सत्यमेव जयते

NATIONAL HEALTH MISSION
राष्ट्रीय स्वास्थ्य मिशन

TRAINING MODULE

For Staff Nurses on Population Based Screening of Common Non-Communicable Diseases

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Training Module for Staff Nurses on Population Based Screening of Common Non-Communicable Diseases

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FOREWORD

I am happy to write this foreword to the Training Module for Staff Nurses for the prevention, screening and control of common Non-Communicable Diseases.

The Government of India is undertaking a population based, universal screening programme for common NCDs for all citizens above thirty years of age. The screening for hypertension, diabetes, oral and breast cancers will take place at the community level by the ANM. However, you as the Staff Nurse in the Primary Health Centre, inter-alia will undertake screening for cervical cancer by Visual Inspection using Acetic Acid. In addition, you will also undertake screening for those patients who report to the PHC or CHC for all the conditions for which screening is being offered. You will also serve as the mentor to the team of frontline workers – the ASHA and the ANM in the sub centers and villages in the PHC area.

I am happy to note that this module covers the common NCDs and provides you with the skills to undertake screening for cancers of the cervix, breast and oral cavity. This will ensure that women have access to cancer screening programmers close to their homes. Your role in supporting the ASHA and ANM will also bolster their confidence in referring women to the PHC.

The module also covers content related to health prevention and promotion. It is important that while undertaking these services you consider not just the screening and diagnostic elements but also the aspects of prevention and health promotion. These need repeated reinforcement in the community and at the health facility.

I urge that you take the effort to become competent in the skills that are detailed in the module so as to strengthen the reach, coverage and effectiveness of this population based screening programme.

(Jagat Prakash Nadda)

348, ए-स्कंध, निर्माण भवन, नई दिल्ली-110011

ABOUT THIS MODULE

This module is intended largely for Staff Nurses posted at the Primary Health Centre (PHC). In this module, we will cover the content related to common Non-Communicable Diseases. These are Hypertension, Diabetes and three common cancers – Cervix, Breast and Oral cavity; and associated risk factors. None of these topics are new to you and you have already covered these during your preservice training. Thus, this is largely a refresher training module.

The module also provides you with information on the programme for Population Based screening of common Non-Communicable Diseases. While population based screening for Hypertension, Diabetes, Oral Cancer and Breast cancer is likely to take place at the sub centre, you will still need to screen those patients who live near the PHC and use PHC as the first port of call. Thus, you will need an understanding of the operational aspects of this programme.

Screening for common cancers, particularly the use of Visual Inspection using Acetic acid (VIA) for Cancer Cervix, is likely to be a new skill area. Through this module, you will be trained to undertake VIA for women in your PHC area. You will also be responsible for screening those women who are referred by the ASHA and ANM/MPW; and also for supporting and mentoring them.

ACKNOWLEDGEMENTS

Thanks are due to National Institute of Cancer Prevention and Research (NICPR), for providing their critical inputs. We also thank the Nursing faculty of All India Institute of Medical Sciences and Jamia Hamdard University, New Delhi for providing feedback.

Some sections of this module are excerpted and adapted from various sources. They are Manuals of National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke (NPCDCS); and Training Module for Medical Officers for Prevention, Control and Population Level Screening of Hypertension, Diabetes and Common Cancer (Oral, Breast & Cervical) – National Centre for Disease Control, Government of India.

CONTENTS

CHAPTER 1

INTRODUCTION TO NON-COMMUNICABLE DISEASES (NCDs)

Non-Communicable Diseases (NCDs), also known as chronic diseases, are not passed from person to person. They are of long duration and generally slow progression. NCDs do not result from an (acute) infectious process and hence are not communicable. They have a prolonged course and does not resolve spontaneously. The 4 main types of Non-Communicable Diseases are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.[1] Non-Communicable Diseases (NCDs) are currently the leading cause of preventable deaths and disability in India. The four-identified major NCDs are Cardiovascular Diseases (CVD) such as heart attacks and stroke, Diabetes, Chronic Respiratory Diseases (Chronic Obstructive Pulmonary Diseases and Asthma) and Cancer. They are the leading cause of death, accounting for over 60% of premature mortality, placing them ahead of Communicable Diseases, Maternal, Prenatal, and Nutritional conditions (WHO 2014).

NCDs mainly result from lifestyle related factors such as unhealthy diet, lack of physical activity and tobacco use. Changes in lifestyles, behavioural patterns, demographic profile (aging population), socio-cultural and technological advancements are leading to sharp increases in the prevalence of NCD. These diseases by and large can be prevented by making simple changes in the way people live their lives or simply by changing our lifestyle.

These diseases are driven by forces that include ageing, rapid unplanned urbanization, and the globalization of unhealthy lifestyles. For example, globalization of unhealthy lifestyles like unhealthy diets may show up in individuals as raised blood pressure, increased blood glucose, elevated blood lipids, and obesity. These are called 'intermediate risk factors' which can lead to cardiovascular disease, a NCD.[1]

In India,[2] Non-Communicable Diseases (NCDs) contribute to 60% of all deaths. The four major causes of NCD deaths are:

- Coronary Heart Disease, Stroke, and Hypertension (45%)
- Chronic respiratory disease (22%)
- Cancers (12%)
- Diabetes (3%)

In many parts of our country, infant and maternal mortality rates are high; and also there is high burden of disease and death from infections or communicable disease. Added to this, as you can see from the description above, we now have an increasing burden of Non-Communicable Diseases.

Most often, Non-Communicable Diseases originate from unhealthy lifestyles and adverse physical and social environments. Well-known risk factors include poverty, poor diets like intake of foods rich in fat, salt and sugar; physical inactivity, consumption of tobacco, excessive use of alcohol, and stress.

1 http://www.who.int

2 Burden of NCDs and their risk factors in India. http://www.searo.who.int/india/topics/Non-communicable_diseases/ncd_situation_global_report_ncds_2014.pdf

We now know from research studies and experiences of projects in our country and from other countries that the burden of Non-Communicable Diseases can be reduced through effective preventive measures. The response of our health system is not just to identify and treat these diseases, but also address prevention and health promotion. The data 2 below show that these risk factors are increasing among our people.

- A 30-year old individual has a one-fourth chance of dying from any of the four major NCDs before the age of 70 years.
- Prevalence of current tobacco smoking in India is 23.6% in comparison to the global prevalence of current tobacco smoking (22%).
- The consumption of pure alcohol (among those who are 15 years and above) has increased from 2010-2014.
- Rapid increase in obesity and overweight is seen, with prevalence of obesity increasing by 22% from 2010-2014.
- Prevalence of hypertension has increased by 10% from 2010-2014.

The level of physical inactivity among Indian adults is around 13%.

CHAPTER 2

POPULATION BASED SCREENING OF NCDs

Service Delivery Framework

- At the start of the program, ASHAs will do population enumeration to cover the eligible population, i.e. all women and men over 30 years.

Table 1: Method and Frequency of Screening

Type of NCDs	Age of beneficiary	Method of Screening	Frequency of Screening
Hypert-ension	30 years and above (Normative Population: 370 people/1000 population; 182 women and 188 men)	Blood pressure apparatus-Dig-ital or Aneroid Sphygmoma-nometer	Once a year
Diabetes	30 years and above ((370 people/1000 population)	Glucometer	Once a year
Breast Cancer	30-65 years (182 women/1000 population)	Clinical Breast Examination (CBE)	Once in 5 years
Oral Cancer	30-65 years (370 people/1000 population)	Oral Visual Examination (OVE)	Once in 5 years
Cervical Cancer	30-65 years (182 women/1000 population)	Visual inspection with acetic acid (VIA)	Once in 5 years (at the level of PHC to start with)

- ASHAs will then complete a Community Based Assessment Checklist (CBAC) (Annexure 1)for the eligible population.
- After CBAC exercise is completed, ASHAs will mobilize those in the eligible population, to attend screening day at a fixed location on a specific day.
- Every individual will be screened annually for Hypertension (High Blood Pressure) and Diabetes. For common Cancers, the screening should be done once in 5 years. Details about the method and frequency of screening is given in Table- 1.
- While conducting screening at community level, following principles need to be followed:
  a) No individual should need to travel more than half an hour to be screened.
  b) Screening is conducted in a site where privacy is assured.
  c) Screening is carried out according to standard protocols.
- Screening for Hypertension, Diabetes, oral cancer and breast cancer can be offered in the outreach services at the village level, while cervical cancer screening requires privacy and facilities for sterilization of equipment.
- Where Cervical cancer screening is also involved, it should be done at least at the SHC/HWC. **It should be supported and supervised by a trained Lady Health Visitor/**

Staff Nurse or even a Medical officer, and that the screening days should be preceded by mobilization events in coverage area to enable awareness and high levels of participation. The screening days should be conducted with the ambience of a mela or festive gathering to highlight the importance of the process.

- Concerned ANMs, LHVs, SNs, and mid-level providers would be trained in Oral Visual Examination (OVE) and Clinical Breast Examination (CBE). They would also be trained in Visual inspection using Acetic Acid (VIA) for cervical cancer screening.
- LHVs and SNs should serve as mentors and trainers to the sub centre staff and also assist when there are shortages/absences.
- States could consider engaging one additional staff nurse/Lady AYUSH provider/Rural Medical Assistant (Chhattisgarh model), or Rural Health Practitioner (Assam model) to manage the screening programme for the entire PHC area.
- Referral:

  a) For cancers of the oral cavity and breast, the first level of referral is the CHC/SDH/DH and then to the DH for a biopsy for confirmed cases.

  b) For cervical cancer, the CHC could offer colposcopy, wherever possible, for those that are VIA positive and cannot be managed by cryotherapy at the level of the PHC. The biopsy cases would need to be referred to the DH, or to the nearest tertiary centre.

Referral and Treatment: Ensuring Continuity of Care

- Those diagnosed with Hypertension and Diabetes would be referred to a Medical officer (MBBS), at the nearest facility, for confirmation, conducting relevant laboratory investigations, and initiation of treatment.
- Those who are found positive for cancer/precancerous lesions will be referred by ANM/Staff Nurses in specified screening sites to the appropriate PHCs/CHC/DH for confirmation and treatment by trained specialists, as per the Operational Framework developed for Cancer Screening and Management.
- Providers would be oriented in the use of standard treatment guidelines for diagnosis and treatment of common NCDs. The ANM, ASHA and SN should also be aware of the complete treatment protocol.
- For those individuals who are already on treatment under the care of a private practitioner, they could be offered the choice of taking drugs from the public health system, after appropriate confirmation.
- Community follow up will be done by frontline workers through home visits.

Capacity Building Plan

- ANM's in selected sub centers, Staff Nurses and LHVs will require two weeks training at a DH/tertiary care institutions for training in VIA.

Monitoring and Supervision

The overall responsibility for monitoring and supervision of field activities is with the Primary Health Centre Medical officer. Review of the programme should be an integral a part of monthly review meetings, field supervision, and data monitoring. Recording and reporting at all levels would be aligned with NPCDCS guidelines.

The following indicators would be used to monitor the programme, and these would be synergized with existing records and reports under the NPCDCS programme. Data would also need to be disaggregated by age and sex to enable creation of a data base to enable learning and better focus programmatic efforts:

(i) % of population over 30 years whose blood pressure and blood sugar was measured in last two years.

(ii) % of population over 30 years who were screened for Oral Cancer.

(iii) % of women over 30 years screened for Cervical Cancer.

(iv) % of women over 30 years screened for Breast Cancer.

(v) % of those screened positive for HT/DM who were examined at the PHC/CHC.

(vi) % of those who were initiated on treatment at PHC or above who are still under treatment, un-interrupted for the last three months.

(vii) % of those currently on treatment who have achieved blood pressure/sugar control.

(viii) % of those who were screened positive for each of the cancers that underwent biopsy at the CHC/DH.

(ix) % of those who underwent treatment for each of the cancers who are screened periodically.

