TRAINING MANUAL ON CLINICAL BREAST EXAMINATION

A practical guide for early detection of breast pathologies including breast cancer

JUNE, 2024

FOREWORD

Breast cancer is contributing to high burden of morbidity and mortality in Malawi. Current evidence has shown that breast cancer is mostly diagnosed late and only 9.5% of women with breast cancer are alive after 18 months. This should and can be improved. Early detection of breast cancer is crucial in improving survival rates and reducing the impact of this disease on women, their families and communities.

This Clinical Breast Examination (CBE) training manual has been developed to help primary care providers and students in tertiary health-related institutions to carry out clinical breast examinations in a standardized manner for women with a breast complaint and as part of breast health awareness. The main aim is for early identification of breast cancers which can then be treated early in order to reduce the morbidity and mortality of breast cancer and improve the quality of life of Malawians.

Clinical breast examination is part of the interventions that contribute to the delivery of high-quality of cancer care in Malawi (National Cancer Strategic Plan 2019-2029). This Training Manual has been developed by a panel of experts from the Ministry of Health, Kamuzu University of Health Sciences and the Agency for Scientific Research and Training. I commend the efforts of all those involved in the creation of this manual and express my sincere gratitude for their dedication to improving healthcare in our country.

Finally, I encourage all health workers to utilize this manual as a valuable tool in their commitment to promoting breast health and well-being in our communities.

Honourable Khumbize Kandodo Chiponda, MP
MINISTER OF HEALTH

ACKNOWLEDGEMENTS

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- Dr Kondwani Chalulu, who wrote the first draft manual and prepared the training materials.
- Drs Judith Mkwaila, Natasha Ngwira and Enock Ludzu who reviewed and edited the Training Manual.
- Drs Palesa Chisala, Raymond Nyirenda and Naomi Kafumbu who prepared and wrote the power point presentations and were the facilitators for the CBE pilot training.
- Drs Maurice Mlenga, Richard Nyasosela, Palesa Chisala, Natasha Ngwira, Lughano Kalongolera who were part of the team of experts reviewing the course content.
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Dr Samson Mndolo

SECRETARY FOR HEALTH

ABBREVIATIONS AND ACRONYMS

ASRT	Agency for Scientific Research and Training
BRCA	Breast cancer gene
CBE	Clinical breast examination
CT	Computerized Tomography
ER	Estrogen Receptor
FNAB	Fine Needle Aspiration Biopsy
HCW	Health Care Worker
HER-2	Human Epidermal growth factor Receptor 2
HSA	Health Surveillance Assistant
LLIQ	Left lower inner quadrant
LLOQ	Left lower outer quadrant
LUIQ	Left upper inner quadrant
LUOQ	Left upper outer quadrant
MOH	Ministry of Health
MRI	Magnetic Resonance Imaging
MSTG	Malawi Standard Treatment Guidelines
NCCSP	National Cancer Control Strategic Plan
NCD	Non-Communicable Diseases
PR	Progesterone Receptor
RLIQ	Right lower inner quadrant
RLOQ	Right lower outer quadrant
RUIQ	Right upper inner quadrant
RUOQ	Right upper outer quadrant
TNM	Tumour, Node, Metastasis
TWG	Technical Working Group
USS	Ultrasound Scan

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INTRODUCTION

This training manual is designed to standardize Clinical Breast Examination (CBE) in Malawi for Health Care Workers (HCW) and students in various tertiary training institutions to promote early detection of breast cancer so that early treatments and timely referrals will reduce morbidity and mortality.

This training manual was developed for use in a workshop setting and also as a resource and facilitators guide. Its use can also be expanded to clinical areas for primary caregivers to use as a reference guide as well as for use by students in different tertiary institutions of health. This manual gives freedom to the facilitators to choose topics and activities depending on the varying needs of the participants.

The training manual is also intended to improve on knowledge, attitudes and best practices in performing a CBE. The manual emphasizes on good clinical skills required to make a diagnosis of a suspicious lesion for breast cancer and timely referral of these to the breast clinic. This manual is also for program managers to provide employees with tools to be better at their jobs and good for the learning culture. Ultimately this is a quality improvement tool.

This manual has been developed by the MOH, through the Non-Communicable Disease (NCD) department with technical support from the Agency for Scientific Research and Training (ASRT) and the Royal College of Surgeons in Ireland (RCSI). It is a complete package on how to perform a CBE with elements on timely referral procedures and quality assurance in breast cancer care.

Breast Cancer Epidemiology and role of Screening

Breast cancers are common in elderly women. It is predicted that by 2040 breast cancer burden worldwide will increase to more than 3 million new cases per year (an increase of 40%).
While the incidence is rising, it is also the world's most prevalent cancer (Breast Cancer, WHO, 26th March 2021)
More breast cancer screening would reduce deaths and decrease the number of women with late-stage cancer (Health and Economic Benefits of Breast Cancer Interventions) www.cdc.gov >pop >breast

BACKGROUND AND SITUATION ANALYSIS

Malawi identifies early detection of cancers as one of the ways of reducing the burden of disease (National Cancer Control Strategic Plan NCCSP, 2019-2029) The goal of the NCCSP is to move towards universal health coverage in reducing cancer incidence, mortality, improve cancer down-staging and survival rates in Malawi through access to population based primary prevention, early detection, quality diagnostics, treatment and follow up services by 2029. Since prevention is not always possible in breast cancer, early identification of symptomatic individuals is key and this is dependent on awareness of symptoms by patients and detection of signs by clinical staff. Early detection of breast cancer is also dependent on access to diagnostic evaluation and a clinical breast examination (CBE).

The Malawi Standard Treatment guidelines (MSTG, 2015) advise that women of reproductive age group should have a CBE by a nurse or clinician every 6 months.

Although mammography of all women over 50 years is recommended in other countries, it is neither cost effective nor feasible for a population-based programme in Malawi. CBE is very important in developing countries because of limited access to technology such as mammography and is often the only tool for early detection of breast cancer available.

The goal of this manual is to support the training in CBE for Primary Care Providers and students. It will help to get a better understanding of the ins and outs of CBE and will help to develop good clinical skills, including tactile skills in CBE to help the accurate identification and discrimination between different breast lumps in actual patients in a clinical setting.

Aims of Clinical Breast Examination

The aims of CBE are to:

- Detect both benign and malignant breast abnormalities
- Evaluate the reported symptoms which may range from palpable breast lump to nipple / areola skin changes and even axillary and supraclavicular lymphadenopathy.

Early recognition of symptoms and accurate diagnosis of breast cancer leads to early diagnosis which is the time where treatment is more feasible, affordable and effective. Delays in diagnosis are due to two main reasons, women not presenting early for evaluation and primary care providers failing to recognise or refer women with symptoms of cancer. Both these scenarios are prevalent in Malawi. Hence primary care providers need to be trained to

recognize symptoms and signs of benign swellings and cancers and be able to perform a CBE. They also need to have knowledge of who to refer for a diagnostic work up. Women also have a role in increasing early detection of breast cancer. They also need to be trained about signs and symptoms of breast cancer and the importance of early detection. Those who can identify abnormalities and have timely access to clinical evaluation, diagnosis and treatment are more likely to be diagnosed early.

The following abnormalities should be referred on to a breast clinic for further evaluation:

- Breast lumps
- Breast thickening
- Breast swelling/redness
- Progressive nipple changes (inversion, retraction, destruction)
- Bloody nipple discharge
- Persistent focal pain
- Skin changes (tethering, puckering, indrawing, ulceration)
- Lymph node enlargement

CBE for Malawi should be performed by a trained care provider. This should involve examination of the breast and axilla should be offered to any woman with an abnormal breast finding. CBE should be incorporated into standard medical school curricula and training programs. There is also need to employ quality assurance measures to make sure that health professionals are proficient in CBE. CBE can be performed by non-physician providers such as Clinical Officers, Medical Assistants, Nurses and Midwives and may be used as part of breast health awareness programs

Goal of the training

To improve the quality of clinical breast examination in primary care providers thereby enhancing early detection of breast cancer and other breast conditions with appropriate and timely referral to specialised clinics for diagnosis and treatment.

Overall Objective and expected outcomes

The overall objectives of the CBE training are:

- To improve knowledge, skills, attitudes
- Strengthen capacity of service providers
- Evaluate patient reported symptoms

The expected outcomes of the CBE trainings are;

By end of the training workshop participants will be able to:

- Distinguish benign/malignant lesions
- Develop referral plan
- Provide information on risk factors and breast care

On **Knowledg**e, at the end of the course, participants should be able to:

1) Diagnose common breast disorders with special reference to malignant and benign conditions
2) Propose diagnostic and investigative procedures
3) Outline different modalities of treatment including surgery, chemotherapy, radiotherapy
4) Provide management solutions at primary care level like pain management

On **Skills**, at the end of the course, participants should be able to:

1) Have the clinical skills (history taking and clinical examination) to diagnose common disorders including cancer
2) Refer a patient to a secondary or tertiary level of care

Objectives of the CBE Course

The following are the objectives:

1) To supervise the clinical activities and empower the student/participant to gain clinical competency and skills in CBE
2) To improve listening and communication skills.
3) To improve/enhance the knowledge attitudes and practices of participants/students i.e.
    - Students/participants can demonstrate how to do a CBE correctly. During the training participants will perform a CBE under direct supervision.

