

Appendix A: Eligibility criteria

I. Eligibility Criteria

1. Is the age of the client above 30 years?

   Yes ☐ No ☐

2. Does the client have a family history of BCa?

   Yes ☐ No ☐

3. Has the client been screened for BCa in the past year?

   Yes ☐ No ☐

4. Has the client been treated for BCa in the past year?

   Yes ☐ No ☐

II. Is the client eligible for BCa screening?

Yes ☐ No ☐

NB:

- If the answer is, Yes for Q# 1 and No for Q# 2, 3 &4. The client would be eligible for screening on this visit.

- All eligible clients for BCa early detection and management to be linked to cancer screening unit (preferably through escorted linkage).

……

Appendix B.1: Breast cancer early detection intake form

Part I: Sociodemographic profile			
S/N	Question	Response	Skip
101	Date of visit	_____ (GC)	
102	Age of the woman	_____ (years)	
103	Marital Status	1. Married 2.Single 3.Divorced 4.Widowed	
104	Region/city of current residence		
105	Woreda	_____ (sub city & woreda no.)	
106	Phone number	_____	
Part II: Risk factors for breast cancer			
201	Family history of breast cancer	1. Yes 2. No →	203
202	If yes to question #201, which family relative?	1. First degree 2. Second degree 3. Third degree 4. Others _____	
203	History of oral contraceptive use (OCP)	1. Yes 2. No →	204
204	If yes to question #203, for how many years/months?	_____ (years/months)	
205	Age at menarche (first menses/period)	_____ (years)	
206	Age at first delivery (Delivery after 28 weeks gestation regardless of outcome (in years))	_____ (years)	
207	Parity (Number of births after 28 weeks' gestation regardless of outcome)	_____	
208	Number of abortion (Loss of pregnancy before 28 weeks gestation)	_____	
209	Average duration of breastfeeding	_____ (months)	
210	Age of menopause	_____ (years)	
211	Drinking alcohol	1. Yes 2. No	
212	Smoking cigarette	1. Yes 2. No	
213	Regular exercise	1. Yes 2. No	
214	Co-morbidity	1. DM 2. HTN 3. HIV	

		4. Others_____	
215	Previous breast Surgery	1. Yes 2. No	If yes 216 and 217
216	Type of surgery	Specify	
217	Date and result of surgery	__ /__ /__ (dd/mm/yy) result specify_____	

Part III: Presenting symptoms

	Symptoms	Duration
301	Asymptomatic	
302	Which side is affected 1. Right 2. Left 3. Bilateral	
303	Breast lump	
304	Breast pain	
305	Nipple discharge	
306	Ulceration	
307	Axillary swelling	
308	Weight loss (specify in kg)	
309	Who discovered the above symptoms 1. Self 2.Spouse 3.Health care provider	
310	Symptoms Suggestive of metastatic disease 1. Cough 2. Abdominal swelling 3. Jaundice 4. Mental status change 5. Bone pain(mention the site) _____ 6. Others(specify)____	
311	Other Complaints (specify)	

Part IV: Physical examination

401	Height	_____ (meters)	
402	Weight	_____ (kgs)	
403	Blood pressure	_____ (mmHg)	
404	Breast symmetricity	1. Symmetric 2. Asymmetric	

405	Right breast inspection	fullness	1. Yes 2. No		Depict on breast figure
		Abnormal discoloration	1. Yes 2. No		
		Venous distention	1. Yes 2. No		
		Rashes	1. Yes 2. No		
		Visible lump	1. Yes 2. No		
		Retraction	1. Yes 2. No		
		Edema	1. Yes 2. No		
		Axillary mass	1. Yes 2. No		
		Scaly nipple	1. Yes 2. No		
406	Left breast inspection	fullness	3. Yes 4. No		Depict on breast figure
		Abnormal discoloration	3. Yes 4. No		
		Venous distention	3. Yes 4. No		
		Rashes	3. Yes 4. No		
		Visible lump	3. Yes 4. No		
		Retraction	3. Yes 4. No		
		Edema	3. Yes 4. No		
		Axillary mass	3. Yes 4. No		
		Scaly nipple	3. Yes 4. No		
407	Right breast palpation	Asymmetric thickening	1. Yes 2. No		Depict on breast figure
		Axillary LAP	1. Yes 2. No		
		Supra/infraclavicular LAP	1. Yes 2. No		
		Mass	1. Yes 2. No		