Table 2: Roles and Responsibilities of Frontline workers for Population Based NCD screening

ASHA	ANM
◆ Listing of all adults of 30 years and above.	◆ Supporting ASHA for population Enumeration and creation of individual health records.
◆ Completing the Community Based Assessment Checklist.	◆ Supporting ASHA in completion of Community Based Assessment Checklist (CBAC).
◆ Organising a screening day-understanding the work-flow processes.	◆ Community mobilization and Health Promotion with ASHA.
◆ Undertaking health promotion activity in the community.	◆ Undertaking screening at community or SC level.
◆ Undertaking follow up for treatment adherence and enabling lifestyle changes.	◆ Referring those who are suspected of any of the NCDs to MO at the PHC.
◆ Creating Patient Support Groups.	◆ Follow-up of those who are diagnosed with any of these NCDs and ensuring that they adhere to the treatment plan.
	◆ Identify the warning signs of complications and refer to appropriate facilities.
	◆ Maintain records and registers as necessary.
	◆ Support the ASHA in her tasks related to the NCD prevention.

Table 3. Roles of the Staff Nurses at the PHC

Staff Nurse
◆ To undertake screening for Non-Communicable Diseases for all those of age 30 years and above, who report to the PHC
◆ To undertake screening of Cancer Cervix, using VIA.
◆ To support and mentor ASHA/ANM and to expand population based screening of common NCDs.
◆ To work closely with the Medical Officer in developing a treatment plan particularly related to life style modifications.
◆ To counsel individuals on life style modifications, and to support/mentor ANM and ASHA in Health Promotion.
◆ To ensure the availability of drugs and supplies including equipment and consumables.
◆ To maintain records at the PHC level.

The Role of a Staff Nurse will primarily be to screen for common Non-Communicable Diseases and supporting the sub centre staff. At Sub centre level, an ASHA will be responsible for undertaking the Population Enumeration of all those aged thirty years and above through home visits. ASHA will list all adults of target group and will register all details specific to Non-Communicable Diseases. This list is to be updated every six months. ASHA will also be completing a health card for each individual which will enable the follow-up by service providers at PHC or higher level of facility. This card will also have treatment and other diseases related findings of an individual, and will help in ensuring the continuity of care. ANM will be supporting her in this task, and will also cross-verify 10% of the population.

ASHA will then fill CBAC for her community and ANM will ensure that its complete and filled correctly. CBAC form is designed to collect details related to history of symptoms and behavioural factors; which includes tobacco and alcohol consumption, routine

physical activity, waist circumference measurement, family history of Diabetes, Hypertension and heart diseases, and presence of symptoms of common cancers, epilepsy and respiratory diseases. In addition, this form also includes questions to assess signs and symptoms for Tuberculosis and Leprosy. In places where there is no ASHA, ANM will undertake the tasks mentioned above.

Once the CBAC is filled, ASHA with the support of ANM will mobilize the community to attend the screening day. Screening of Hypertension, Diabetes and Oral/Breast cancer will be at the level of sub centre; however, cervical cancer screening will be done at PHC and higher facilities, through Visual Inspection using Acetic acid (VIA). The main role of the staff nurse is to perform VIA. Cases with positive results will be referred to a lady medical officer/ gynaecologist/surgeon for further investigations.

Staff Nurse will support and mentorANM/ASHA on the screening day. Once the screening is complete, the suspected cases will be referred to PHC for a confirmatory diagnosis and treatment initiation. Once a suspected case has been diagnosed positive, the treatment plan will be made by the Medical officer at the PHC level.

The treatment for Hypertension and Diabetes can be initiated at the PHC itself. The treatment plan will not only consist of medication, but will also include advise on lifestyle modification. The patient will receive at least a month's supply of drugs from the PHC. ASHA will make monthly home visits to such patients and will ensure treatment compliance and regular monitoring. These records will also be updated on Health cards on a regular basis.

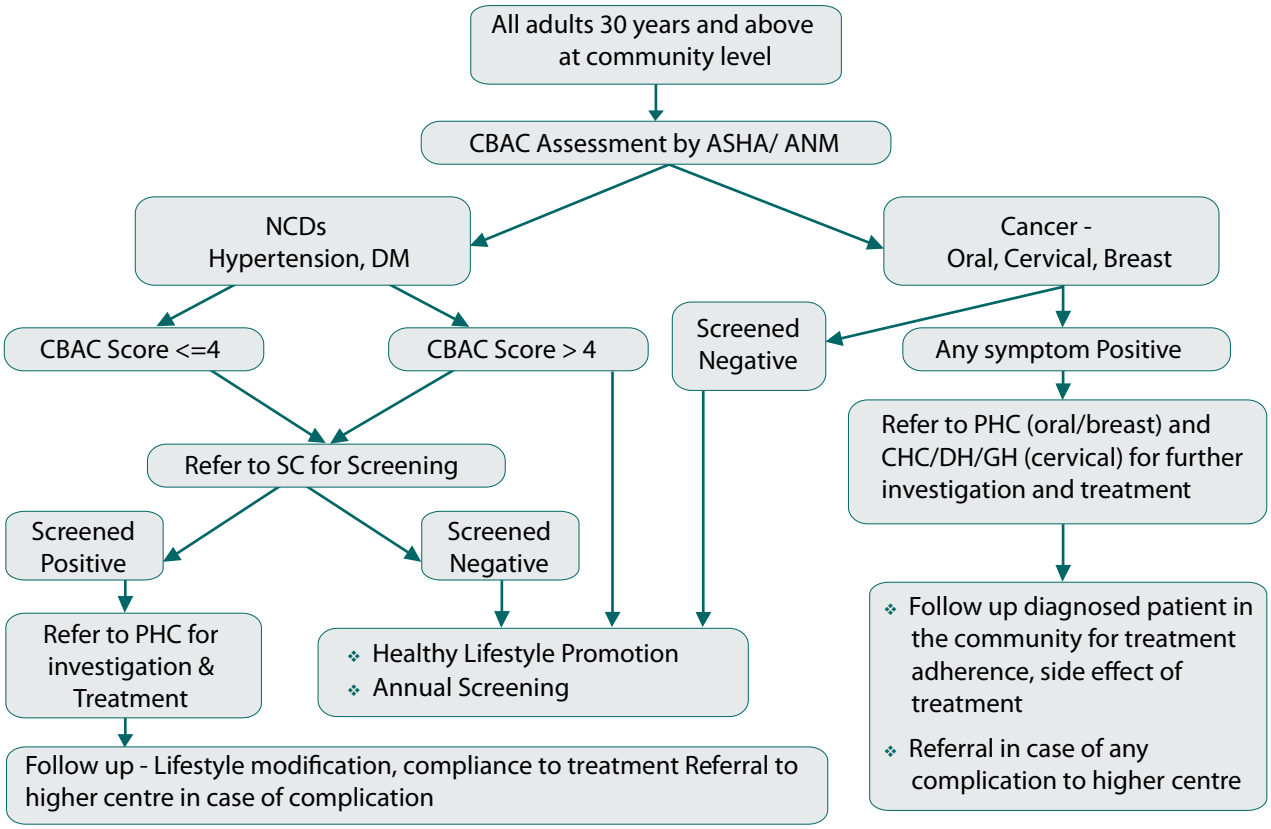
ASHA and ANM will be maintaining the records at the level of Sub centre, which will also be submitted in the PHC monthly meetings. Staff Nurses/LHV at the PHC will be supporting and supervising the ANMs and ASHAs through regular visits to their coverage area, and will review selected cases during their routine visits. At PHC level, Staff Nurse will maintain the records, analyse them and will assist the MO is submitting them to the district.

At PHC level, a register will be maintained for Non-Communicable Diseases which will record the details of patient management. This register has to be maintained with every visit of the patient.

For complications and suspected cases of cancers, individuals will be referred to a higher facility with a specialist for confirmatory diagnosis and initiation of the treatment.

A table on the health facilities with packages of services available is at Annexure 2.

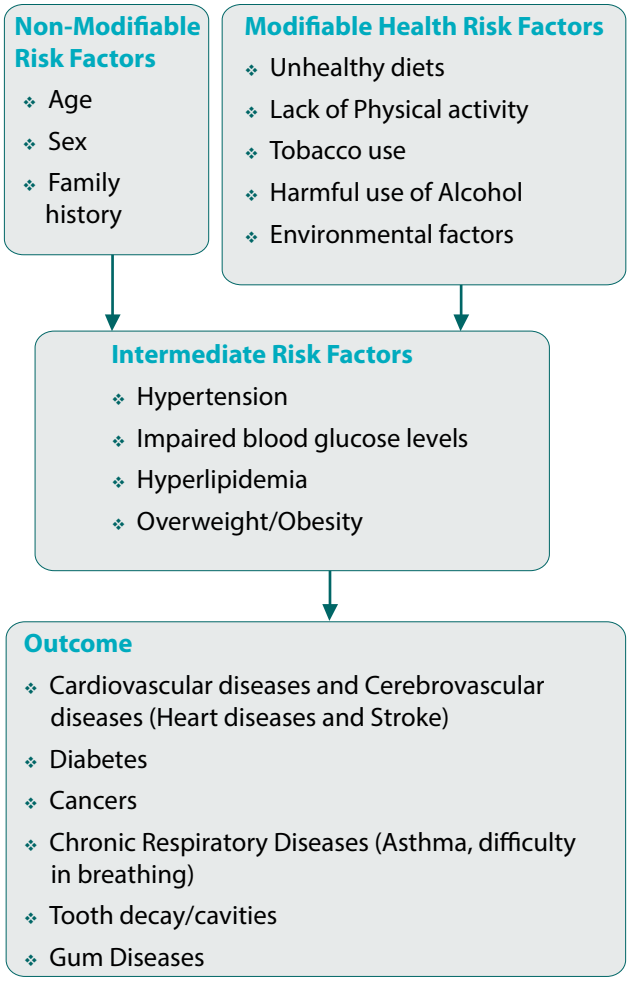
Figure 1. Flow chart showing process of Screening and Referral



CHAPTER 3

RISK FACTORS FOR NCDs

A risk factor can be defined as "An aspect of personal behaviour or lifestyle, an environmental exposure, or a hereditary characteristic that is associated with an increase in the occurrence of a particular disease, injury, or other health condition.[3]"



The figure[4] below shows how risk factors can lead to Non-Communicable Diseases. The more risk factors one has, the greater is the chance of getting a particular disease.

Risk factors are of two types:

1. Those who cannot be modified i.e. age, gender, family history, genetics etc., and they are called "Non-modifiable" risk factors. These risk factors are inherent to an individual and cannot be changed.

   Age: With increasing age, our body undergoes changes. As we grow older, there is an increase in the risk of developing hypertension (high blood pressure), high blood sugar levels, high levels of body and blood fats. These conditions can lead to Non-Communicable Diseases like- cardiovascular and cerebrovascular diseases, diabetes, cancer, respiratory problems, etc.

   Sex: Both women and men are at risk of developing Non-Communicable Diseases. Men are at a higher risk of developing Non-Communicable Diseases. However, women who have reached menopause are more likely to suffer from heart attacks than pre-menopausal women.

   Family history: The chances of getting some Non-Communicable Diseases are higher if a close family member-parents, siblings also have the disease.

2. Those that can be modified by change in behavior i.e. diet, overweight/obesity, harmful

3 Principles of Epidemiology, CDC, 2006

4 Adapted from WHO STEP wise approach to NCD surveillance, WHO-2003.

use of alcohol and tobacco, physical activity, stress etc., and they are called "Modifiable" risk factors.

Diet: Low consumption of fruits, vegetables and water has been identified as a reason of developing a range of chronic diseases. Diet rich in salt, sugar, fat should be avoided by all.

Overweight/Obesity: A person with body weight above a normal healthy range is more prone to get health issues.

Tobacco: It causes cardiovascular, cerebrovascular, respiratory, digestive tract diseases and has a significant adverse effect on pregnant women. All tobacco users should be encouraged to quit smoking/ chewing tobacco. All non-smokers should be encouraged not to use tobacco in any form.

Alcohol: Harmful use of alcohol is linked with NCDs as well as trauma and injuries. If possible, the use of Alcohol should be avoided by everyone.

Physical activity: Lack of physical activity not only leads to obesity, but also increases risk of getting NCDs.

Stress: Stress is linked with all of the above-mentioned risk factors. It influences the physical activity and diet, but also can draw people's attention towards tobacco and alcohol. It can worsen the physical and mental condition of an individual thus leading to disease conditions.