- In the training participants are expected to develop appropriate professional behaviour including:
    a) Having ethical standards
    b) Placing patients' needs above their own
    c) Respecting patients' values and needs
    d) Acting with compassion and empathy
    e) Reliability and integrity
    f) Works to promote rapport with other health care workers, guardians
    g) Assuring patient safety and privacy

TRAINING/WORKSHOP PROGRAMME

This is a 3-days training programme which is delivered through didactic lectures, skills demonstrations/ practical sessions and group discussions. It has a holistic approach in course content with topics ranging from the anatomy of normal breast, CBE, benign breast conditions, breast cancer and its multidisciplinary team care approach, referral pathway, communication to patients and guardians, health education and advocacy and survivorship. The change in knowledge will be assessed by a pre course questionnaire followed by a post course test. At the end of the training, participants are issued with a certificate. The 3-day programme for the training/workshop on Clinical Breast Examination is as follows:

Day 1

Time	**Topic**	**Activity**
8:00-8:30	Welcome Introductions Course outline	
8:30-9:00	Pre-course questionnaire Pre-course CBE	Practical
9:00-9:30	The Normal Breast	Lecture
9:30-10:30	Clinical Breast Examination	Demonstration Practical
10:30-11:00	Tea Break	
11:00-11:30	Benign Changes of the Breast	Lecture
11:30-12:30	Breast Cancer - Diagnosis	Lecture
12:30-13:30	Lunch	Lecture
13:30-14:30	Breast Cancer - Staging and Investigations Breast Cancer - Management	Lecture
14:30-15:00	Breast Cancer - The Multidisciplinary Condition	Lecture
15:00-16:00	Communication with Patients and Guardians	Lecture/Discussion

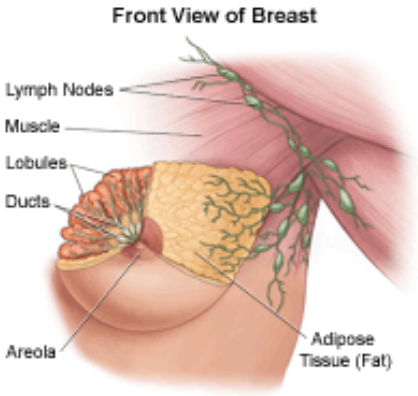
Day 2

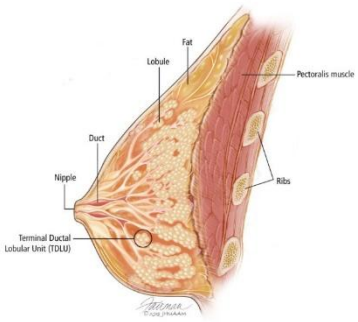
Time	Topic	Session type
8:30-9:00	Recap Day 1	
9:00-11:30	Breast Clinic: History taking Patient Examination Feedback to Participants	Practical session
11:30-12:00	Tea Break	
12:00-13:00	Health Education and Advocacy	Discussion
13:30-14:30	Lunch	
14:30-16:30	Complications of Breast Cancer Surgery Clinical Breast Exam	Lecture Practical

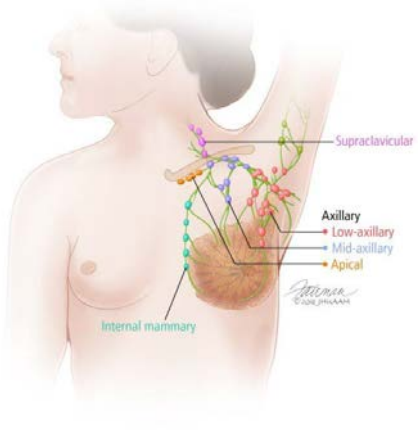
Day 3

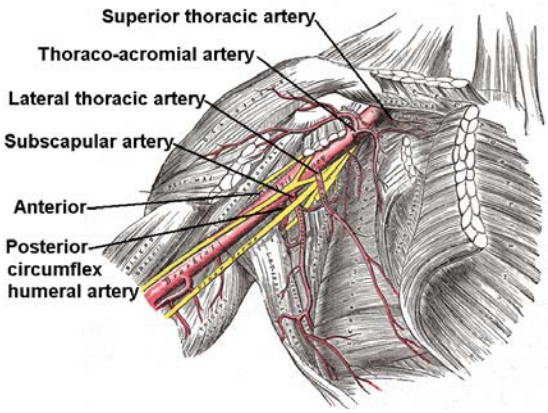
Time	Topic	Session type
8:30-9:00	Recap Day 2	
9:00-10:00	Referrals; what clinical signs will require referral? Standard Operating Procedures	Lecture Discussion
10:00-10:30	CBE - Final Exercises	Practical
10:30-11:00	Tea Break	
11:00-12:00	Follow up Lymphoedema Wound Complications Palliative Care	Lecture/Discussion
12:00-12:30	Post-test Exam	
12:30-13:30	Lunch	
13:30-14:30	Presentation of Certificates Group photo	

THE NORMAL BREAST









Anatomy of the breast

The breast lies on the anterior chest wall on the fascia of pectoralis major muscle.

Medially sternal edge, laterally mid axillary line

Superiorly into the axilla in a structure called axillary tail

Vertical axis 2nd rib to 6th rib

Blood Supply/Lymphatics

Branches of internal thoracic artery

Branches of axillary artery (lateral thoracic, superior thoracic)

Venous drainage runs parallel and in opposite direction

75% of lymph into axillary area

25% through internal mammary chain

Components of the Breast

Glandular tissue: 15-20 lobes. Lobules secrete milk draining into ducts then into the nipple . Largest amount of these in upper outer quadrants

Connective tissue: dense and fibrous. surround lobules. Additionally, suspensory ligaments between superficial and deep fascia

Adipose tissue: remainder of the breast is fat. Glandular tissue predominates in lactation and fat in non-lactating women

CLINICAL BREAST EXAMINATION

Indications for CBE

A woman who is coming to a health service or Primary Care Provider with any of the following complaints:

- Pain in the breast(s),
- skin changes (dimples and wrinkles),
- nipple discharge (any secretion that is not milk),
- breast lumps,
- ulcers or sores,
- changes in size and shape',
- sinking of the nipples,
- swelling, heat or redness of the breast, or
- any other feature that causes concern to the patient.

Utility of CBE

CBE is a low-cost test to improve detection of breast cancers, and as it is based on clinical skills can be provided in all settings. CBE will assist primary caregivers /students in detecting a lump or change in the appearance of the breast that may indicate breast disease

CBE helps evaluating other breast conditions that may require medical treatment such as mastitis

CBE enhances the practice of appropriate communication skills when performing a sensitive examination such as breast examination on patients

CBE may be used in clinical scenarios to complement mammography

CBE can serve as an opportunity for women and their health care provider to discuss changes in their breasts, early detection testing and factors in the woman's history that make her more likely to develop breast cancer

INSTRUCTIONS FOR PRACTICAL SESSIONS IN CLINICAL BREAST EXAMINATION

Learning Objectives:

- Demonstrate a CBE examination which is performed on a model so that participants can practice and, in the process, achieve skill proficiency
- Help in understanding that the mannequin is an educational tool which the learner interacts with to mimic an aspect of clinical care
- Describe abnormal nipple/areolar changes
- Describe on inspection whether there are any swellings, colour changes, indurations, changes in skin texture like peau d' orange
- Explain the limitations of examination on a model:
    - **a.** cannot raise arms overhead
    - **b.** cannot put hands on hips
    - **c.** some aspects of examination like temperature and tenderness cannot be elicited
- Describe the abnormal changes on palpation of the breast and be able to distinguish benign and malignant lumps
- Describe a lump by size, site, shape, surface, surrounding area, consistency, fixity and mobility
- Demonstrate an understanding of axillary examination and description of the lymph nodes found
- Demonstrate in the examination ways to increase accuracy while performing a CBE
    - **a.** Use of the "vertical strip"
    - **b.** Use of pads of the three middle fingers in a circular motion
    - **c.** Use of increasing levels of pressure
    - **d.** Use of examination time of 3 minutes per breast

Conduct of a Clinical Breast Examination

The student/participant should follow the following steps before starting to examine the breasts/axilla:

1. Introduce yourself to the patient
2. Ask for permission to conduct a breast examination
3. Assure privacy

4. Ask for a chaperone to be present, preferably the same gender as the patient.
5. Explain what you want to do
6. Expose the patient adequately. This means that the whole torso needs to be undressed.
7. Use appropriate draping technique. This means that the lower half of the patient should be covered with a sheet/linen
8. Position patient correctly. This is described in the pattern of examination techniques i.e. sitting up. Lying at 45 degrees, lying flat
9. Wash hands or use hand rub before examination
10. Make sure hands are warm
11. Wear gloves