		Size (longest dimension)	_____ (cm)	
		Consistency	1. Soft 2. Firm 3. Cystic 4. Hard	
		Tender	1. Yes 2. No	
		Mobility	1. Mobile 2. Restricted 3. Fixed	
408	Left breast palpation	Asymmetric thickening	3. Yes 4. No	Depict on breast figure
		Axillary LAP	3. Yes 4. No	
		Supra/infraclavicular LAP	3. Yes 4. No	
		Mass	3. Yes 4. No	
		Size (longest dimension)	_____ (cm)	
		Consistency	5. Soft 6. Firm 7. Cystic 8. Hard	
		Tender	3. Yes 4. No	
		Mobility	4. Mobile 5. Restricted 6. Fixed	
409	Other systems findings			
Part IV: Diagnosis data				
501	Abnormality detected during PE	1. Yes 2. No →		503
502	Clinical suspicion	1. Fat necrosis 2. Fibroadenoma 3. Mastitis 4. Breast cancer 5. Colloid tumor 6. Breast cyst 7. Others _____		
503	Plan/recommendation (multiple response possible)-could be at referral	1. US 2. Mammography 3. FNA cytology		

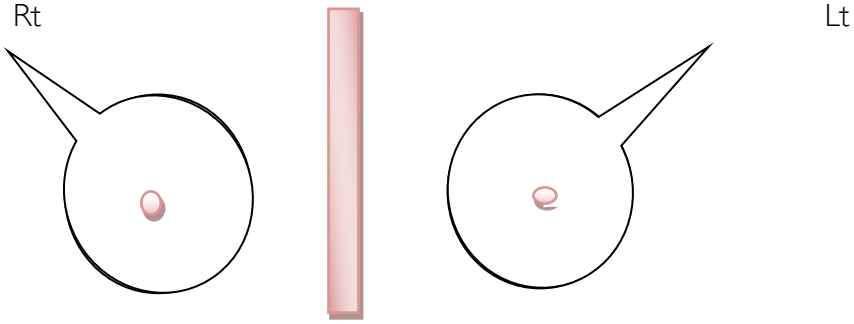
		4. Follow-up at 6 months 5. Follow-up at 1 year 6. Minor surgery 7. Others _____	
504	Reason if 'follow-up at 6 months' in 503.	_____	

Appendix B.2: Breast cancer screening intake form (at secondary and tertiary level)

Part I: Diagnosis data			
101	US diagnosis	1. Suspected Fibroadenoma 2. Cyst 3. Ductal ectasia 4. Others _____	
102	BIARDS category of US	_____	
103	Chest x-ray: Metastasis	1. Yes 2. No	
104	Abdominal US: Metastasis	1. Yes 2. No	
105	FNAC finding	1. Malignant 2. Benign 3. Uncertain	
106	If malignant in #409	1. In situ carcinoma 2. Cancer 3. Phyllodes 4. Other	
107	If benign in #409	_____	
108	Mammography diagnosis	1. Asymmetric breast tissue 2. Microcalcification (needs histology) 3. Asymmetric density 4. Architectural distortion 5. Adenopathy 6. Others _____	
109	Mammography BIRADS category	_____	
Part II: Histopathology/pathology staging			
201	Tumor size	_____	
202	Tumor type	_____	
203	Tumor grade	_____	

204	Total number of lymph nodes	_____	
205	Number of positive lymph nodes	_____	
206	TNM and group stage		
	Part III: Treatment Procedure		
301	Surgery	1. Yes 2. No	
302	Surgical procedure	1. Lumpectomy 2. Lumpectomy with axillary dissection 3. Breast conserving surgery 4. Simple mastectomy 5. Toilet mastectomy 6. Modified radical mastectomy 7. Others _____	
303	Radiotherapy	1. Yes 2. No	
304	If yes to #303	1. All breast with regional node 2. Chest wall with regional node 3. Others _____	
305	If yes #303-dose in Gy and fractionation	Specify	
306	Chemotherapy	1. Yes 2. No	
307	If yes to #306	1. Adjuvant 2. Neoadjuvant 3. Palliative 4. Others _____	
308	If yes to #306	Name Cycle Dose	
309	Hormonal therapy	1. Yes 2. No	
310	If yes to 309	Name Dose Duration	
	Part IV: Follow-up and referral		
401	Referred to other facility	1. Yes 2. No →	403
402	Reason for referral	1. US 2. Further investigation and management 3. Others _____	
403	Any further comment	_____	

Figure: (use the pictorial representation)



Part V: Evaluation of breast Cancer Patients After Completion all the Planned Treatments Vital status: Alive____ Dead (date of death)_____							
Complaints (with grade 1-4 if applicable)		Date					
Vomiting							
Diarrhea							
Dysphagia							
Chest pain							
Shortness of breath							
Skin desquamation	Moist						
	Dry						
Symptoms suggestive of recurrence(locoregional/ distant)	Breast Lump						
	Axillary lump						
	Bone pain						
	Cough						
	Mental status change						
	Supraclavicular LAP						
Nutritional evaluation							
Psychological evaluation							
Other complaints (specify)							
P/E (Pertinent)							
Investigations (if needed)							
Assessment (using RECIST criteria)							
Plan							
Next appointment							
Evaluator's name and Signature							