The other classification of risk factors categorized them under following headings:

1. ***Physiological:*** It includes overweight/obesity, raised blood glucose/blood pressure and raised total cholesterol.
2. ***Biological:*** It included non-modifiable factors like age, gender, family history etc.
3. ***Environmental:*** It included factors like air, food and water pollution.
4. ***Social:*** Poverty, living and working conditions, and cultural influences falls under this category.

Lack of awareness of risk factors, poor health interventions, incompetency at the level of health systems, poor social conditions and high cost of treatment are all responsible for the rise of NCDs. These risk factors when present in a combination increase the risk of an individual for NCDs.

RISK FACTORS	
Healthy Diet	❖ All meals to be taken at regular intervals. ❖ Wash food items properly before cooking. Boiling, steaming, roasting, cooking with minimal oil, as methods of cooking should be used rather than deep frying or using excess amount of oil. ❖ Consume a variety of fresh, seasonal and locally available fruits and vegetables. ❖ Eat whole fruits and whole cereals and pulses (with outer covering '*chilka*') as they are rich in fiber or roughage. Fiber/roughage helps in slowing down the absorption of sugar and fats into the blood. ❖ Restrict eating processed foods or foods available in packets with high amount of fat/oil, salt and sugar. ❖ Reduce the consumption of sugar rich foods. Those with family history of diabetes should be careful of the amount and type of food consumed. Adding extra salt to cooked food and salads should be avoided. Those with family history of high blood pressure should especially reduce their daily salt consumption. Reduce the amount of salt- not more than 1 teaspoon (5 gms) of salt for each individual in the whole day. ❖ Restrict intake of red meat like mutton, liver, brain, etc. and consume lean meats like chicken, fish, etc. ❖ Use vegetables oils like mustard oil, groundnut oil, soybean oil, etc. for cooking. In practice, it is best to use a mixture of oils. Ghee, butter, coconut oil is harmful and should be used in small quantities. ❖ Drink plenty of water, at least 8-10 glasses daily. Increase intake of fluids in diet.

RISK FACTORS	
Physical Activity	❖ Physical activity is a key determinant of energy expenditure of an individual. ❖ To promote weight control and maintain a healthy weight, physical activity on a regular basis is important. Exercise regularly (moderate to vigorous) for 5-7 days per week; start slowly and work up gradually. ❖ At least 30 minutes (accumulated) of physical activities per day for cardiovascular disease protection. 45 minutes/day (accumulated) for fitness. 60 minutes/day (accumulated) for weight reduction. ❖ Sedentary activities like spending long hours in front of computers and TV should be discouraged and outdoor activities like gardening, cycling etc should be encouraged. ❖ Yoga & Meditation: both have gained much importance in the past years as they promote health by improving control of mind and body for the overall well-being of a person.
Tobacco and Alcohol	❖ Tobacco is consumed as various forms in India. Smoking tobacco is used in forms of *cigarettes, bidi, cigars, hukkah* etc. Smokeless tobacco is used in forms of chewing, sucking, inhaling, applying to teeth and gums etc. ❖ Alcohol is consumed widely in India. Its various forms includes alcohol made from locally grown grains, vegetables and fruits. Eg. *arrack*, *mahwa, tari* (*toddy*) etc; distilled alcohol/ foreign alcohol like whisky, rum, etc; beer and locally made illegal drinks. ❖ Tobacco and alcohol use is associated with diseases of the heart, stroke, lungs, kidney, cancers of lungs, oral cavity, respiratory problems, increased risk of tuberculosis, results in blindness, high blood pressure, diabetes, tooth decay/gum disease, bad breath, etc. ❖ Tobacco use in pregnancy leads to low birth weight babies and still birth. Tobacco use leads to impotence and low fertility among men. ❖ Consumption of alcohol during pregnancy leads to complications during delivery and defects in the child. ❖ If a person is on diabetes medication, alcohol consumption increases the risk of low blood sugar (hypoglycemia). ❖ Harmful use of alcohol and tobacco should be avoided. ❖ All non-smokers should be encouraged not to start smoking. All smokers should be strongly encouraged to quit smoking.
Overweight/Obesity	❖ The main causes of becoming overweight/obese are: ❖ Family history, unhealthy diet, lack of physical activity, psychological factors- Depression, anxiety, stress, and low esteem can result in over eating, hormonal imbalance in the body, over-feeding. ❖ Maintain healthy weight; people who are overweight need to lose weight by eating healthy and doing regular physical activity.
Stress	❖ Stress affects the body (physical) or mind (mental) or both. ❖ Stress may lead to digestive problems, back or neck pain, sleeping problems, substance abuse, headaches, sleeplessness, depressed mood, anger and irritability. ❖ Stress contributes to health problems, such as heart disease, stroke, ulcers, high blood pressure, diabetes, depression, anxiety disorder, and other illnesses. ❖ Avoiding stress is not possible for an individual; however, it can be handled with a positive approach with help of support and life style changes.

CHAPTER 4

DIABETES

Diabetes is a disease in which the body does not produce or cannot properly use the hormone insulin. The body needs insulin to convert sugar, starches and other foods into energy. Impairment of insulin secretion and action in the body leads to abnormally elevated levels of glucose in blood, a condition classically termed as Diabetes. Normally, a blood glucose level taken randomly (that is at any time of the day) of over 140 mg/dl should lead to a suspicion of diabetes.

What are the different "types" of Diabetes?

Diabetes is classified into three types namely Type 1 Diabetes, Type 2 Diabetes and gestational diabetes. A description of each of these types is give below:

Types of Diabetes	What is it?	Who gets it?
Type 1 Diabetes (T1DM)	Body does not produce insulin at all. People with this form of diabetes require daily injections of insulin in order to control the levels of glucose in their blood. This may be due to genetics, changes in environmental risk factors and/or viral infections.	The disease can affect people of any age, but onset usually occurs in children, adolescents and younger people. The diagnosis of Type 1 Diabetes can be made throughout childhood but it is more likely below 15 yrs of age.
Type 2 Diabetes (T2DM)	This is the most common type of diabetes. The body produces some insulin, but not enough or the cells cannot use this insulin very well. People can be treated with oral medication, but may also require insulin injections.	This type of diabetes used to be seen only in adults but it is now also occurring increasingly in children and adolescents. It is strongly associated with ageing populations, family history, excess body weight, unhealthy lifestyle- poor dietary habits, lack/low of physical activity, tobacco and alcohol consumption, etc.
Gestational Diabetes (GDM)	Diabetes which occurs among women during pregnancy.	Women during pregnancy, and is associated with a risk of complications during pregnancy and delivery. The children of women with Gestational Diabetes are at an increased risk of Type 2 diabetes in the future.

When is a person at high risk for Diabetes?

- If he/she is overweight (BMI is more than 23kg/m^2).
- If he/she is physically inactive, that is, he or she exercises less than 3 times a week.
- If he/she has high blood pressure.
- If he/she has impaired fasting glucose or impaired glucose tolerance.
- If his/her triglyceride and/or cholesterol levels are higher than normal. (Normal level: Triglyceride - Less than 150 (mg/Dl, Cholesterol – Less than 200 mg/dL).
- If his/her parents/siblings or grandparents have or had diabetes.
- If she delivered a baby whose birth weight was 4 kgs or more.
- If she has had diabetes or even mild elevation of blood sugars during pregnancy.

Common Signs and Symptoms of Type 2 Diabetes

- Frequent urination
- Increased hunger
- Excessive thirst
- Unexplained weight loss
- Lack of energy, extreme tiredness
- Lack of interest and concentration
- Blurred vision
- Repeated or severe infections such as vaginal infections
- Slow healing of wounds, dry or itchy skin
- Impotence in men

Table 4: Criteria for diagnosis of Type 2 Diabetes

	Fasting Glucose	2-hour Post-Glucose Load
	(mg/dl)	(mg/dl)
Diabetes Mellitus	>=126 or	>=200
Impaired Glucose Tolerance	< 126 and	>140 to <200
Impaired Fasting Glucose	>=110 to <126	

*WHO Definition 1999.

Where available, a capillary blood glucose value is also sufficient. Where capillary blood glucose measured by glucometer is used in the fed state (i.e., post food/post glucose/post meal), the >200 mg/dl cut off may be revised to >220 mg/dl.

Screening for Diabetes

ANM will first undertake screening of all adults 30 years of age and above for diabetes. This will take place on a fixed day at the sub-centre level. For cases, where the random blood sugar will be more than the normal range, ANM will refer them to PHC for confirmatory diagnosis. You will support and mentor ANM in the above-mentioned task. At PHC, medical officer will screen the suspected case for the confirmatory diagnosis; based on which a treatment plan will be developed for the patients. Please note that developing a treatment plan is responsibility of a medical officer.

The treatment plan includes not just anti-diabetic medication but also a plan for addressing any modifiable risk factors.

Details of the tests for diagnosing Type 2 Diabetes

The following tests will be done by a laboratory technician at the PHC level and above. Most blood glucose tests actually measure the amount of glucose in the liquid part of your blood called the blood plasma, rather than the amount of glucose in your whole blood. This is called plasma glucose.

1. Fasting Blood Glucose (FBG)

Before taking the blood test, the person should have taken no food for at least 8 hours. They should fast overnight and must not have anything to eat until after the test. The easiest way to do this is to arrange an appointment for the patient to have the blood test first thing in the morning.

2. Random Blood Glucose

Sugar level or blood glucose measured at any time of day without regard to time since the last meal. It does not take into account what the patient has been eating or drinking. It is therefore less sensitive than the other tests. However, it is the easiest to perform.

3. Two- hour venous plasma glucose after ingestion of 75g oral glucose load (Oral Glucose Tolerance Test- OGTT)

The Oral Glucose Tolerance Test (OGTT) is a method which is used to diagnose Type 2 diabetes by measuring how well the body's cells are able to absorb a fixed amount of sugar or glucose.

4. HbA_1c (Glycosylated, or Glycated haemoglobin)

It is a form of haemoglobin in the RBCs. The HbA_1c level is proportional to average blood glucose over the previous two to three months. It is an excellent indicator of how well the patient has managed his/her diabetes over the last four weeks to three months. It is recommended for monitoring blood sugar control in diabetic patients. However, the test is costlier than blood glucose measurement.

American Diabetes Association (ADA) recommends an HbA_1c goal of less than 7% for people with diabetes in general.

What is Hypoglycaemia (Low Blood Glucose)?

Among those with Diabetes a condition called Hypoglycaemia or **low** blood sugar levels can occur. Hypoglycaemia occurs when blood sugar (glucose) level falls below a level of 70 milligrams per decilitre (mg/dl) or less. If not treated, hypoglycaemia can be life-threatening. The only way to know if someone has hypoglycaemia is to check blood glucose. Testing blood sugar levels regularly can help understand when sugar levels are dropping too low.

Symptoms are tremors, nervousness or anxiety, sweating, irritability, confusion, rapid/fast heartbeat, dizziness, hunger, nausea, blurred/impaired vision, headaches, weakness or fatigue, lack of coordination, falls, seizures, unconsciousness and can lead to accidents, injuries, coma and even death.

Some of the reasons for hypoglycaemia are as:

- Missing or skipping a meal.
- Long gap between two meals or delay in eating meals.
- Taking more than recommended dosage of insulin or anti-diabetic drugs.
- Side- effects of some anti-diabetic drugs.
- Increased physical activity.

Hypoglycaemia can be treated by consuming a small amount of sugar-rich foods as soon as symptoms appear. For such an emergency, diabetic patients should be advised to always carry something to eat such as loose sugar, rock candy (*misri*) or toffee, etc.

Management of Hypoglycaemia

If a patient's blood glucose drops below 70 mg/dl, remember the 15/15 rule and treat hypoglycaemia, without any delay.

The 15/15 Rule

1. Check blood glucose level (<70 mg/dl).
2. The patient has to eat or drink **15 grams of carbohydrates (such as sugar-rich foods).** If blood glucose levels cannot be checked at the moment, the patient should be given 15 grams of carbohydrates to be safe. Give any of the following food items to the patient.
   - 5 or 6 pieces of toffee.
   - 1 tablespoon of sugar or honey.
   - 2-3 teaspoons (1 teaspoon is 5 grams) of glucose powder as is or diluted in water.
   - 3-4 teaspoons of sugar/powdered sugar.
   - ½ cup fruit juice or normal cold drink.
3. Wait 15 minutes. Check the blood sugar once again. If the blood sugar level, is still below 70 mg/dl, again eat one of the food items listed above and check blood glucose sugar after 15 minutes.
4. If blood glucose level is still lower than 70 mg/dl or the patient still has symptoms of hypoglycaemia, then the patient should be considered for further management.