The pattern of the examination

The student/participant shall follow the following pattern to conduct a CBE:

- Introduces themselves to the patient. Mention your name, function and tell patient that you are going to do a clinical breast examination whereby you will look and palpate the breasts
- Establishes and maintains rapport with the patient. Makes the patient feel comfortable and uses appropriate non-verbal skills such as posture, eye contact and smile.
- Washes hands with soap or uses an antiseptic wash
- Uses appropriate draping technique as described above
- Performs the examination in an organized fashion as follows:
    - With the patient in sitting position: inspects both breasts from the front and from the side. Inspection while the patient is asked to put the hands on their thighs with arms relaxed, then ask the patient to put arms overhead and finally ask the patient to put hands on the hips and press hard while leaning forward.
    - With the patient still sitting or 45 degrees: performs bimanual palpation of the breast.
    - With the patient in supine position, ipsilateral hand under their head and pillow under contralateral shoulder: performs complete palpation of the breast with the flat part of the fingers and the hand slightly cupped. Performs palpation of the axillary tail of spence. Gently palpates and expresses nipples (only if patient is complaining of nipple discharge)
    - With the patient back in sitting position: palpates the cervical, supraclavicular and axillary lymph nodes

THE EXAMINATION IN DETAIL

INSPECTION

- Do the inspection with the patient in a sitting position and performing these manoeuvres; hands on thighs with relaxed arms, arms overhead, and hands on waist, leaning forward.
- Visually inspect the breasts from the front and sides.
- Look for size, symmetry (sometimes enhanced by asking the patient to put hands overhead or hands on hips), look for shape and contour (flattening, masses, dimpling).
- Look at the skin (colour, ulceration, oedema, rashes, thickening, peau d'orange) and scars (previous surgery and injuries). Peau d' orange is the orange peel appearance of the breast skin caused by cancer**.**
- Look for any retraction, tethering, puckering when the patient is leaning forward or contracting pectoralis major muscle.
- With arms overhead also check for lymphedema of the arms or any obvious axillary swelling,

Instruction: "Can you put your hands on top of your head, raise your arms in the air and hold them up and slowly bring them down. Now can you press your hands as hard as you can on your hips"

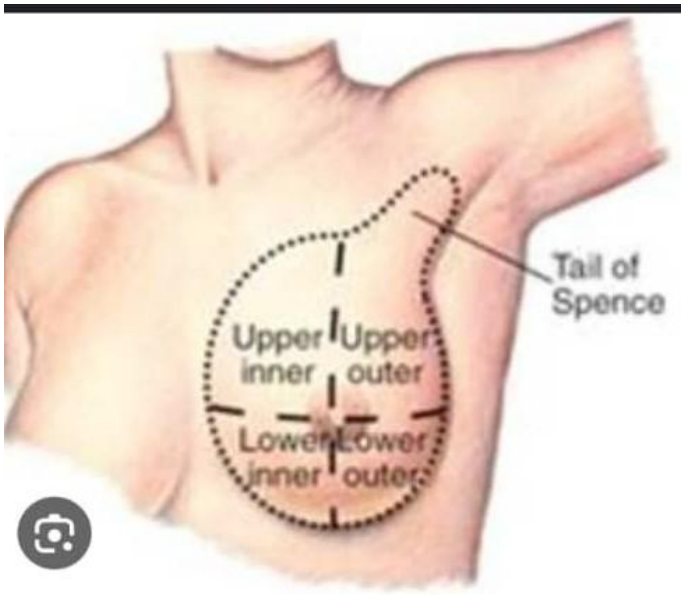


Illustration of the four breast quadrants and the Axillary tail of Spence. These are important when reporting on the site of the lump/swelling within the breast.

BIMANUAL PALPATION WITH PATIENT AT 45 DEGREES

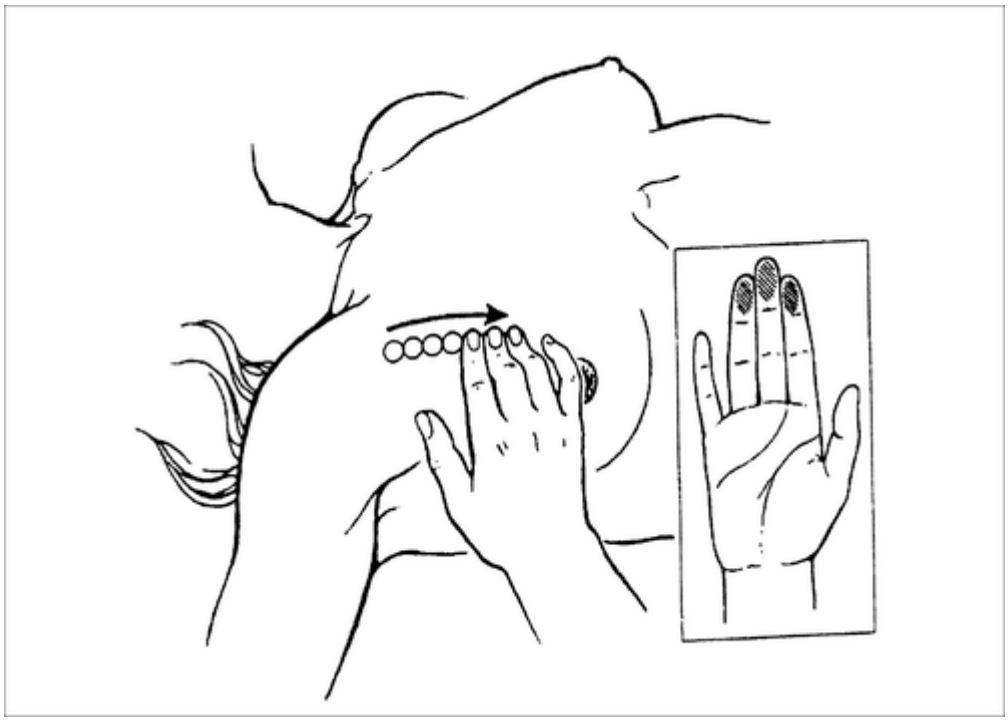
- Participants should perform bimanual palpation with patient at 45 degrees or sitting
- Participants should use the right hand above/left hand below to palpate the right breast
- Participants should use the pads of the finger pads to compress the breast tissue between the finger pads. One hand palpates the breast for any abnormalities while the other sustains and stabilizes the breast
- Participants should then look for and document if a lump is found: size, site, shape, surface, surrounding area, mobility, attachment to overlying skin or underlying muscle, temperature, tenderness, and consistency
- Participants should repeat the process on the left side by standing on the patients left side and reversing hands (left on top and right on the bottom)

COMPLETE PALPATION WITH PATIENT SUPINE

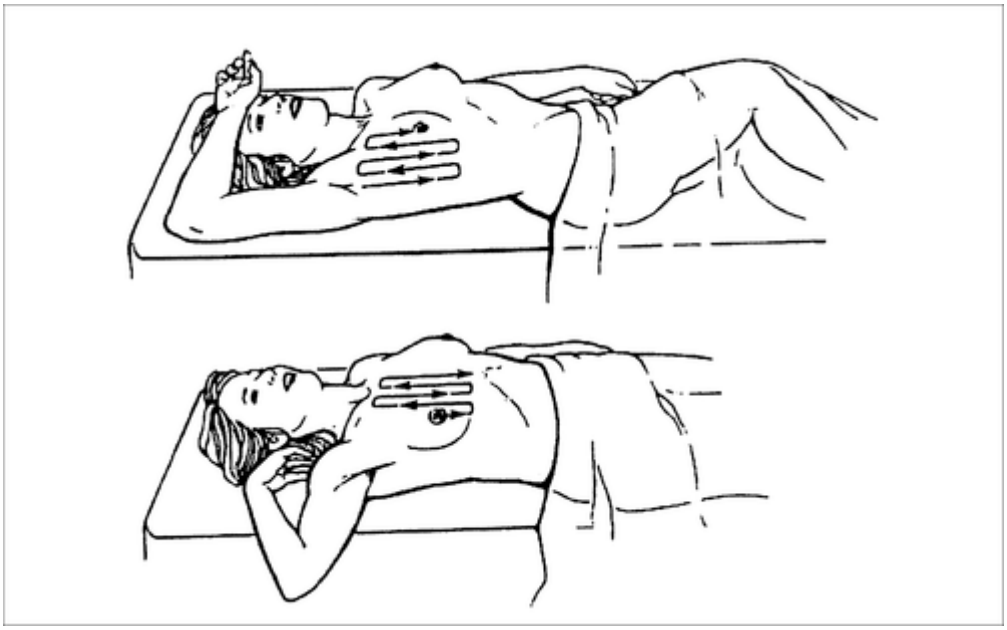
- Participants should ask the patient to put their arm behind the head during a supine palpation. This will help stretch the breast tissue against the chest wall
- INSTRUCTION: Lie flat on your back, with one arm over your head and a pillow or folded towel under the shoulder
- Learners should then perform complete palpation of the breast. Should use the flat part of the three middle fingers against the chest wall using the radial or spiral pattern without missing any areas, compressing the breast tissue against the chest wall in all quadrants of the breast
- There are different ways to move across the breast:
    a) Some clinicians prefer to move in circles starting at the nipple and going towards the periphery
    b) Others prefer moving following imaginary lines that divide the breast in wedges, always from the nipple outwards

c) However, the most effective strategy is the “lawnmower method” where the hand moves up and down, from one side to the other, describing vertical lines all across the breast. This is sometimes called the vertical strip method