Appendix C: Consent form

<u>የካንሰር ህክምና ለመውሰድ የመስማሚያ ቅጽ</u>

እኔ_____የተባልኩግለሰብተገኝብኝየ_____

_____ካንሰርምክንያትበሃኪሜየካንሰር

(ኬሞቴራፒ፣ የጨረር ፣የቀዶ ህክምና እና የሆርሞን) መውሰድ እንዳለብኝ ተነግሮኛል፡፡ በዚህም ---------- ጥቅም ፣ የጐንዮሽጉዳት ፣ መደረግ ስለሚገባቸው ጥንቃቄዎችና ስለ አወሳሰዱ በቂ ገለፃ ከተደረገልኝ በኋላ ለመውሰድ መስማማቴን በፊርማዬ አረጋግጣለሁ፡፡

የታካሚስም_____

ቀን _____

ፊርማ _____

<u>ምስክሮች</u>

ቤተሰብ/ አስታማሚስምናፊርማ

1. _____

መድሀኒቱንየሰጠውጤናባለሙያስምናፊርማ

1. _____

Appendix D: Appointment Card: FRONT OF THE CARD

Health facility Name: _____ Region: _____ City/Town: _____ (replace with logo)

Date of first visit _____

Medical Record Number/UAN: _____/_____-Serial

Full name_____

Age: _____

Address: _____

Phone Number: _____

Appendix D: Appointment Card: BACK OF THE CARD

Date of Appointment	Signature of Provider (if seen on the appointment date)

Note: Do not forget to bring the appointment card with you when you visit the facility for follow up. It is important for your health that you come on your appointment date (consider translation to local languages)

Appendix E: Appointment calendar

SN	Date	Day	Name	MRN	*Attendance	Action Taken	**Outcome

Instruction for appointment calendar:

1. Name- write name of the client.
2. MRN: Write Medical Record Number.
3. Attendance: Write "√" if the clients attend as per the appointment or "X" if the client did not attend.
4. Action taken: For those who did not attend write "Telephone call" if the missed appointment client is contacted through phone and/or write "Home Visit" if Peer educator/other team members have contacted the missed appointment client using home visit. If he/she is not contacted at all due to lack of address or wrong address, write "Not contacted".
5. Outcome: Write the outcome of action taken for those clients who did not attend.

- Return to care
- Refused to return to care
- Seen in other HF
- Died
- Unknown

Appendix F: Summary scope of practice for early detection, diagnosis and treatment per health care level

Primary health care unit (PHCU):

Health Center - There will be no MDT at the health center. The responsible health officer will evaluate and refer the patient to the primary hospital. Consultation can be made with a surgeon or oncologist virtually.

Primary hospital - There will be no MDT at the primary hospital. The responsible health officer can evaluate and order appropriate investigations. With virtual and telephone consultations decisions can be made at the primary hospital level. Patients can be referred when the decision is for major surgical intervention, patient should be sent to a higher hospital where there is a general surgeon. CNB or Incisional/excisional biopsy can be done by a general practitioner with appropriate experience or training. Modified radical mastectomy including axillary dissection can be done by a trained surgeon.

- Pathologist
- Breast care nurse
- Oncology nurse
- Optional (needed on-demand basis): Plastic surgeon, Fertility specialist, Genetics specialist, Physiotherapist, Psychologist/Counselor

Appendix G: Health Facilty Breast Cancer Early Detection & Management Performance Data Reporting & Review Template

Indicators/ Measures	Performance	Achievement # (%)	Remark
# Women aged > 30 years			
# Counselled about BCa early detection and management			
# Eligible for BCa screening			
# CBE done (total)			
# Breast abnormality detected			
# Refereed for diagnostic workups			
# women with definitive BC diagnosis			
# of women diagnosed at stage I and II			
# of women referred for BC treatment			

Identified gaps/challenges and action plans developed for Improvement

Focus Area	Identified Gap	Proposed action item	Responsible person	Timeline

Appendix H: Clinical Breast Examination Register

		Client Identification										
SN	Client Full Name (will not be used for reporting)	Address (Woreda, Sub city, Kebele)	MRN	Phone #	Age	Marital Status (enter code)	Education (enter code)	Risk factors (enter code)	Suspected site (enter code)	Screening methods	Screening Date	Referral (enter code)

Codes:

Marital Status:

1= Single
2=Married
3= Divorced
4= Widow

Education:

1= Illiterate
2= Can read and write
3=Elementary/junior
4= High school
5= College/University

Risk factors for breast cancer:

1= History of oral contraceptive use
2=Alcohol
3=Age at menarche (first mensus /period)
4=Smoking cigarette
5=Regular exercise 6.
6=Pervious History of breast Cancer
7=Previous History of Breast cancer
8=Family history of breast cancer
9=Lack of breastfeeding

Suspected site:

1=Left Breast
2=Right Breast
3=Both Breast

Screening methods:

1=Clinical Breast Exam
2=Ultrasound
3=Mamography

Referral Linkage:

1=Diagostic center/Other HF
2=Not linked for DX

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PARTCIPANT MANUAL