Ways to Prevent Hypoglycaemia

- Creating awareness on hypoglycemia.
- Regular blood sugar testing/monitoring.
- Taking correct dosage of medicines that are prescribed by the Medical Officer or a trained medical doctor.
- Eating small and frequent meals.
- Not skipping or delaying meals.
- Checking blood sugar before exercise.
- Not going empty stomach for morning walk.

Please Note: People with diabetes should be advised to always carry one of the above food items with them to avoid hypoglycaemia. Sugar packets, rock candy (*misri*) or toffees, etc are easy to carry. People may also wear/carry some form of identification, mentioning they are diabetics. In addition, people in the community should be made aware of the people living with diabetes in their community. This will help in prompt management in case of emergency situations like hypoglycaemia.

Management of Diabetes

Management of T2DM should be initiated as soon as diagnosis is established even if the patient is asymptomatic. Initial assessment and management of the patients has to be carried out at PHC level. This is responsibility of a medical officer at the PHC.

The medications for the diabetes is to be made available free of cost to patients using government health facilities. These drugs are to be as per essential drug list of the health facility:

- Initial assessment of individuals suspected of having T2DM need to be subjected to risk assessment which include:
  - History and physical examination.
  - Assessment of blood glucose level.

Table 5: Initial Assessment of Diabetic Patients for history and Physical examination

History (Ask for)	Physical Examination (Look for)
Symptoms of hyperglycaemia	Weight
Duration since onset of symptoms	Body Mass Index
Precipitating factors such as recent infections, stress, change in dietary habits or physical activity levels	Waist circumference, Waist-hip ratio
Symptoms of Micro- and Macro-Vascular Complications: visual disturbances, oedema, breathlessness, angina, intermittent claudication, numbness, paraesthesia	Acanthosis nigricans*
Hypertension, pre-existing cardiovascular Diseases	Blood pressure
Drug history	Peripheral pulses
Diet	Feet: calluses, ulcers, prominent veins, oedema, injuries
Physical Activity: type, frequency	Fundus examination
Family History	Cardiovascular system
❖ Diabetes and complications ❖ Age at onset ❖ Cardiovascular disease, if any	Peripheral nervous system Thyroid

*Acanthosis nigricans is a brown to black, poorly defined, velvety hyperpigmentation of the skin, usually present in the posterior and lateral folds of neck, axilla, groin, umbilicus, and other areas. This occur due to insulin spill over (from excessive production due to obesity or insulin resistance) into the skin which results in its abnormal growth, and the stimulation of colour producing cells. The most common cause would be insulin resistance, usually from type-2 diabetes mellitus.

- Presence of CVD risk factors (lipid profile, hypertension).
- End-organ damage (urine for protein/ECG/ fundus examination).

Initial management include

- Pharmacotherapy for the management of hyperglycemia and any other co-morbid conditions e.g. high blood pressure, dyslipidemia etc.
- Therapeutic lifestyle management.
- Diabetes patient Education and counselling.

T2DM: Principles of Management

Therapeutic Lifestyle management (healthy diet and physical activity) accompanied by drug therapy or insulin are the corner stone of diabetes management. Apart from these other concurrent complications should be addressed. The basic principles in the management of Type 2 diabetes are:

- Modify Lifestyle: diet and physical activity.
- Reduce Insulin resistance through reduction in weight, specifically reduction of fat mass.
- Pharmacological treatment (if inadequate control): Metformin/Sulfonylureas.

Pharmacotherapy

Table 6: Dosage and contraindications of Common anti-diabetic medications[5]

Medicine class	Name	Dosage	How it works	When to take
Bigua-nides	Metf-ormin	250mg to 2000mg/day	Lowers the amount of sugar produced by the liver. Helps body use insulin better.	After a main meal
Sulfony-lureas	Gliben-clamide	Glibencla-mide varies from 2.5-20mg/ day given in one or two doses.	Increase the amount of insulin released by pancreas.	30 minutes before meals.

5 Source- Adapted from the Manual for Medical Officer-National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Disease and Stroke (NPCDCS), 2008-2009.

General Guidelines for using oral anti-diabetic agents[6]

The treatment should be individualized and the points mentioned below are only broad based Guidelines. The necessity of diet, exercise and life style modifications needs to be emphasized; in some cases, these measures alone would suffice. When pharmacological treatment becomes necessary, the following points may be considered:

Non-obese people with Type 2 diabetes

In non-obese people with diabetes, start with a sulphonylurea/meglitinide or glitazone. If even after two to four weeks of initiation of treatment, symptoms still persist or blood sugar is not sufficiently controlled then a drug from another group like metformin can be added. If the initial blood sugar levels are very high, the symptoms are very severe or acute complications like ketosis are present, insulin has to be considered for treatment even at the onset, for a brief period.

If the initial assessment shows presence of complications like diabetic retinopathy or nephropathy, this indicates a long period of undiagnosed diabetes and insulin therapy on a continuous basis should be considered.

Obese people with Type 2 diabetes

In obese people with diabetes, the starting drug is ideally metformin.

Similar Guidelines as mentioned above can be used to achieve good metabolic control with addition of other drugs like sulphonylureas/meglitinides or glitazones and/or insulin.

Lean people with type 2 diabetes

In India, many subjects with Type 2 diabetes are lean or low body weight (BMI <18.5kg/m^2). In these people with diabetes, metformin is better avoided and the use of sulphonylureas and glitazones may be considered as first line of management. Quite often, such people with diabetes may require insulin for better control.

With increasing duration of diabetes, most oral anti-diabetic agents tend to be less effective and hence poly-pharmacy becomes inevitable, with use of drugs from multiple classes. However, insulin use should not be delayed and, if and when necessary, insulin should be introduced for tight glycemic control.

Combination of oral drugs with insulin

When the glycemic control is not achieved with the maximum dose of an oral agent/combination therapy, this is called secondary failure to Oral Hypoglycemic Agents (OHA).

It has been the experience of most physicians in India that combination of oral drugs and insulin helps to achieve good control of diabetes. While using combination therapy, the oral drugs may be continued in optimal doses, while intermediate acting/long acting/short acting insulin is added either at bed time or in the morning depending on the blood sugar profile of person with diabetes. However, if indicated, one should not hesitate to use insulin in multiple doses to achieve tight metabolic control.

When to refer to higher facility (CHC/SDH/DH)

- Uncontrolled infections.
- Co-morbid conditions, e.g., Hypertension, CAD, COPD, CKD etc.
- Severe cellulitis.
- Unresponsive UTI or other deep seated infections including bad diabetic foot needing intravenous antibiotics.
- Recurrent UTI not responding to oral antibiotics.
- Presence of ketones in urine.

Diabetes patient education and diet counselling

Patient education on diabetes management and life style modifications is the corner stone of effective diabetes control and management and prevention of complications. At PHC level, nurses/multipurpose health workers can be trained to undertake this activity. At sub-district and district level hospital, dietician/counsellor and nurses can undertake diabetes patient education.

6 Source- Adapted from the Training Module for Medical Officers for Prevention, Control and Population Level Screening of Hypertension, Diabetes and Common Cancer (Oral, Breast & Cervical); National Centre for Disease Control Directorate General of Health Services, MoHFW, GoI, 2017.

Foot care advice to the patients

- Inspect your feet daily for cracks, blisters, infections, and injuries. You may be able to see a problem before you feel it. If you can't see the bottoms of your feet easily, use a mirror. A magnifying glass may help you see better. If you can't check your own feet, have someone else do it for you.
- Cleanse your feet daily as you bathe or shower, using warm water and mild soap. Dry your feet with a soft towel making sure to dry between the toes. Don't use hot water. You may burn your skin as you may not be able to feel the hotness of the water. Moisturize dry skin by using oil. If it causes redness or irritation, discontinue its use and inform your doctor. If you are currently using a cream or lotion that keeps your skin soft and free of cracks, continue using it.
- Clip toenails straight across. Use a nail cutter; don't use a scissor and also smooth down the edges. If you can't easily reach your feet or have thick nails, have someone experienced trim your nails.
- Always wear something on your feet (socks, slippers, shoes) to protect from injury - even in your house.
- Choose soft good shoes. Let them be a size bigger that what you feel is appropriate. Wear socks made of cotton or wool (in winter).
- Treat minor breaks in the skin promptly. Cleanse the area with soap and water, dry, and cover with clean gauze. Observe for signs of infection such as redness, swelling, warmth, pain or drainage. Don't put weight on the foot that has an injury.
- See your doctor to check your feet during your regular visits for diabetes care. Take off your shoes and socks at every visit. For more information and visual guidance visit http://www.healthy-india.org/preventdiabetes5.asp

Eye Care in diabetes

The Retina/fundus of all diabetes patients need to be checked at least once a year by a trained ophthalmologist even if there are no eye symptoms and the vision is 6/6. The patient needs to be accordingly referred for the same to the CHC, where an ophthalmologist is available.

Preconception counselling

- Counselling on pregnancy must start before conception. All women with diabetes must know that they should not conceive till their blood glucose is well controlled for at least 2-3 months before conception as ascertained by HbA_1c. Hyperglycemia at conception increases the risk of complications during pregnancy as well as congenital defects in the foetus.

CHAPTER 5

HYPERTENSION

Hypertension or 'High blood pressure' is a pathological condition which increases the work load on the heart, i.e. heart has to pump harder than normal for blood to get to all parts of the body.

Hypertension is referred to as "silent killer" as it can exist without any warning signs or symptoms.

Based on the aetiology, high blood pressure is of two types:

Primary/essential: Primary or "essential" hypertension has no known cause; however, lifestyle factors may be associated with this condition.

Secondary: Secondary hypertension is caused by some other medical conditions/problem or the use of certain medications. This is less common than primary hypertension. Some of the main causes of secondary hypertension include: kidney diseases: reno-vascular disease and chronic renal disease, endocrine disorders and sleep disorders, some of which are often curable, and many others treatable.

Gestational Hypertension: It is a new onset of hypertension during pregnancy without protein in urine.

Criteria for diagnosing high blood pressure

The table below provides a classification of blood pressure for adults ages 18 and older. The classification is based on consistent elevation during two or more properly measured BP readings in sitting position.

Table 7: Classification of Blood pressure in Adults (Age – 18 years and above)

Category	Systolic	Diastolic
Normal	Less than 120	Less than 80
Pre-hypertension	120-139	80-89
High Blood Pressure		
Stage 1	140-159	90-99
Stage 2	160 or higher	100 or higher

Source : JNC VIII

Risk factors for Hypertension

The following are some common factors that can lead to high blood pressure:

- Advancing Age- The risk of high blood pressure increases with age.
- Family history.
- Overweight or Obesity.
- Unhealthy diet.
- Lack of physical activity (or sedentary lifestyle).
- Tobacco use in any form (smoking and chewing tobacco) and second-hand smoke.
- Excessive alcohol consumption.
- Stress.
- Sleep apnea- Breathing is briefly and repeatedly interrupted during sleep.
- Certain chronic conditions such as kidney and hormone problems, diabetes etc.

Management of Hypertension

Non-Pharmacological therapy: includes life style modification, which can be done on an individual basis. This includes healthy diet, physical activities and avoiding harmful use of tobacco and alcohol.

Pharmacotherapy

Whether a person requires medicines for his high blood pressure and the choice of medicine best for the patient would depend on:

- The blood pressure reading
- Whether the high blood pressure has already affected target organs in the body such as heart, kidneys, eyes and arteries.
- Concurrent medical conditions such as diabetes, heart disease, kidney disease and other risk factors like use of tobacco, obesity and high blood fat levels (lipid profile) etc.

Medication of a patient is responsibility of a MO at the PHC level. The medications for the hypertension is to be made available free of cost to patients using government health facilities. These drugs are to be as per essential drug list of the health facility.