- Participants should learn to palpate all of the breast which starts at the clavicle superiorly and ends and the lower end of the mammary crease inferiorly and just lateral to the sternum medially and the mid axillary line laterally
- Participants should learn to inspect the nipple/areolar complex looking for size, shape, inversion, rashes, ulceration, discharge, scaling, crusting, elasticity, retraction, areolar oedema and masses
- Participants should gently grasp and compress the nipple and areolar tissue in between thumb and index finger, noting the colour and consistency and quantity of any discharge



Using the three finger pads during breast examination. The pads of the index, middle and ring fingers are used



The vertical pattern of examination as indicated by the arrows. Top shows examination of the outer quadrants of the breast and the picture below shows examination of the inner quadrants. This is also referred to as “The Lawnmower Technique”

LYMPH NODES PALPATION

Axillary nodes

- The patient is in a seated position
- With the patient’s arm at their side, flexed at the elbow and the examiner lifting the arm away to examine the nodes
- Examine the left axilla with the right hand and the right axilla with the left hand
- Examine behind the anterior axillary fold (made of pectoralis major and minor), in front of the posterior axillary fold (made of latissimus dorsi and teres major muscles) and the floor of the axilla by rolling the flat of the hand against the rib cage before finally examining the roof of the axilla by turning the examining fingers upwards

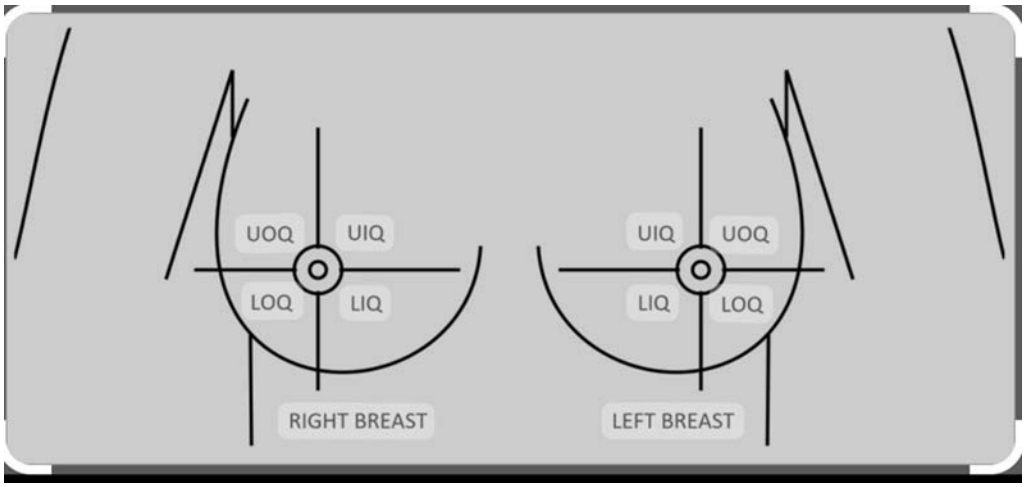
- The participant should then note the number of lymph nodes, the size of the nodes and whether matted or not

Examination of the right axilla using the left hand with elbow flexed and shoulder relaxed (remember to wear gloves when conducting this manoeuvre)

Supraclavicular nodes

These are found along the line immediately above the clavicle. The participant can also perform this manoeuvre by standing behind the patient. Infraclavicular nodes as well as cervical ones can also be examined during this time.

REPORTING ON FINDINGS OF A LUMP/SWELLING FOUND DURING CLINICAL BREAST EXAMINATION



After Clinical Breast Examination the following should be the sequence of reporting:

- **Site**: the breast lump, swelling should be located in an area of the breast according to the four quadrants in each breast as shown in the diagram above. The only exceptions to this rule are when the swelling is in the Axillary Tail of Spence or behind the nipple areola complex (retro areolar area) or if the swelling is occupying more than one quadrant this should be indicated as such
- **Size**: indicate the size of the lump using the widest diameter in centimetres. A tape measure is the equipment of choice for this measurement
- **Shape**: indicate the shape of the lump/swelling. The commonest shapes in CBE are round and oval but any other shapes are also possible
- **Surface:** after palpation of the surface of the lump, indicate whether it is smooth, nodular, irregular or any other
- **Surrounding area**: look and comment on the surrounding area; there can be abnormalities like satellite nodules, ulcerations and these should be commented on
- **Edge**: comment on the edge of the swelling; well circumscribed, well defined, ill defined, irregular etc.
- **Temperature**: is the temperature over the swelling the same as the surrounding skin?
- **Tenderness:** is the lump/swelling tender to palpation?
- **Consistency**: is the swelling soft, fluctuant, firm or hard?
- **Mobility**: is the swelling/lump mobile?

- **Attachment**: is the swelling/lump attached to the overlying skin or attached to the underlying pectoralis major muscle?

INSTRUCTION FOR FOLLOW UP

Most lumps or swellings that are picked up at CBE will be benign (fibroadenomas or fibrocystic changes). These are aberrations of normal development and involution. All lumps should be referred for a triple assessment (history taking and clinical examination, radiological evaluation, tissue biopsy) by following the symptomatic care algorithm

CBE should therefore be followed by an ultrasound scan (which most District Hospitals can do). If diagnosis is indeed that of benign disease, then reassurance that it's not a cancer should be done. Watchful waiting should be applied. Patients should be reviewed after 6 months to see if there are any changes at CBE and ultrasound. Patients should be told that if there are any changes seen before the 6 months then they can present earlier.

However, if after Clinical Breast Examination the findings are those of suspected (?) breast cancer and these are:

- Hard and irregular lump
- Attachment to the skin (puckering, tethering, indrawing, peau d'orange)
- Attachment to underlying muscle evidenced by lump not moving in either direction upon tensing the pectoralis major muscle. Test this by asking the patient to put hands-on hips.
- Axillary, supraclavicular or infraclavicular lymphadenopathy
- Inflammatory breast cancer: red, firm and painful breast
- Nipple/areolar changes: ulceration, nipple retraction and inversion, indrawing, bloody nipple discharge, nipple destruction
- Change in size or shape of breast
- Presence of satellite nodules
- Presence of metastatic disease (lung, liver, brain, skeleton and visceral structures)

The next step in the management will be for the patient to have a biopsy in a specialty centre (in our case QECH, KCH, Mzuzu and Zomba Central hospitals) where care will be given in a team using a Multidisciplinary approach. A Multidisciplinary team would have histopathologists, radiologists, surgeons, oncologists, physiotherapists and nurses

To be added to this group with signs and symptoms are:

- Those over 30 with a new breast lump
- Those with axillary lymph node that hasn't gone away after 2-3 weeks
- Those over 35 with increased lumpiness of the breast not going away after 2-3 weeks
- Those with risk factors for breast cancer (family history of breast cancer in first degree relatives, breast density, getting older (> 50 years), reproductive history, personal history of breast cancer or certain non-cancerous breast disease, inherited genes, radiation exposure)

TECHNIQUE FOR EXAMINING THE LEFT BREAST:

- The left hand palpates the breast with the right hand stabilizing the breast.
- The examination includes all the four quadrants of the breast and the axillary tail of Spence.
- Examination of the right breast is the opposite to this: right hand palpating the breast and left hand stabilizing the breast

BENIGN CHANGES OF THE BREASTS

Learning Objectives

- Demonstrate an understanding of different benign conditions based on history and examination.
- Demonstrate an appropriate understanding of appropriate investigations for benign conditions.
- Demonstrate a basic understanding of the treatment of common benign conditions.
- Identify benign conditions that require medical therapy.

Definition/Facts

A benign or non-cancerous condition of the breast refers to a lump, or nipple discharge (fluid) of the breast that is not cancerous and surgery may not always be indicated.

Fibroadenoma

This is the most common benign condition of the breast usually in women aged between 15 and 35. It usually presents as a painless, firm, solitary, mobile, well defined, slowly growing lump in the breast of a woman of childbearing years. They are solitary in 80 % of women and are premalignant. It is sometimes called breast mouse due to high mobility within the breast. These can be multiple or bilateral.

Giant fibroadenomas are big lumps (>5cm). They can be painful and cause breast symmetry and usually require surgery.