Treatment Goals

- Initial aim should be to obtain blood pressure level less than 140/90 mms of Hg.
- A blood pressure levels of 140/90 mms of Hg or more should be immediately considered for the action.
- Maintain normal blood pressure throughout the person's lives.
- Prevent and control risk factors which could give rise to high blood pressure.

In the Indian context, diuretics (chlorthalidon/ Indapamide), calcium channel blockers (amlodipine) and ACE inhibitors (Ramapril/Perindopril) are relatively cheap. Drug therapy should be started in individuals at the time of diagnosis if they have blood pressure more than 140/90 mm Hg (despite non-pharmacological interventions) or have end organ damage such as protienuria, high blood urea, ECG evidence of left ventricular hypertrophy, presence of heart diseases and evidence of retinopathy.

Therapy can be initiated with any of the three first line drug classes- a Calcium Channel Blocker (CCB), Angiotensin Converting Enzyme Inhibitors (ACEI) or Angiotensin Receptor Blocker (ARB) and/or a thiazide (chlorthalidone/Indapamide). The patient needs to be reviewed after 4 weeks of treatment. In case, his blodd pressure is found >140/90 mm Hg, one more drug needs to be added. Triple combination therapy (ACEI/ ARB+CCB+thiazide) can be given if not controlled. Another drug like beta blocker, aldosterone antagonist or alpha blockers can be added for optimization else a referral to a higher centre may be necessary.

A low dosage combination therapy such as ACEI/ ARB + CCB, ACEI/ARB + thiazide, CCB + thiazide can be given for initiation of therapy. Triple combination therapy (ACEI/ARB+CCB+thiazide) can be given if not controlled. Another drug like beta blocker, aldosterone antagonist or alpha blockers can be added for optimization else a referral to a higher center may be necessary.

Table 8: List of Drugs

S. No.	Class of Drug	Drug	Initiation dose	Maximum dose
A	ACE Inhibitors	Enalapril	5 mg once daily (OD)	10 mg twice daily (BD)
		Ramipril	5 mg OD	10 mg OD
		Lisinopril	5 mg OD	20 mg OD
B	B-Blocker	Atenolol	50 mg OD	100 mg OD
		Metoprolol	25 mg BD	50 mg BD
C	Calcium Channel Blocker	Amlodipine	5 mg OD	10 mg OD
D	Diuretic	Indapamide	1.5 mg OD	2.5 mg OD
		Chlorthalidone	12.5 mg OD	25 mg OD
		Aldosterone antagonist		

Special Situations

- **Chronic Obstructive Pulmonary Disease (COPD):** Avoid beta-blockers.
- If person is confirmed to be hypertensive and is also having diabetes the preferred drug should be ACE inhibitors for treatment of hypertension.
- **Chronic kidney disease (CKD):** ACE-I is recommended if Serum creatinine is <2 mg%, however, it should be initiated only if facilities to monitor serum creatinine and potassium are available. If these are not available then initiate with Amlodipine 5 mg.
- **Coronary Artery Disease (CAD):** Beta-blockers are useful especially if history of angina or recent MI is present.
- **Heart failure**: ACE-I are recommended as the initial drug of choice. Beta-blockers are to be added subsequently.

CHAPTER 6

CANCERS

What is Cancer?

Cancer is a disease caused by uncontrolled division of cells in any part in the human body. Normally the cell growth is kept under control by the body's immune system. It is only when these cells start to divide uncontrollably, forming lumps or growths, that Cancer is caused. Growths like this are called tumours. There are two types of tumours- malignant (cancerous) and benign (non-cancerous) tumours.

A malignant tumour never stops growing and can:

- Spread into the surrounding tissue.
- Destroy the surrounding tissue.
- Cause other tumours to develop.

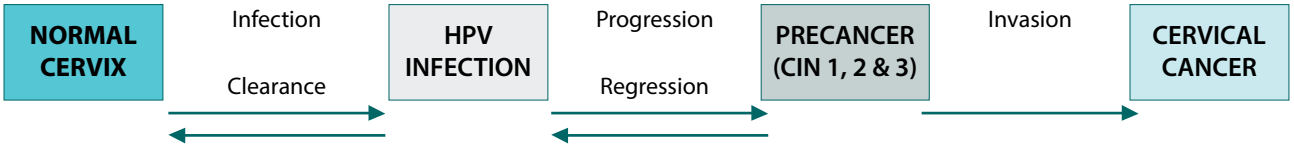
Malignant tumours can be life-threatening. Benign usually do not cause much damage and are not normally life-threatening. The point at which the tumour starts is called the primary site. Cancer develops in several phases depending on the type of tissue affected. There are various kinds of cancers that are prevalent in our country. In this module we are specifically addressing the three most commonly occurring cancers in India- cervix & breast cancers among women and oral cancers among women & men.

These three cancers- cervix, breast and oral cancer together account for approximately 34% of all cancers in India and constitute a public health priority.[13] If these cancers are diagnosed early and treated appropriately, chances of cure and survival are very good. Thus, regular screening programmes which can diagnose cancers at early stages or at precancerous stages are an important preventive health programme. A small percentage of pre-cancerous lesions if not treated, may later develop into cancer.

Table 9: Screening and follow up processes for Common Cancers (Cervix, Breast and Oral)[7]

Cancer type	Age of beneficiary	Methods of screening	Frequency of screening	If positive
Cervical	30-65 years	Visual Inspection with Acetic Acid (VIA)	Once in 5 years	Referred to the CHC/DH/GH for further evaluation and management of pre-cancerous conditions where gynaecologist/trained Lady Medical Officer is available.
Breast	30-65 years	Clinical Breast Examination (CBE)	Once in 5 years	Referred to surgeon at CHC/DH/GH for confirmation using a Breast ultra sound probe followed by biopsy as appropriate.
Oral	30-65 years	Oral Visual Examination (OVE)	Once in 5 years	Referred to Surgeon/Dentist/ENT specialist/Medical officer at CHC/DH/GH for confirmation and biopsy.

Natural history of cervical cancer



7 Source- Operational Framework-Management of Common Cancers. Ministry of Health and Family Welfare, Government of India, 2016.

Burden of common Cancers in India[8]

- In India, it is estimated that the new cancer cases will rise from nearly one million new cases in 2012 to over 1.5 million by 2035.
- Breast cancer has emerged as one of the leading causes of cancer among women (14.3%) in India with 1,44,937 new cases and 70,218 deaths reported in 2012.
- Cervical cancer in India is the second most common cancer in women (12.1%).
- Every year, around 1.23 lakh new women are diagnosed with cervical cancer and 67,500 of these women die of the disease in India.
- Oral cancer accounts for around 7.2% of all cancers in India with 77,003 new cases and 52,067 deaths reported in 2012.

Cervical Cancer

Cervical cancer is the second most common cancer in women worldwide and the most common in women of underdeveloped and developing countries which bear more than 80% of the global burden of the disease. The higher incidence and death rates of cervical cancer in low resource settings are likely to result from the lack of organized cervical screening and inadequate access to treatment. In many developed countries, screening with cervical cytology has resulted in large-scale reductions in cervical cancer incidence and mortality over time. The current estimates indicate approximately 123,000 new cases diagnosed and 67,500 deaths annually in India, accounting to nearly 1/5th of the global cervical cancer deaths.

The primary goal of cervical screening is to prevent cervical cancer. This is achieved by the detection, treatment, and follow-up of preinvasive cervical lesions.

Risk factors for cervical cancer

- Human papillomavirus (HPV) infection.
- Smoking.
- Young age at first sexual activity.
- Multiple sexual partners.
- Unprotected sex or poor sexual hygiene
- Early marriage.
- Early childbirth- in women younger than 17 years.
- Frequent child birth.
- Weakened immune system such as HIV/AIDS.

Although these risk factors increase the chance of developing cervical cancer, many women with these risks do not actually develop this disease.

Common signs and symptoms of cervical cancer

In the early stages, there may not be any symptoms. By the time symptoms appear, the disease may have already spread.

Common symptoms are:

- Vaginal bleeding between periods.
- Menstrual periods that are longer or heavier than usual.
- Postmenopausal bleeding.
- Bleeding after sexual intercourse.
- Pain during sexual intercourse.
- Smelly vaginal discharge.
- Unusual vaginal discharge tinged with blood.
- Backache.
- Lower abdominal pain.
- Fatigue/extreme tiredness.
- Unexplained weight loss.
- Pain in legs.
- Pain during urination.

Natural history of cervical cancer

Human papillomavirus (HPV) is the most common viral infection of the reproductive tract and is the primary underlying cause of cervical cancer. Almost 75% of all sexually active adults are likely to be infected with at least one HPV type at some point in their lives and some may be repeatedly infected. HPV infections usually clear up without any intervention within a few months after acquisition, and about 90% clear within 2 years. A small proportion of infections with certain types of HPV can persist and progress to cancer. There are more than 100 types of HPV, of which at least 14 are known as high risk type that are associated with cancer. Two HPV types (16 and 18) cause 70% of cervical cancers and precancerous cervical lesions. HPV types 6 and 11 which are classified as low risk types cause genital warts.

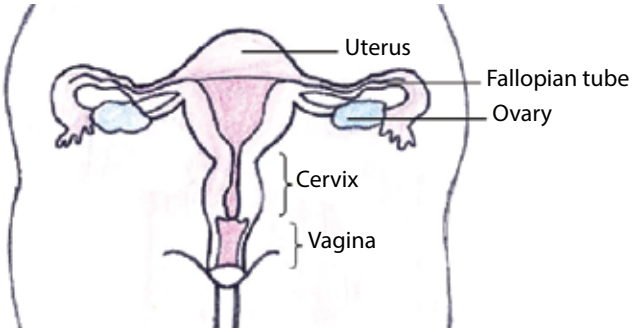
It takes 15 to 20 years for cervical cancer to develop in women with normal immune systems. It can take only 5 to 10 years in women with weakened immune systems, such as those with untreated HIV infection.

Gross anatomy of the uterine cervix

The cervix is the inferior portion of the uterus, separating the body of the uterus from the vagina.

8 Source- Available at- http://globocan.iarc.fr/Pages/fact_sheets_population.aspx (Globocan, 2012).

The average length of the cervix is 3-4 cm. The external opening into the vagina is termed the external os, and the internal opening into the endometrial cavity is termed the internal os. The lower half of the cervix, called portio vaginalis, protrudes into the vagina through its anterior wall, and the upper half, called the supravaginal portion, remains above the vagina. In parous women, the cervix is bulky and the external os appears as a wide, gaping, transverse slit. In nulliparous women, the external os resembles a small circular opening. The endocervical canal, which traverses the endocervix, connects the uterine cavity with the vagina and extends from the internal to the external os. The portion of the upper vaginal cavity that surrounds the portio vaginalis is called the fornix.



The stroma of the cervix is composed of dense, fibro-muscular tissue traversed by the vascular, lymphatic and nerve supplies to the cervix. The arteries of the cervix, derived from internal iliac arteries through the cervical and vaginal branches of the uterine arteries, descend in the lateral aspects of the cervix at 3 and 9 o'clock positions. The veins run parallel to the arteries and drain into the hypogastric venous plexus. The lymphatic vessels from the cervix drain into the common, internal and external iliac nodes, obturator and the parametrial nodes. The nerve supply is derived from the hypogastric plexus. The endocervix has extensive sensory nerve endings, while there are very few in the ectocervix.

Microscopic anatomy

Ectocervix is covered by a pink stratified squamous epithelium, consisting of multiple layers of cells and a reddish columnar epithelium consisting of a single layer of cells lines the endocervix. The intermediate and superficial cell layers of the squamous epithelium contain glycogen. The location of squamocolumnar junction in relation to the external os varies depending upon age, menstrual status, and other factors such as pregnancy and oral contraceptive use.

Squamous metaplasia in the cervix refers to the physiological replacement of the everted columnar epithelium on the ectocervix by a newly formed squamous epithelium from the sub-columnar reserve cells. Transformation zone is the region of the cervix where squamous metaplasia occurs between the original and new squamo-columnar junction. Identifying the transformation zone is of great importance in cervical cancer screening, as almost all manifestations of cervical carcinogenesis occur in this zone.

The squamocolumnar junction appears as a sharp line, due to the difference in the height of the squamous and columnar epithelium. The location of the squamocolumnar junction in relation to the external os is variable over a woman's lifetime and depends upon factors such as age, hormonal status, birth trauma, oral contraceptive use and certain physiological conditions such as pregnancy. The squamocolumnar junction visible during childhood, perimenarche, after puberty and early reproductive period is referred to as the original squamocolumnar junction, as this represents the junction between the columnar epithelium and the original squamous epithelium laid down during embryogenesis and intrauterine life. During childhood and perimenarche, the original squamocolumnar junction is located at, or very close to, the external os. After puberty and during the reproductive period, the female genital organs grow under the influence of estrogen. Thus, the cervix swells and enlarges and the endocervical canal elongates. This leads to the eversion of the columnar epithelium of the lower part of the endocervical canal on to the ectocervix. This condition is called ectropion or ectopy, which is visible as a strikingly reddish-looking ectocervix on visual inspection.

Screening tests for cervical cancer

Screening tests are done in apparently healthy women to diagnose changes in the cervix which are pre-cancerous so that they can be treated and prevented from progressing to cancer.

There are 3 different types of screening tests available:

1. Pap smear test
2. Visual inspection with Acetic Acid (VIA).
3. HPV testing for high-risk HPV types.

In the current population based screening program, VIA is adopted for cervical cancer screening because of the high cost of setting up cytology and HPV testing. Therefore, VIA will be explained in detail in this module.

Visual Inspection using Acetic acid (VIA)

Naked-eye visual inspection of the uterine cervix, after application of 5% acetic acid (VIA) provides simple tests for the early detection of cervical

precancerous lesions and early invasive cancer. The results of VIA are immediately available and do not require any laboratory support.

Acetic acid caused intracellular dehydration and coagulation of protein within abnormal cervical cells. So the abnormal cells will turn white after application of acetic acid.

Instruments and materials required

- Examining table.
- Light source.
- Bivalve speculum (Cusco).
- Instrument tray or container.
- Bottles with normal saline.
- 5% acetic acid (freshly prepared).
- Cotton-tipped - swab sticks.
- Disposible gloves.
- 0.5% chlorine solution for decontaminating.
- Forms and registers for recording the findings.

Preparation of 5% acetic acid: Acetic acid is to be freshly prepared everyday:

Ingredients	Quantity
1. Glacial acetic acid	5 ml
2. Distilled water	95 ml

Preparation: Carefully add 5 ml of glacial acetic acid into 95 ml of distilled water and mix thoroughly.

Storage: Unused acetic acid should be discarded at the end of the day.

Note: It is important to remember to dilute the glacial acetic acid, since the undiluted strength causes a severe chemical burn if applied to the epithelium.

Procedure of VIA examination

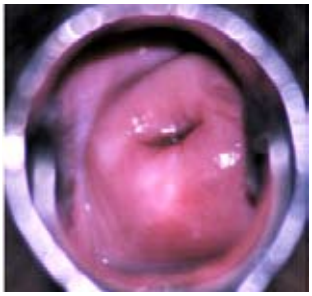
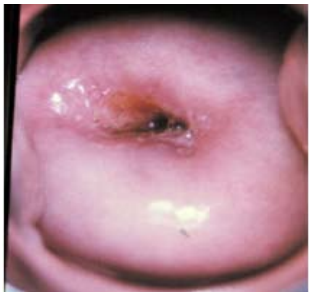
- Explain the screening in detail to the woman. The woman should be reassured that the procedure is painless, and every effort should be made to ensure that she is fully relaxed and remains at ease during testing.
- Written informed consent should be obtained before screening.
- The woman is invited to lie down in a modified lithotomy position on a couch with leg rests or knee crutches or stirrups.
- Gently introduce the speculum and open the blades of the speculum to view the cervix in the presence of good light source.
- Identify the external os, columnar epithelium (red in colour), squamous epithelium (pink) and the squamocolumnar junction.
- Proceed to identify the transformation zone, the upper limit of which is formed by the squamocolumnar junction. (Cervical neoplasias occur in the transformation zone nearest to the squamocolumnar junction).
- Gently, but firmly, apply 5% acetic acid using a cotton swab soaked in acetic acid. The secretions should be gently wiped off. The swabs after use should be disposed of in the waste bucket.
- The curdy-white discharge associated with candidiasis is particularly sticky, and if particular care is not taken to remove it properly, it may mimic an acetowhite lesion, thus leading to a false-positive result.
- After removing the swab, carefully look at the cervix to see whether any white lesions appear, particularly in the transformation zone close to the squamocolumnar junction, or dense, non-removable acetowhite areas in the columnar epithelium.
- The results one minute after application of acetic acid should be reported. Note how rapidly the acetowhite lesion appears and then disappears.

Carefully observe

- The intensity of the white colour of the acetowhite lesion: if it is shiny white, cloudy-white, pale-white or dull-white.
- The borders and demarcations of the white lesion: distinctly clear and sharp or indistinct diffuse margins; raised or flat margins; regular or irregular margins.
- Whether the lesions are uniformly white in colour, or the colour intensity varies across the lesion, or if there are areas of erosion within the lesion.
- Location of the lesion: is it in, near or far away from the transformation zone? Is it abutting (touching) the squamocolumnar junction? Does it extend into the endocervical canal? Does it occupy the entire, or part of, the transformation zone? Does it involve the entire cervix (which usually indicates early preclinical invasive cancer)?
- Size (extent or dimensions) and number of the lesions.

Reporting the Outcome of VIA

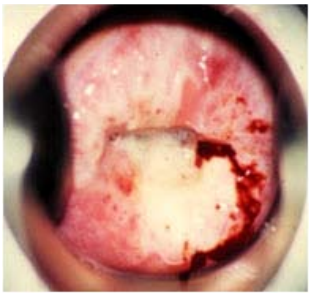
VIA negative (-)

VIA screening is reported as negative in the case of any of the following observations:

- No acetowhite lesions are observed on the cervix.
- Polyps protrude from the cervix with bluish-white acetowhite areas.
- Nabothian cysts appear as button-like areas, as whitish acne or pimples.
- Dot-like areas are present in the endocervix, which are due to grapelike columnar epithelium staining with acetic acid.
- There are shiny, pinkish-white, cloudywhite, bluish-white, faint patchy or doubtful lesions with ill-defined, indefinite margins, blending with the rest of the cervix.
- Angular, irregular, digitating acetowhite lesions, resembling geographical regions, distant (detached) from the squamocolumnar junction (satellite lesions).
- Faint line-like or ill-defined acetowhitening is seen at the squamocolumnar junction.
- Streak-like acetowhitening is visible in the columnar epithelium.
- There are ill-defined, patchy, pale, discontinuous, scattered acetowhite areas.

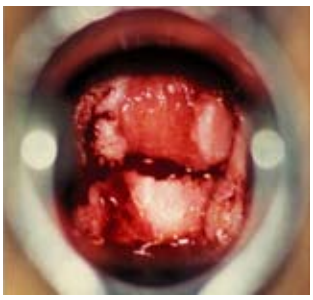
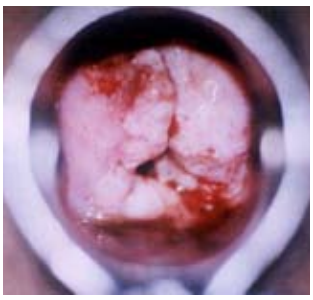
VIA positive (+)




The VIA test outcome is reported as positive in any of the following situations:

- There are distinct, well-defined, dense (opaque, dull- or oyster-white) acetowhite areas with regular or irregular margins, close to or abutting the squamocolumnar junction in the transformation zone or close to the external os if the squamocolumnar junction is not visible.
- Strikingly dense acetowhite areas are seen in the columnar epithelium.
- The entire cervix becomes densely white after the application of acetic acid.
- Condyloma and leukoplakia occur close to the squamocolumnar junction, turning intensely white after application of acetic acid.

VIA positive, invasive cancer

The test outcome is scored as invasive cancer when:

- There is a clinically visible ulceroproliferative growth on the cervix that turns densely white after application of acetic acid and bleeds on touch.

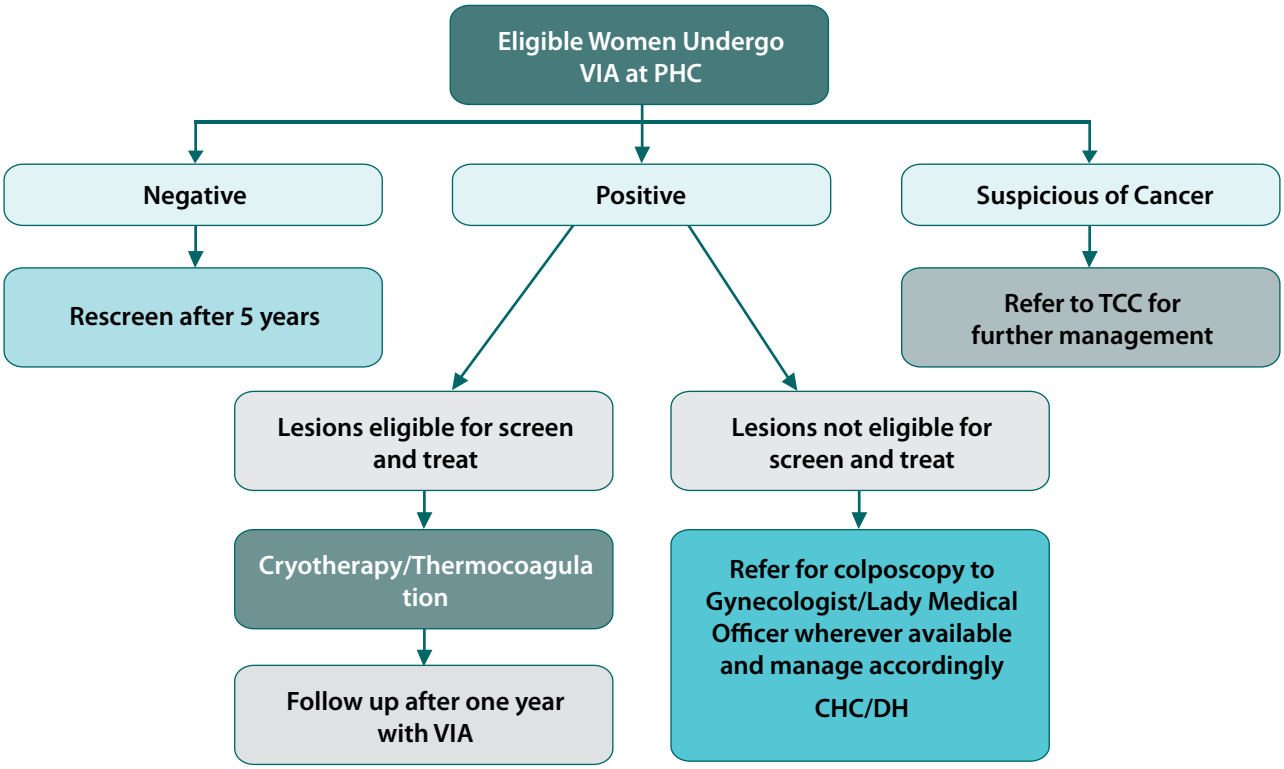
Treatment of Via Positive Cases in the Same Visit: 'Screen-and-Treat' Approach

Adding a diagnostic step after screening, before treatment of pre-cancer, can result in high loss to follow-up because additional patient visits are required as well as a longer time interval between screening and treatment. To reduce such loss to follow-up, the screen-and-treat approach has been developed and this strategy is increasingly being adopted worldwide. This approach eliminates the extra visits and time required for the diagnostic step.

VIA-positive women are eligible for cryotherapy/ thermo coagulation if:

- Entire lesion is visible on ectocervix.
- Lesion is not extending to the endocervical canal or to vagina.

Algorithm for 'Screen-and-Treat' approach



- Lesion is occupying less than 75% of the ectocervix.
- There should be no evidence or suspicion of cancer or glandular abnormality.

Women who are diagnosed as VIA positive and who are eligible for ablative therapy as per the criteria mentioned above, could be treated using cryotherapy/thermo coagulation in the same visit.

These women should be advised to come for follow up after one year to the health facility where VIA should be repeated during this follow up visit to check for the remission status.