Management is by triple assessment which involves a history taking and a CBE, ultrasound scan and a histological diagnosis by doing either a fine needle aspiration or a core biopsy. Referral is warranted so that triple assessment can be carried out. These are also called Aberrations of Normal Development and Involution (ANDI). USS will measure the size of the fibroadenoma and the consistency as well as confirming the regular borders which these are known for. Management is by reassurance and watchful waiting where the women are invited for review after 6 months unless there are any changes occurring before the 6 months.

Breast pain (Mastalgia)

This is the most common breast symptom. It can be cyclical (occurs during menses) or non-cyclical (happening when the woman is not having menses). Cyclical pain has no pathological significance.

Non-cyclical pain usually associated with focal site in the breast. Causes include ruptured cysts, areas of prior injury or infection. Majority of painful masses are benign but 10% of breast cancers present with pain. All masses/lumps need to be investigated by a triple assessment.

The management includes non-steroidal anti-inflammatory drugs (Ibuprofen 400gm three times a day for 7 days or Paracetamol 500mg three times a day for 7 days and these can be given for up to two weeks). If there is no improvement on these drugs at a health centre then referral is warranted. Some of these drugs that can be given at the Breast Clinic include: Oil of evening Primrose, Vitamin E, Danazol, Bromocriptine and rarely sometimes Tamoxifen can be used. Advice on breast support, avoidance of coffee can also be given. Breast pain is usully self-limiting.

Breast cyst (fibrocystic disease)

Cysts are fluid filled, round oval sacs within the breast that are sometimes tender. They are often in women over 40 though can occur at any age. They are more noticeable in the premenstrual period, usually starting mid-cycle. Nipple discharge is usually brown or green although most of them will present with no discharge. They sometimes present with itchiness.

Investigation is through a triple assessment and management is by aspiration to dryness and if there is a remaining lump this should be biopsied. Usually, the aspirate is straw coloured and if the aspirate is bloody, this should be sent for cytology. After aspiration and reassurance that this is benign then they can be reviewed after 6 months unless there are other worrying symptoms

Ultrasound scan

This is a safe, non-invasive procedure with no radiation exposure. It reveals whether swelling is cystic or solid. USS can measure the size (in 3D) and shape of the lump.

Core needle biopsy and fine needle aspirations can be done during USS. At the moment this can only be done at a Central Hospital where there is a radiologist and histopathologist One of the disadvantages is that USS is user dependent

Surgery considerations

Fibroadenomas <4cm do not require surgery but watchful waiting. Surgery can change breast appearance. Surgery can be considered when fibroadenoma is large, grows quickly leading to breast asymmetry or causes symptoms. quickly leading to breast asymmetry or causes symptoms. Patient's wishes on whether they want the lump removed are also considered. Phyllodes tumours are rare and start in the connective tissues and not the ducts, mostly they are benign though a small percentage can be malignant.

Conditions causing bloody nipple discharge and other nipple discharges intraductal papilloma is a smack non- cancerous tumour that grows in the milk duct of the breast, usually from a unilateral duct. These are more common in women between the ages of 35 and 55.

90% of bloody nipple discharges are caused by ductal papilloma while 10% caused by invasive ductal cancers. Bloody nipple discharges should be referred to a breast clinic for further investigations and management.

The radiological investigations of choice include USS or Mammogram depending on age. Ductography can also be done-injection of a dye through the duct producing blood and taking an x-ray which may show a filling defect in the affected duct.

Microductectomy is the surgical treatment of choice for ductal papillomas. This involves isolating the affected duct and surgically removing it.

Duct Ectasia produces discharge that is yellowish or green in colour. This doesn't always require treatment but if this is causing discomfort then a 7-day course of antibiotics will be indicated. Pain relieving medication should also be indicated. Galactocele produces a milky nipple discharge that is not associated with malignancy. Further work up in a breast clinic maybe warranted duct ectasia can be treated at a Health Centre and treatment is similar to that of mastitis. Ibuprofen 400mg three times a day for 7 days or Paracetamol and Erythromycin 500mg twice a day or Cloxacillin 500mg/Flucloxacillin 500mg twice a day for 7 days.

Breast abscess

An infection in the breast can lead to breast abscess. This is common in lactating women.

Staphylococcal aureus is the common causative organism. The symptoms are pain, redness, swelling, warm skin, nipple discharge. Fluctuance is another sign. Mostly breast abscess is a clinical diagnosis and can be treated in most Health Centres in Malawi.

Investigations should include an Ultrasound scan for the size and site of the abscess. USS can also be useful in needle guidance during aspiration

Management by aspiration using a wide bore needle and antibiotics. If aspiration fail then incision and drainage is recommended. If available, cultures should be obtained to guide antibiotic therapy. Beta-lactamase resistant penicillin can be used e.g. Cloxacillin 500mg/Flucloxacillin 500mg twice a day for 7 days. Additionally, an antipyretic and pain-relieving medication should be given. Ibuprofen 400mg three times a day for 7 days or Paracetamol1g three times a day for 7 days.

When a non-lactating woman presents with a breast abscess, inflammatory breast cancer should be considered because the presentation will be the same,

Can also be a complication of diabetes. If there is a suspicion of diabetes (polyuria which is frequent urination and polydipsia which is excessive thirst) patient should be referred to a breast clinic.

Inflammatory lesions

Acute mastitis: Almost always occurring in 1st month of breast feeding. Breast is erythematous, painful and there is a fever. Staph aureus is the cause usually. Treatment is by using Antibiotics. Erythromycin 500mg twice a day for 7 days or Cloxacillin/Flucloxacillin 500mg twice a day for 7 days.

Periductal mastitis: not associated with lactation but with cigarette smoking. Presents the same as acute mastitis and treatment is the same.

Mammary duct ectasia: means dilated ducts disease, usually in older females. Can present with greenish to yellow nipple discharge. This is usually self-limiting. Antibiotics are indicated in some instances like painful breasts/mastitis

Fat necrosis usually due to trauma (seat belt) and surgery. Symptoms include erythema(redness), pain, swelling. Treatment is usually conservative. Pain relief when there is pain and watchful waiting.

Granulomatous mastitis due to sarcoid or TB. Symptoms may be similar to mastitis but with constitutional symptoms sometimes (unintentional weight loss, nausea, anorexia). Treatment is as in mastitis but if there is no improvement after 14 days patient should be referred for next level care.

BREAST CANCER

Learning Objectives

- Understanding of the relevant anatomy of the breast including blood supply and lymphatics
- Understanding of the signs and symptoms of breast cancer
- Identify risk factors for breast cancer development
- Describe the screening methods available for Malawian women
- Describe Triple assessment in breast disease
- Demonstrate an understanding of appropriate investigations in the work up for breast cancer including imaging and biopsy
- Describe in general terms the TNM staging
- Identify common sites of metastasis in breast cancer
- Demonstrate a basic understanding of breast cancer treatment modalities including surgery, radiation, hormonal and chemotherapy
- Demonstrate an understanding of the multidisciplinary nature in management
- Demonstrate some basic understanding of treatments at different stages of cancer
- Demonstrate an understanding of the key prognostic factors on breast cancer survival
- Describe key components of follow up care

Breast Cancer - Staging and Investigations

Breast conditions can be:

Benign

Early breast cancer

Locally advanced breast cancers

Malignant breast cancer

Secondary breast cancer

Triple assessment

History taking and physical examination

Radiological assessment:

→ultrasound scan ≤40

→mammography ≥40

Tissue diagnosis: FNABx, Trucut biopsy, Incisional biopsies. No room for excisional biopsy

Risk Factors

Female sex (1% of breast cancers in males)

Family history of breast cancer (1st degree relatives)

Mutations particularly BRCA1, BRCA2 and p53

Increased breast density

Obstetric history (nulliparity)

Prolonged oestrogen exposure in early menarche, late menopause, late age at first childbirth

Alcohol use

Smoking

Obesity

Physical inactivity

Previous radiation

Previous non-cancerous breast diagnosis(duct papilloma and duct ectasia)

History

Age at menarche/menopause

Parity

Age at first child

History of lactation and breast feeding

Contraceptive history

Family history of breast and ovarian cancer in 1st degree relatives

Tobacco/alcohol use

Staging of Breast Cancer (TNM Staging)

T stands for Tumour Size; N stands for lymph Nodules affected, and M stands for Metastasis

T0- ductal carcinoma in situ T1- tumour size <2cm T2- tumour size 2-5cm T3- tumour size >5cm	N1- mobile ipsilateral axillary LNs N2- fixed ipsilateral axillary LNs N3- involvement ipsilateral internal mammary/supraclavicular/infraclavicular nodes	**M0- No metastasis** **MX-Cannot be determined** M1- presence of metastasis in

T4- tumour with direct extension to overlying skin or underlying chest wall		Lung, Brain, Liver, Skeleton, or Viscera

Mammography

- High rates of detection of early breast cancer
- Can detect cancer before appearance of palpable lump
- Early diagnosis = Higher survival rates
- Should not be performed in under 35 years
- Screening 50-69

Indications

- Suspected cancer: lump, focal pain, discharge nipple, nipple changes
- Screening 50-69
- Surveillance post breast ca
- Before cosmetic surgical procedures
- Stereotactic localization

How is it done

Breast compressed between two plates attached to a machine produces black/white images.

Digital mammography: sensitive for ≤ 50 and dense breasts

3D mammography

Findings

Macrocalcifications: coarse calcium deposits,

Microcalcifications: tiny specks of calcium in tissue, more worrying

Mass

Breast density: fibrous, glandular tissue vs fat, higher risk, hard to find cancer

MRI

After diagnosis, measuring size, multifocality and imaging contralateral breast

Screening for at risk patients in addition to yearly mammograms

Lots of false positives

MRI guided biopsies a possibility

BI-RADS: breast imaging reporting and data systems

I-Negative

II-Benign

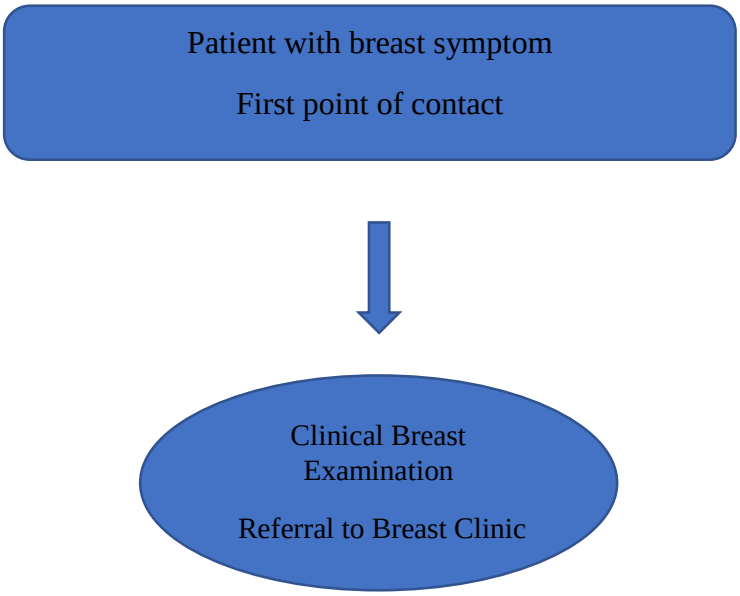
III-Probably benign: follow short time frame

IV-Suspicious: biopsy

V-Highly suggestive

VI-Proven malignancy

SYMPTOMATIC PATIENT CARE ALGORITHM



HIGH SUSPICION OF MALIGNANCY	INTERMEDIATE SUSPICION OF MALIGNANCY	LOW SUSPICION/NORMAL EXAM
Urgent referrals ● Clinically suspicious breast lump (fixed, hard, irregular) ● Axillary lymphadenopathy ● Skin Ulceration/Nodules ● Skin tethering ● Nipple retraction ● Pathological nipple discharge	Early referral within 21 days ● Palpable breast lump in Women >25 years ● Patients with non-lactational breast infection or abscess ● Lactation associated Infection	Routine referral ● Palpable breast lump in women <25 years ● Mastalgia and normal Exam, ● Family History with Normal CBE.

Breast Cancer – Management

The management of breast cancer is based on the following interventions

- Surgery: patients with breast cancer in Malawi are mostly offered a Modified Radical Mastectomy and Axillary Lymph Node Dissection. We do not offer breast conserving surgeries in Malawi because of two reasons mainly: unavailability of radiotherapy which is an adjunct of breast conservation and the late presentation of breast cancers.
- Radiotherapy: at the moment not available in Malawi
- Chemotherapy: there is an erratic availability of chemotherapeutic agents in Malawi at the moment
- Hormonal therapy: the main agent we have is Tamoxifen which is a Selective Estrogen Receptor Modulator

Surgery

There are several surgical interventions that can be done;

Breast conservation surgical procedures removes the cancer while keeping as much of the breast tissue and shape as possible. The commonest of these is a wide local excision (WLE). The following procedures can also be done as part of breast conservation (segmentectomy, quadrantectomy). This is followed by radiotherapy.

Modified radical mastectomy is the removal of all breast tissue (from clavicle superiorly to the inferior mammary crease or origin of the rectus abdominis muscle inferiorly and from just lateral to the sternum medially to the mid axillary line and axilla laterally). This is followed by dissection of lymph nodes up to level 3? 2 nodes. This helps in postoperative staging of the breast cancer and also guides postoperative adjuvant therapy.

Mastectomy and reconstruction of the breast can be done immediately or later on.

Type of surgery dependent on: size and grade of cancer, multifocality, increased likelihood of recurrence, presence of BRCA1/BRCA2 gene mutation, cosmetic outlook postoperative, previous radiotherapy, age of woman, premorbid conditions.

Breast conservation plus radiotherapy is as effective as a mastectomy for most women with early breast cancer. Morbidity (spread) and mortality are the same for both treatments.

ALND (Axillary lymph node dissection)

Standard of care for the treatment and staging of the axilla. ALN status is the most important prognostic indicator of breast cancer. This intervention often leads to significant morbidity, such as seroma, hematoma, wound infection, delayed wound healing, restriction shoulder movement, intercostal brachial nerve syndrome, lymph oedema, cellulitis, lympho-angiosarcoma, Stewart-Treves syndrome. Wound seroma and hematoma are the commonest complications and would lead to a wound breakdown if not anticipated. Management is pre-emptive placement of a suction drain in the breast bed and axilla.

Sentinel lymph nodes: The first lymph node to which cancer cells are most likely to spread from a primary tumour. It is a procedure to see if cancer has spread. Sentinel Lymph Node Biopsy is recommended for axillary staging for patients with early stage or invasive breast cancer without clinically or pathologically positive lymph nodes. It is done in conjunction with WLE. A blue dye or radioactive material is injected along the peri areolar space and the lymph nodes that have picked up this material are dissected out and analysed histologically. It is used mainly for staging of breast cancer and estimates the risk for metastasis. Avoids extensive lymph node surgery if SLN are negative.

Radiotherapy

Radiotherapy uses high energy x-rays to destroy cancer cells. It means using radiation to destroy the cancer. Radiation therapy may be used to treat breast cancer at almost every stage and it’s an effective way of reducing the risk of breast cancer recurrence after surgery. It can also be used in the treatment of symptoms caused by metastatic breast cancer.

Chemotherapy

Chemotherapy reduces the size of the tumour and can make the breast smaller, targets cancer cells not picked up. This is therefore recommended for locally advanced breast cancers who receive 6 cycles or less of chemotherapy before subjecting the woman to surgery (usually modified radical mastectomy and axillary lymph node dissection. Chemotherapy uses anti-cancer (cytotoxic) drugs to destroy cancer cells. The drugs circulate throughout the body in the blood stream. An example of a chemotherapeutic agent used in the treatment of breast cancer is Doxorubicin.

Management Early Stage

Early Breast Cancer

Invasive cancer, contained in the breast

May/may not have spread to lymph nodes

Undetected cancer cells outside breast/axilla

Invasive ductal/lobular or Paget's

Management: removal of cancer cells and residual cancerous cells plus ALND

Locally advanced breast cancer

Invasive breast cancer but tumour not spread beyond breast and nodes

≥ 5cm in diameter

Spread to axilla and these are regional nodes N1-N3

Involvement of skin: peau d' orange, skin tethering, puckering, satellite nodules, skin ulceration

Involvement of underlying muscle

Inflammatory breast cancer

Management: Downsize with chemotherapy, followed by surgery and chemoradiation

Breast Cancer - The Multidisciplinary Condition

A multidisciplinary breast cancer care team works together to diagnose and develop treatment plans for patients with breast cancer and reviews their treatment. The multidisciplinary clinic includes a consultation with oncologists, surgeons, breast care nurses. Histopathologists and radiologists are also part of this team. A personalized plan of action is based on these consultations and the patients imaging, pathology, immunocytochemistry and medical/surgical history.

Communication with Patients and Guardians

HEALTH EDUCATION/ADVOCACY

Improving Breast Health

- Avoid alcohol/Smoking
- Being overweight/obese post-menopausal increases risk
- Encourage good diet/physical exercise
- Nulliparity increases risk
- Having 1st child after 30 increases risk
- Breast feeding protective
- HRT, OCPs can increase risk

What foods are healthy

- Dark leafy greens
- Fruits
- Fish
- Beans and legumes

Breasts are made up of 3 kinds of tissue:

- Fibrous tissue holds the breast in place
- Glandular tissue makes the milk
- Fatty tissue in between and for shape and breast size
- Density in breasts due to fibrous and glandular. Dense breasts are a risk factor for cancer. Increase density seen on mammography as white tissue. Dense breasts are common in:
    - Younger women
    - Pregnant/breast feeding women
    - Women taking HRT
    - Women with lower body weight

Recognising breast problems

What should you look for in Breast Self-Examination?