Cryotherapy for the Treatment of VIA Positive Lesions

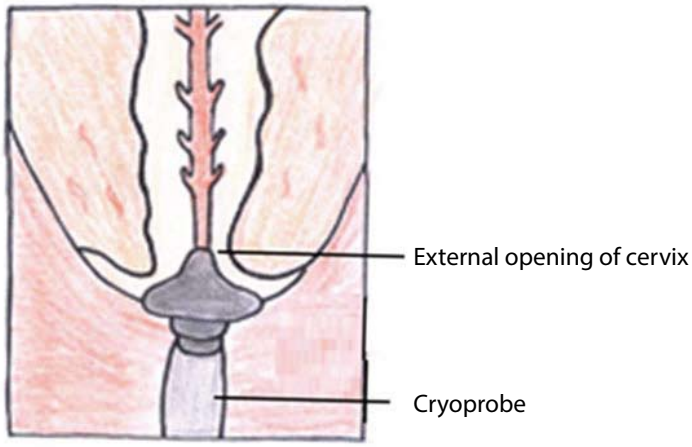
Cryotherapy is the freezing of the abnormal areas of the cervix by the application of a very cold probe. It takes only a few minutes and has no major side effects. The compressed gas like nitrous oxide (N_2O) or carbon dioxide (CO_2) is delivered on to the surface of ectocervix through specially designed probes known as cryoprobes.

Equipment and consumables required

- Examination table
- Light source
- Self retaining bi-valved vaginal speculum.
- Disposable gloves
- Cotton swabs for wiping the cervix.
- Normal saline solution.
- Dilute Acetic acid (5%) solution (freshly prepared).
- Cryosurgery unit with adequate gas supply:
  - Cryogun
  - Cryoprobes
  - Gas conveying tube
  - Pressure gauge
  - Gas cylinder connector

Steps of performing Cryotherapy

- Explain the procedure, and why it is important to return for further management as requested.
- Ensure that the woman has understood and obtain informed consent.
- Insert the speculum and expose the cervix properly.
- Apply 5% acetic acid to outline the abnormality and wait for a minute.
- Choose an appropriate size cryoprobe that adequately covers the lesion.
- Apply the cryoprobe tip at the external os of the cervix.



- Ensure that the vaginal wall is not in contact with the cryoprobe or you may cause a freezing injury to the vagina.
- Check the pressure inside the gas tank. It should be in the green zone as indicated in the pressure gauge of most of the cryotherapy models.
- Release the gas by pressing the trigger on the cryogen and hold it for 3 mins.
- You will observe the ice forming on the tip of the cryoprobe and on the cervix. When the frozen area extends 4–5 mm beyond the edge of the cryoprobe, freezing is adequate.
- Release the trigger and allow thawing for 5 minutes. Repeat freezing for 3 more minutes.
- After second freezing, allow time for thawing. Do not pull cryoprobe till it comes out on its own.
- Gently remove the cryoprobe and remove the speculum after careful inspection of the cervix.
- Examine the cervix for bleeding. If bleeding is noted, apply Monsel's paste. Do not pack the vagina.
- Document treatment completion in individual case record form.
- Provide her the date for next follow up and emphasize on the importance of it.

Advise on post-treatment care and follow up

- Provide a sanitary pad
- The woman should be told that she may experience excessive watery discharge for upto 4 weeks. She should not get worried about it.
- Instruct the woman to abstain from intercourse for 4 weeks.
- Avoid douching or use of tampon for 4 weeks.
- Inform her of possible complications and ask her to return immediately if she notes:
  - Fever with temperature higher than 38°C lasting for more than 48 hrs.
  - Severe lower abdominal pain.
  - Foul-smelling or pus-like discharge.
  - Bleeding for more than two days or bleeding with clots.

Thermo-Coagulation (Cold Coagulation)

Thermo-coagulation is a safe and acceptable procedure used as an alternative to cryotherapy for treatment of VIA positive lesions. A probe heated to 100°C destroys by direct contact the abnormal zone of the ectocervix (destructive therapy), and does not require anesthesia. Multiple overlapping applications may be used to cover the entire lesion.

Equipment and consumables necessary for Thermocoagulation

- Thermocoagulator unit (as shown in the figure above).
- Metallic probe
- Wire for electrical connection.
- Light source
- Instrument tray containing:
  - Self retaining bivalve speculum.
  - Disposible gloves
  - Sterile cotton swabs, cotton tipped swabs.
  - Dilute Acetic acid (5%) solution (freshly prepared).

Steps of Thermocoagulation procedure

- Expose the cervix using the self-retaining speclum.
- Focus light source for clear visualization of cervix.
- Apply 5% acetic acid to outline the abnormality and wait for a minute.
- Set the Thermocoagulator at 100°C.
- Apply the heated thermocoagulator probe on the area to be treated on ectocervix and heat for 45 seconds at 100°C.
- Switch off the thermocoagulator unit and gently remove the probe taking care not to touch the vulva or vagina with the probe.
- Remove the speculum after careful inspection of the cervix. Do not pack the vagina.
- Document treatment completion in individual case record form.
- Provide her the date for next follow up and emphasize on the importance of it.

Possible side effects: Thermocoagulation is well tolerated. However following symptoms may be experienced rarely:

- Mild pelvic pain.
- Watery discharge, spotting or light bleeding for 2 weeks.
- Other side effects are rare. (Infection, very rarely cervical stenosis).

Advise on post-treatment care and follow up

- Provide a sanitary pad
- The woman should be told that she may experience excessive watery discharge for upto 4 weeks. She should not get worried about it.
- Instruct the woman to abstain from intercourse for 4 weeks.
- Avoid douching or use of tampon for 4 weeks.

- Inform her of possible complications and ask her to return immediately if she notes:
  - Fever with temperature higher than 38°C lasting for more than 48 hrs.
  - Severe lower abdominal pain.
  - Foul-smelling or pus-like discharge.
  - Bleeding for more than two days or bleeding with clots.

Referral of VIA Positive Lesions not Eligible for Cryotherapy/Thermo Coagulation

Lesions which are not amenable for treatment by ablative methods using cryotherapy or thermo coagulation should be referred to the nearest facility where gynecologist is available for performing colposcopy.

Colposcopy

Colposcope is an instrument that uses a light and a low-powered microscope to make the cervix appear much larger and colposcopy is a procedure that involves examination of the cervix, vagina and vulva with the help of Colposcope. A colposcope has a powerful light source for illumination of the area to be examined and a variable magnification ranging from 4 times to 25 times. Colposcopy helps in differentiating between normal, benign and cancerous lesions of cervix, directing biopsy from the suspicious area on the cervix and in taking treatment decisions.

Binocular colposcope

Video colposcope

Common Indications of Colposcopy

- Positive VIA or any other cervical cancer screening test.
- Suspicious looking cervix.
- Confirmation of lesions prior to treatment.
- Women with symptoms suggestive of invasive cancer e.g., postcoital bleeding, postmenopausal bleeding, menorrhagia, irregular PV bleeding etc.
- Follow up of women after treatment .

Follow up after treatment for cervical precancers

Women with low-grade CIN have a low potential for developing cervical malignancy, while those with high-grade lesions are at higher risk of progression to malignancy.

As per ASCCP guidelines, co-testing (cytology plus Hr-HPV test) at 12 months and 24 months is recommended for women treated for CIN. If both co-tests are negative, retesting in 3 years is recommended. If any test is abnormal, colposcopy with endocervical sampling is recommended. If all tests are negative, routine screening is recommended for at least 20 years, even if this extends screening beyond 65 years of age.

In facilities where cytology and HPV testing are not available, VIA testing once in a year is suggested in the present guidelines. If at any point, VIA is positive, colposcopy is recommended.

Breast Cancer

Breast cancer is a group of cancer cells (malignant tumor) that develops from the cells of the breast, it is the commonest cancer among women all over the world.

Risk factors for Breast Cancer

- Women are more affected than men. Men can have breast cancer, too, but this disease is about 100 times more common in women than in men.
- Family History
- Early onset of menstrual period (before age 12 years).
- Late age at first child birth (after age 30 years).
- No pregnancy- never having a full-term pregnancy.
- Shorter duration or no breastfeeding.
- Late menopause (after age 55 years).
- Previous treatment using radiation therapy.
- Being overweight/obese especially after menopause.
- Smoking and second-hand smoke.
- Lack of physical activity.
- Consumption of alcohol.
- Using combination hormone therapy after menopause - Hormone therapy with estrogen (often combined with progesterone) during/ and after menopause for more than five years raises the risk for breast cancer.

Although these risk factors increase the chance of developing breast cancer, many women with these risks do not develop this disease.

Breast awareness: The first person to detect any lump in the breast is the woman herself which is by teaching the woman to be a ware of any of the following signs at the earliest possible :

- A change in size
- A nipple that is pulled in or changed in position or shape.
- A rash on or around the nipple.
- Discharge from one or both nipples.
- Puckering or dimpling of skin.
- Lump or thickening in the breast.
- Constant pain in the breast or armpit.

In case a woman notices any such change, she should promptly visit the health centre or health professional.

All women >30 years will be received by the Staff Nurse/ANM at the screening centre, will be provided a pre-procedure counselling, and then screened using Clinical Breast Examination (CBE). Clinical Breast Examination is to be performed by a trained physician or a nurse or an ANM.

Breast Self-Examination (BSE)[9]

Most breast lumps are found by women themselves. By examining her breasts every month, a woman will know how her breasts normally look and feel. If there is a change in her breasts, she will be able to see it and let her healthcare provider know. Teaching women how to examine their breasts every month and encouraging them to do so are important to maintaining good health.

Instructions for Breast Self-Examination

When to Examine Your Breasts

- It is best to examine your breasts **7–10 days after the first day** of the menstrual period. (This is the time when the breasts are less likely to be swollen and tender). **You should examine your breasts every month, even after your menstrual period has stopped forever.** If you are no longer menstruating, you should pick the same day each month (e.g., the first day of the month) to examine your breasts.

  Breast self-examination can be done after bathing or before going to sleep. Examining your breasts with wet hands and finger pads as it will allow easy movement over skin.

How to Examine Your Breasts

First, **look** at your breasts.

Stand in front of a mirror with your arms at your sides and look for any changes in your breasts. Note any changes in their size, shape or skin colour or if there is any puckering or dimpling.

Look at both breasts again, first with your arms raised above your head and then with your hands pressed on your hips to contract your chest muscles. Bend forward to see if both breasts hang evenly.

9 Source: Adapted from Training guidelines for Breast and Cervical cancer screening and Management, MoHFW, GoI.

Gently squeeze each nipple with the thumb and index finger to look for any discharge.

Then, **feel** your breasts.

You may examine your breasts while standing up or lying down. If you examine your breasts while lying down, it will help to place a folded towel or pillow under the shoulder of the breast you are examining.

Raise your left arm over your head. Use your right hand to press firmly on your left breast with the flat surface (fat pads) of your three middle fingers. Start at the top of the left breast and move your fingers around the entire breast in a large spiral or circular motion. Feel for any lumps or thickening. Continue to move around the breast in a spiral direction and inward toward the nipple until you reach the nipple.

Be sure to check the areas between the breast and the underarm and the breast and the collarbone.

Raise your right arm over your head and repeat the examination for the right breast.

What to Look for When Examining Your Breasts

A change in the size or shape of the breast.

A puckering or dimpling of the breast skin.

A lump or thickening in or near the breast or underarm area. If the lump is smooth or rubbery and moves under the skin when you push it with your fingers, do not worry about it. But if it is hard, has an uneven shape and is painless, especially if the lump is in only one breast and does not move even when you push it, you should report it to your healthcare provider.

If your breasts are usually lumpy, you should note how many lumps you feel and their locations. Next month, you should note if there are any changes in the size or shape (smooth or irregular). Using the same technique every month will help you know if any changes occur.

Any nipple discharge that looks like blood or pus, especially if you are not breastfeeding, should be reported to your healthcare provider.

There may be some discharge from one or both breasts for up to a year after having a baby or stopping breastfeeding.

Clinical Breast Examination (CBE)[10]

Having regular breast examinations is an important part of improving every woman's health. They can help identify problems before a woman has any symptoms and provide an opportunity for early treatment or prevention (e.g., breast cancer). These examinations also give the healthcare provider the opportunity to talk with the woman about her health and allow appropriate counselling if her lifestyle puts her health at risk. The efficacy of CBE is dependent upon a number of factors including proper positioning of the lady, thoroughness of the search and the area covered and use of a consistent pattern of search.