- Important to know your breasts
- By doing BSE once a month, you may discover changes and alert a primary care giver

If you notice any of the following, please alert a health care provider:

- Change in size or shape of your breast
- A lump or hardening of the breast
- Swelling, redness, darkening or warmth of the breast
- Rash, lesions or dimpling of the breast
- Focal pain in one of the breasts
- Nipple discharge or a new onset of inversion of the nipple
- Swelling in the armpit

REMEMBER; Early detection, often through screening, can catch the disease when it is at the most treatable stage.

Role of pathologist in breast cancer management:

- Excision margins and completeness of excision
- Size of tumour, type of tumour
- Lymph node involvement
- Determine kind of proteins the tumour expresses: ER, PR, HER-2/neu…immunocytochemistry
- Grade of tumour, lymph vascular invasion
- Staging information

Targeted therapies

- Over expression of HER-2 on the surface of cancer cells stimulates growth of these cells
- These spread aggressively
- Trastuzmab (Herceptin)-monoclonal antibodies
- In addition to systemic chemotherapy
- Effective, less severe side effects
- Attacks specific breast cancer cells without affecting normal cells

Selective Estrogen Receptor Modulators (SERMs)

- Block the effects of oestrogen in breast tissue
- They work by sitting in the oestrogen receptors in breast tissue
- Blocks oestrogen signals so the breast cell will not grow and multiply

- Tamoxifen is an example
- Aromatase inhibitors in post-menopausal women

Breast surgery complications

Immediate

- Seroma
- Haematoma
- Wound infection/breakdown
- Skin flap necrosis
- Pneumothorax

Seroma management:

A seroma is a pocket of clear serous fluid that develops after breast cancer surgery. Seromas may appear as a swollen lump; they may be fluctuant and are sometimes tender. They may also present with clear or serous fluid draining from the incision site. Fluid that is thick or malodourous may indicate presence of an infection. Drainage by inserting a needle into the seroma and aspirating the fluid with a syringe. There might be need to drain the seroma several times. Sometimes sclerosants like talc, tetracycline or doxycycline antibiotics are used. Heat and compression garments have been used.

Haematoma management

Depends on severity. In its simplest form a hematoma is a bad bruise. It happens when blood collects under the skin. It is a painful red, black or blue lump.

Small hematomas may resorb after a few days.

Severe hematomas may continue to enlarge and may require surgery to drain the blood, and control the bleeding vessels and reclose surgical site.

If untreated can damage tissue and lead to infection and wound breakdown

Other immediate/intermediate complications

- Short term breast swelling
- Breast soreness from nerve injury
- Hardness due to scar tissue that forms at incision site
- Phantom pain

Message to patients

"After the operation (modified radical mastectomy and axillary lymph node dissection), it takes 2-3 weeks to heal but it may take several months before your chest and arm fully recover. The area will be bruised, swollen and stiff at first"

Wound care

- Remove dressings after 48 hours if all else is normal
- If you have a dressing, change it daily until you are told not to
- Wash wound area with mild soap and water
- You may shower but do not scrub the strips of surgical tape
- Do not sit in a bath tub, pool or hot tub until your doctor tells you its ok

Signs of infection

- Increased pain, swelling, warmth, redness
- Red streaks leading from the incision
- Pus drainage
- Fever
- These may appear within the first 30 days after surgery

Long term complications

- Lymphedema
- Atrophy of pectoralis major muscle
- Restricted arm mobility
- Neuralgia
- Wound induration
- Hypertrophied scars
- Sinus formation
- Axillary web syndrome-lymphatic cording
- Phantom pain

Lymphedema

Pathophysiology

- Swelling caused by build-up of fluid in body tissues

- May develop after treatment of breast cancer
- Commonly affects the arm but can affect hand and fingers
- Can also affect the chest, breast, shoulder

In some series 40% of women treated for breast cancer had lymphedema. There is no cure for lymphedema. The pain has been described as harrowing

Causes of lymphedema in breast cancer

- When lymphatic system becomes damaged
- When lymphatic system can't clear lymph fast enough
- Injury or infection can trigger lymphedema especially if one has fewer lymph nodes after axillary lymph node dissection
- Appears 12-18 months after surgery or irradiation
- Can cause sudden and serious recurrent infections brought by bacteria trapped in lymph fluid

Treatment

- Aim to reduce swelling and prevent complications
- Exercise helps to improve lymph drainage
- Bandages- compression sleeve or elastic bandage prevents build-up of fluid
- Diet and weight management
- Keep arm raised

Prevention of infection

- Massage therapy
- Avoid trauma and injury to the affected arm- no heavy lifting

Stewart Treves Syndrome

- Rare disorder
- Marked by presence of angiosarcoma that develops from chronic lymphedema
- Tumour of blood and lymph vessels
- Painful
- Carries poor prognosis

Palliative care

Palliative care is a type of care when a patient's disease is not responsive to curative treatment. Palliative care may involve all types of treatment, but not with the aim to cure the patient. The main focus of palliative care is to improve the quality of life. Palliative care involves control of pain and other symptoms related to the disease or treatment modalities. It also deals with psychological, social and spiritual problems of the patient and is often provided through a multidisciplinary team of doctors, nurses, social workers and volunteers.

Palliative care options include:

Pain control using the WHO criteria for analgesia

Control of infections: crushed Metronidazole for fungating lesions

Addressing patient centred concerns (haemorrhage, odour, pain, exudate, sepsis)

Control of nausea/vomiting

Treatment of anxiety/depression

Counselling and social support

Chemotherapy, surgery, radiotherapy to reduce tumour mass can also play a role in palliation

Non abandonment policy should be applied

Counselling

Like in all cancers the diagnosis of breast cancer is frightening and exposes the patient and her family to psychological torture.

Proper counselling should be part of the entire management strategy.

Good counselling enables the patient and her family to cope with the stress that is part and parcel of cancer and adjust to their lifestyles.

Counselling should continue during treatment and follow up.

Monitoring and Evaluation

Objectives

- Establish process metrics at the beginning of the program to measure its relevance, effectiveness and impact. Impact measures include tumour size at presentation and participation rates
- Evaluate health professional competency in CBE, breast health counselling and timely referrals

- Monitor quality and safety of early detection programs (e.g. education, training and expertise of personnel; standardization of protocols; time from referral to diagnosis; time from positive diagnosis to treatment)
- Evaluate the impact of CBE based on the main outcomes

Problem

- High disease burden, rising incidence, affecting younger age group, high mortality
- Lack of awareness
- Lack of knowledge and skills among providers
- Uncoordinated continuum of care

Consequence

- Late presentation
- Delayed diagnosis and treatment
- Poor survival/outcomes
- Care pathway not well defined

Interventions

- Breast health awareness in the community
- Clinical Breast Examination at primary care facilities
- Robust referral pathway
- Decentralization of diagnostics
- Advocacy for policy

Outputs

- Well functioning service delivery model for early detection with strong referral pathways leading to timely diagnosis and treatment

Outcomes

- Downstaging
- Reduced time lag between presentation, diagnosis and treatment

Impact

- Reduced morbidity and mortality due to breast cancer
- increased Allocation of resources for breast health care
- Ensuring healthy lives and promoting well-being for all at all ages (SDG 3)

Key Performance Indicators (INPUT)

- Proportion of health workers trained in breast health awareness
- Proportion of health workers trained in CBE
- Proportion of specialists trained in Imaging, Pathology and Procedures (biopsy, MRM/ALND)
- Number of technical advisory group meetings held
- Number of learning resource packages developed
- Number of trainers trained through TOTs

KPI (PROCESS)

- Median time taken by women from CBE to reach diagnostic centre
- Median time taken by women reaching diagnostic centre to diagnostic evaluation
- Median time taken by women from diagnostic evaluation to initiation of treatment
- Median time taken by women from initiation of treatment to completion of treatment

KPI (OUTCOME INDICATORS)

- Proportion of women referred for diagnostic evaluation after CBE
- Proportion of women who underwent diagnostic evaluation
- Proportion of women who were confirmed to have breast cancer after diagnostic evaluation
- Median size of breast lump of the women confirmed to have breast cancer
- Proportion of women who needed to receive treatment with curative intent for breast cancer
- Proportion of confirmed cases-initiated treatment
- Proportion of confirmed cases who completed treatment

Diagnosis and Coordination of Care

- Establish and share standards of care (protocols) for breast health visits across institutions

- Establish structured communication networks between primary care providers and diagnostic and treatment providers to facilitate uninterrupted care and reduce delays
- Strengthen referral networks to follow up evaluation, diagnosis and treatment and ensure that breast cancer once detected receives prompt and adequate diagnosis and treatment
- Implement quality assurance programs, including tracking outcomes to improve standards and practices and identify areas of improvement

Assessment

- Need to monitor primary caregivers with higher sensitivity for CBE
- Higher sensitivity for CBE is associated with classifying a higher percentage of patients with clinical signs of malignancy
- Trainees examination findings checked by a consultant surgeon/senior registrar can be effective during training of junior doctors and nurse practitioners by using a checklist
- Use of scoring systems for measuring performance (normal, benign, suspicious but probably benign, suspicious but probably malignant, malignant)

Factors that will enable follow-up for Evaluation, diagnosis and treatment:

The first step in improving access is identifying the existing structural, sociocultural, personal and financial barriers. There is need for equitable access to breast cancer care

There is need for coordination of services (ANC, PNC, U5C, OPD, HIV Clinics) with strong referral systems that will improve early breast cancer diagnosis and management

Human resource capacity building will improve patient access to follow up, evaluation, diagnosis and treatment. Training in breast cancer risk factors, clinical breast examination, and proper referral procedures can improve early detection and outcomes

While training of primary caregivers is key to early diagnosis locally, centralized services should also include outreach to the communities

There is also need for patient navigators who are health care professionals (nurses, HSAs) or community workers or volunteers (cancer survivors) who can assist patients in navigating the system, facilitating communication with providers for patients to gain access to services and also adhere to treatment recommendations

Specialty centres and breast clinics play a role in promoting breast health care and improve outcomes. Breast surgery outcomes are superior in high volume centres and high-volume laboratories produce more accurate results

Multidisciplinary breast programs can lead to improvement in treatment plans and reduce duplication of care. In our setting a multidisciplinary team can include 2-4 members (ie surgeon, pathologist, nurse, oncologist). This ensures services are coordinated and procedures standardized.

There is need for the Ministry of Health to partner with training institutions in Malawi to develop training programs like CBE to increase the number of health professionals trained in breast health.

Role playing session:

This session will mainly concentrate on breaking news to a patient that they might have breast cancer based on the history and examination findings during the CBE

i) One participant will take the role of a caregiver while another will take the role of a patient with breast cancer diagnosis. One other participant taking the role of a chaperone. One of the facilitators of the course will also be in attendance
ii) The caregiver will briefly explain what breast cancer is, how a diagnosis is made. A discussion of follow up and referral for investigations and management options will be discussed
iii) The patient will also be allowed to ask questions and seek clarification in areas they didn't understand
iv) The role of the facilitator will be to critique the process
v) This session should take 10 minutes

Materials for the Practical Session:

- Mannequin/s
- Couches
- Gloves
- Stethoscope

Breast Clinic session:

- This will be on the second day of training

- Will start at 8.30am and finish by 11.30am
- The consultants/registrars in the clinic will first demonstrate how to take a history and conduct a clinical examination. After examination a plan of care will be instituted
- The participants will then each be allocated a patient and be allowed to take a history
- After taking the history the participant will then present to the consultant/registrar
- Then the participant will be allowed to examine the patient
- A checklist will be used to assess the participant and a mark/score will be given

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Appendix 1 - SAMPLE URGENT REFERRAL LETTER

Name of health facility……

Referred to……...

Date……

We are referring [name]. . . . . ., [date of birth] . . . / . . . /. . ...., from [address] . . . . presenting with a . . . . . weeks/month history of an unexplained discreet breast lump suspicious of malignancy because of the following signs elicited after doing a Clinical Breast Examination:

- □ Unexplained lump, at the left/right breast
- □ Firm to hard in consistency
- □ Irregularity
- □ Skin dimple overlying the lump or any evidence of skin tethering or fixation
- □ Nipple (bloody/serous discharge, inversion, retraction, ulceration)
- □ Chest wall fixation
- □ Axillary/supraclavicular lymph node involvement
- □ Size of …...cm

We are therefore referring her to the breast clinic for your diagnostic evaluation (USS, Mammography, biopsy, staging investigations) and initiation of treatment.

We would like to hear from you on your investigation findings and the type of treatment you are offering her.

Yours Sincerely,

Name……..... Position…….

Signature……

(Duplication)

Phone Number……...

Appendix 2 - TRANSFER OF CARE SAMPLE LETTER

Name of health facility……

Transfer of care to……

Date…….

Your patient, (name of patient) …… date of birth……..…. place of residence) ……. has a diagnosis of breast cancer stage……He has undergone the following treatment……... had a surgery for breast cancer and may also have received other treatments (adjuvant chemotherapy, radiotherapy, targeted therapies).

The patient is now being sent back to you for ongoing cancer surveillance in addition to their regular care.

The evidence-based recommendations below outline the standard follow up procedures for breast cancer surveillance and are intended to assist you in providing optimal breast cancer follow up for your patient:

- Periodic clinical examinations should include examination of the breast(s)/chest wall, axillary and supraclavicular lymph nodes in addition to routine clinical examination. Clinical Breast Examination should be performed every 6 months for 2 years then yearly afterwards.
- Breast self-examination monthly should be encouraged.
- We encourage you to send the patient once a year to our breast clinic/decentralized unit for a surveillance mammogram and further examination.

The following symptoms/signs should warrant referral:

- New breast lump
- New rash/nodule on chest wall
- New lymphadenopathy
- New persistent bone pain
- New persistent cough/dyspnoea
- New hepatomegaly/jaundice

- New persistent headache/neurological deficit
- New seizure
- Back pain, limb weakness, change in sensation, loss of bowel/bladder control

Yours Sincerely,

Name……..... Position…….

Signature……

(Duplication)

Phone Number……...

APPENDIX 3 – CHECKLIST FOR BREAST EXAMINATION

Since the breast is a frequent site of carcinoma, a general examination is incomplete unless both the breasts have been included

PARTICIPANT_____ **Date Observed**

_ _____

CHECKLIST FOR BREAST EXAMINATION						
STEP/TASK	**CASES**					
GETTING READY						
1. Greet the woman respectfully and with kindness.						
~~2.~~ Explained to the woman that she will be asked some questions and her breasts examined						
3. History Taking (ask about hormone replace therapy, family history of breast cancer) 4. Asked the woman to undress from her waist up. Have her sit on the examining table with her arms at her sides.						
4. Washed hands thoroughly and dried them. If necessary, put on new examination or high-level disinfected surgical gloves on both hands. 5. Examined and compared both sides. 6. Started examination of the normal side.						
1. Inspection Looked at the breasts and noted any differences in: ● **Shape**: symmetry and contour ● **Size** ● **Nipple and areola**: position, size, shape, surface and any discharge						

● **Skin changes**: dimpling, puckering, engorged veins, thickening and nodularity, discolorations, ulceration, cancer en cuirasses, peau d`orange and scars of previous operation Made sure that he/she exposed the under surface of the breast and noted any abnormalities hidden. ● **Swelling**: mass or lump ● **The arms**: Edema, distended veins and muscle wasting or weakness.					
2. Looked for asymmetry of the nipple, areola or the breast in all the following positions: a) the patient's hands rested on her thighs b) the hands were firmly pressed onto the hips c) the arms were raised up and both the palms were placed behind the head d) the patient leaned forwards e) finally made the patient lie down on a couch with a pillow below her chest					
3. Palpation: - Started with normal side to have a standard for comparison. - Palpated first using the palmer surface of fingers (the flat of the hand) then the tips of fingers - Palpated each quadrant, the axillary tail and the axilla					
4. Palpated in all five positions from (a) to (e) in point 2					
5. Any mass was verified for: ● Site (position: which quadrant?) ● Tenderness ● Temperature ● Size ● Shape ● Surface ● Edge ● Consistency					

● Mobility and Relation to the surrounding: (a) Relation to the breast tissue: h eld the breast with one hand and tried to move the mass with the other hand. (b) Relation to the nipple: held the nipple with one hand and tried to move the mass with the other hand. (c)Relation to the muscle: asked the patient to rest her hand on her hip with the arm relaxed. Held the lump and estimated its mobility in two perpendicular directions. Then asked the patient to press her hand against her hip to contract the pectoral muscles, and re-estimated the degree of mobility of the lump. (d)Relation to the chest wall: fixity to the chest wall results in loss of all mobility irrespective of muscular contraction. (e) Relation to the skin: pinched the skin off, was it attached to the lump? Then moved the lump and observed the breast for tethering or fixity.					
6. Expressed the areola for any discharge from the nipple					
7. Examined the axilla for nodes: ● The arm was elevated and the hand slid in its extreme apex then the arm is lowered to relax the axillary fascia and the nodes are palpated against the chest wall for their size, consistency, mobility, matting, distribution and number. ● The groups are: o The pectoral (or anterior) group o The central group o The posterior (or subscapular) group o The lateral (brachial or humeral) group o The apical (infraclavicular) group ● The patient was examined both from the front (for palpation of the central, pectoral, apical and lateral groups) and from the back (for palpation of the subscapular nodes). ● The right axilla was examined by the left hand, and vice versa.					
8. Palpated the supraclavicular fossae:					

- from front each at a time - from behind simultaneously - examined and compared.					
9. After completing the examination, had woman cover herself. Explained any abnormal findings and what needs to be done. If the examination is normal, told the woman everything is normal and healthy and when she should return for a repeat examination					
10. Showed the woman how to perform breast self-examination					
11. Examination of male breast was carried out in the same way as in the female.					