The purpose is to look at the breasts and check for differences in shape or size or other abnormalities.

Tips When Performing Breast Examinations

Be sensitive to the woman by giving her opportunities to express any concerns before and during the examination.

Always respect the woman's sense of privacy (e.g., draw the curtains around the examining table, close the door or cover the window in the examination room).

Speak in a calm, relaxed voice at all times and encourage the woman to ask questions at any time.

If the woman is anxious, assure her that you will do your best to make the examination comfortable.

Throughout the examination, approach the woman slowly and avoid any sudden or unexpected movements.

Do not rush through the examination. Perform each step gently and ask her if she is having any discomfort during any part of the examination. Be aware of her facial expressions and body movements as indications that she is uncomfortable.

Always take into consideration any cultural factors when deciding what clothing the woman should remove. Have a clean sheet or drape to cover the woman's breast if needed.

10 Source: Adapted from Training guidelines for Breast and Cervical cancer screening and Management, MoHFW, GoI.

Knowing that the examinations will be performed by a caring and competent provider may encourage the woman to continue coming to the clinic for her reproductive health needs.

These examinations should be performed in a clean, well-lit, private examination or procedure room that has a source of clean water. A female assistant should be available to accompany the woman when a male clinician is the examiner.

Getting Ready

- Tell the woman you are going to examine her breasts.
- This is a good time to ask if she has noted any changes in her breasts and whether she does monthly breast self-examinations. Tell the woman that you will show her how to do a breast self-examination before she leaves.
- Wash your hands thoroughly with soap and water and dry them with a clean, dry cloth or allow them to air dry before beginning the examination.
- If there are open sores or nipple discharge, put new examination or high-level disinfected surgical gloves on both hands.
- Ask the woman to undress till the waist. With the woman undressed from the waist up, have her sit on the examining table with her arms at her sides.
- Examine both in sitting and lying down position.

Performing a Breast Examination

Steps of examination - CBE involves two main parts:

- **Inspection** to identify physical signs of breast cancer.
- **Palpation** which involves using the finger pads to physically examine all areas of breast tissue including lymph nodes (underarm area) to identify lumps.

Inspection: In the sitting position first visually inspect the breast, initially when woman is sitting up right with arms on her hips, and then with her arms raised over head **(Figures 6.1 and 6.2).**

Figures 6.1 and 6.2: Inspection of the breasts

Note any change in symmetry of breast shape**,** size, skin changes – skin dimpling or retraction or ulceration the level of both nipples, retraction of nipple(s), inverted nipple.

Look at the breasts for shape and size (Figure 6.3). Note any difference in shape, size, nipple or skin puckering or dimpling (Figure 6.4). Although some difference in size of the breasts is normal, irregularities or difference in size and shape may indicate masses. Swelling, increased warmth or tenderness in either breast may suggest infection, especially if the woman is breast feeding.

Look at the nipples and note their size and shape and the direction in which they point (e.g., do her breasts hang evenly?). Also check for rashes or sores and any nipple discharge.

Have the woman first raise her arms over her head (Figure 6.5a) and then press her hands on her

Figure 6.3: Appearance of Breasts

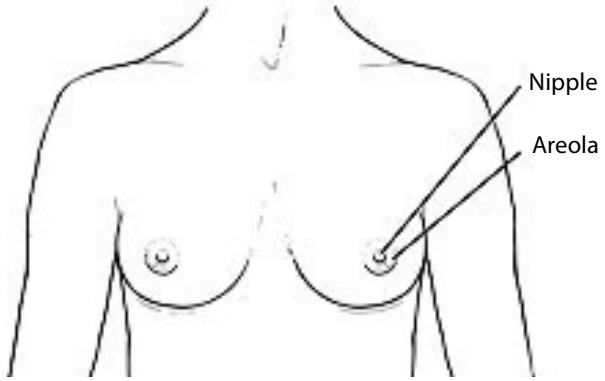
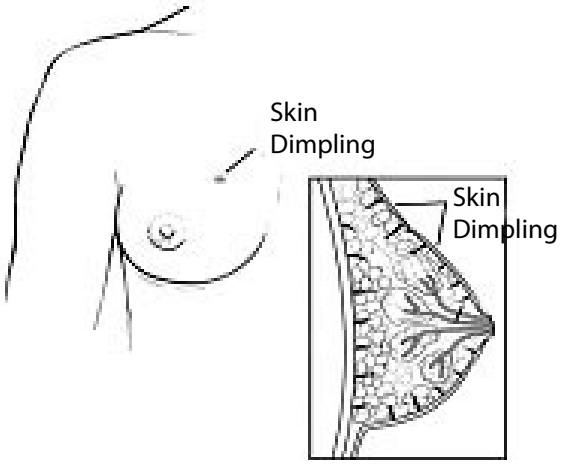


Figure 6.4: Breast Puckering or Dimpling



hips to contract her chest wall (pectoral) muscles (Figure 6.5b). In each position, inspect the size, shape and symmetry, nipple or skin puckering or dimpling of the breast and note any abnormalities. (These positions will also show skin puckering or dimpling if either is present.) Then have the woman lean forward to see if her breasts hang evenly (Figure 6.5c).

Palpation

Have the woman lie down on the examining table.

Placing a pillow under her shoulder on the side being examined will spread the breast tissue and may help in examining the breast (Figure 6.6).

Figure 6.6: Woman in Lying Down Position

Place a clean sheet or drape over the breast you are not examining.

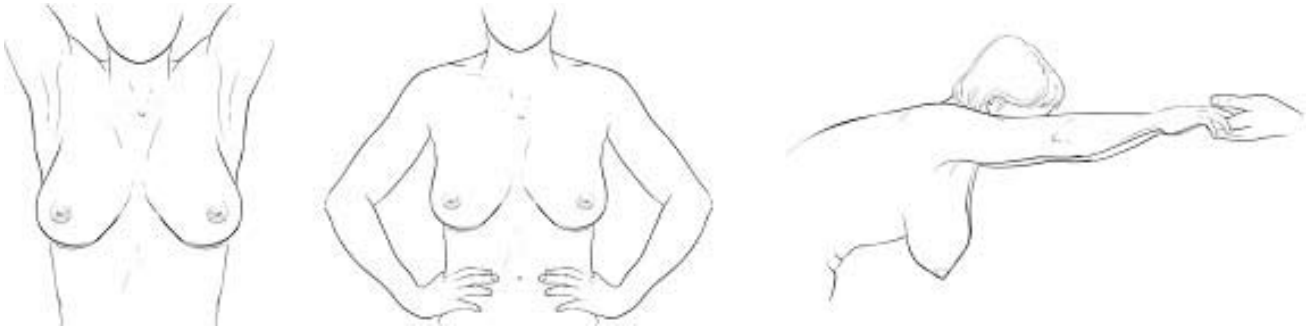
Place the woman's left arm over her head. Look at the left breast to see if it looks similar to the right breast and whether there is puckering or dimpling.

Use "Dial of clock method" for palpation, first use the finger pads of the middle three fingers to palpate the entire breast, in overlapping circular motions, one area at a time. Repeat both parts of the examination on both the left and rights breasts.

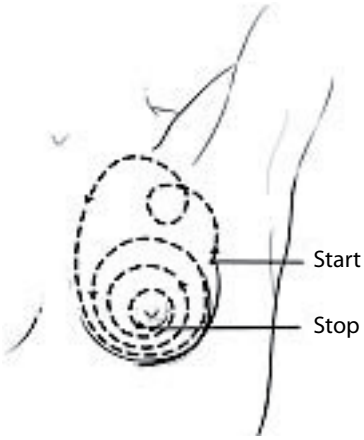
- The finger pads of middle three fingers should be used to palpate the breast in circular motion
- Palpation pressure
  - Light pressure for superficial breast tissue.
  - Medium pressure for intermediate layer.
  - Deep pressure for tissue close to chest wall .

Using the pads of your three middle fingers (Figure 6.7a), palpate the breast using the spiral

Figures 6.5a, b and c. : Appearance of Breasts (left to right): Arms over head, Hands on Hips, Leaning Forwards



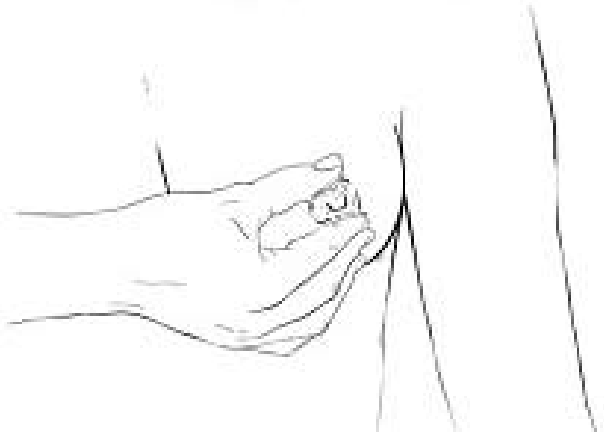
Figures 6.7a and b: Spiral technique of breast examination



technique. Start at the top outermost edge of the breast (Figure 6.7b). Press the breast tissue firmly against the ribcage as you complete each spiral and gradually move your fingers toward the areola. Continue this until you have examined every part of the breast. Note any lumps or tenderness.

Using the thumb and index finger, **gently** squeeze the nipple of the breast (Figure 6.8). Note any discharge: clear, cloudy or bloody. Any cloudy or bloody discharge expressed from the nipple should be noted in the woman's record. Although it is normal to have some cloudy discharge from either or both breasts up to a year after giving birth or stopping breastfeeding, rarely it may be due to cancer, infection or a benign tumour or cyst. Repeat these steps for the right breast.

Figure 6.8: Checking for Nipple Discharge (Left Breast)



If there is any doubt about your findings (e.g., whether there is a lump) repeat the steps with the woman in a sitting position with her arms at her sides.

To palpate the tail of the breast, have the woman sit up and raise her left arm to shoulder level. If needed, have her rest her hand on your shoulder. Press along the outside edge of the pectoral muscle while gradually moving your fingers up into the axilla to check for enlarged lymph nodes or tenderness (Figure 6.9). It is essential to include the tail of the breast in the palpation because this is where most cancer occurs.

Note any discharge from the nipple(s), colour of the discharge, swelling/lumps, consistency of the lumps, swelling in the armpit (axillary area), above the collar bone (supraclavicular area) and root of the neck (infraclavicular area).

Figure 6.9: Checking the Axilla (Left Breast and Right)

Repeat this step for the right side.

After completing the examination, have the woman dress herself. Explain any abnormal findings and what, if anything, needs to be done. If the examination is entirely normal, tell her everything is normal and healthy and when she should return for a repeat examination (i.e., annually or if she finds any changes on breast self-examination).

The optimal time for a CBE in a premenopausal woman is 5-10 days after the onset of menses, avoiding the week before the period is preferable. Postmenopausal women may have CBE performed at any time. On average, the time required to perform a CBE ranges is 6 to 8 minutes

Record your findings

Interpretation

The results of CBE will be interpreted in the following ways:

- **Normal/negative:** No abnormality on visual inspection or palpation.
- **Abnormal:** Definite asymmetric findingon either visual inspection or palpation. Presence of lump(s) in the breast, any swellings in the armpit, recent nipple retraction or distortion, skin dimpling or retraction, ulceration, any nipple discharge.

Documentation

- Properly document the findings in the screening form with date of next follow up & hand over to the women.
- Maintain record in register.

After performing the breast examination, write the findings in the woman's record. An example of the findings from a normal examination is shown below:

Breasts: Appeared normal. No nipple discharge. No lumps or tenderness found during palpation. Axilla normal.

Terms Used to Describe the Findings

Specific terms used to describe the findings are listed below. When recording the findings, use as many of these terms as possible so that the woman's record will have enough detail.

Shape Is there any difference in the shape of the breasts?

Skin What does the skin look like? Is it smooth, puckered or dimpled?

Nipple Discharge Is there any abnormal fluid coming from the nipples? Discharge is described by its colour, thickness, odour and amount.

Mass or Lump A group of cells that adhere to each other, maybe the result of an abscess, cyst, or benign or malignant tumor.

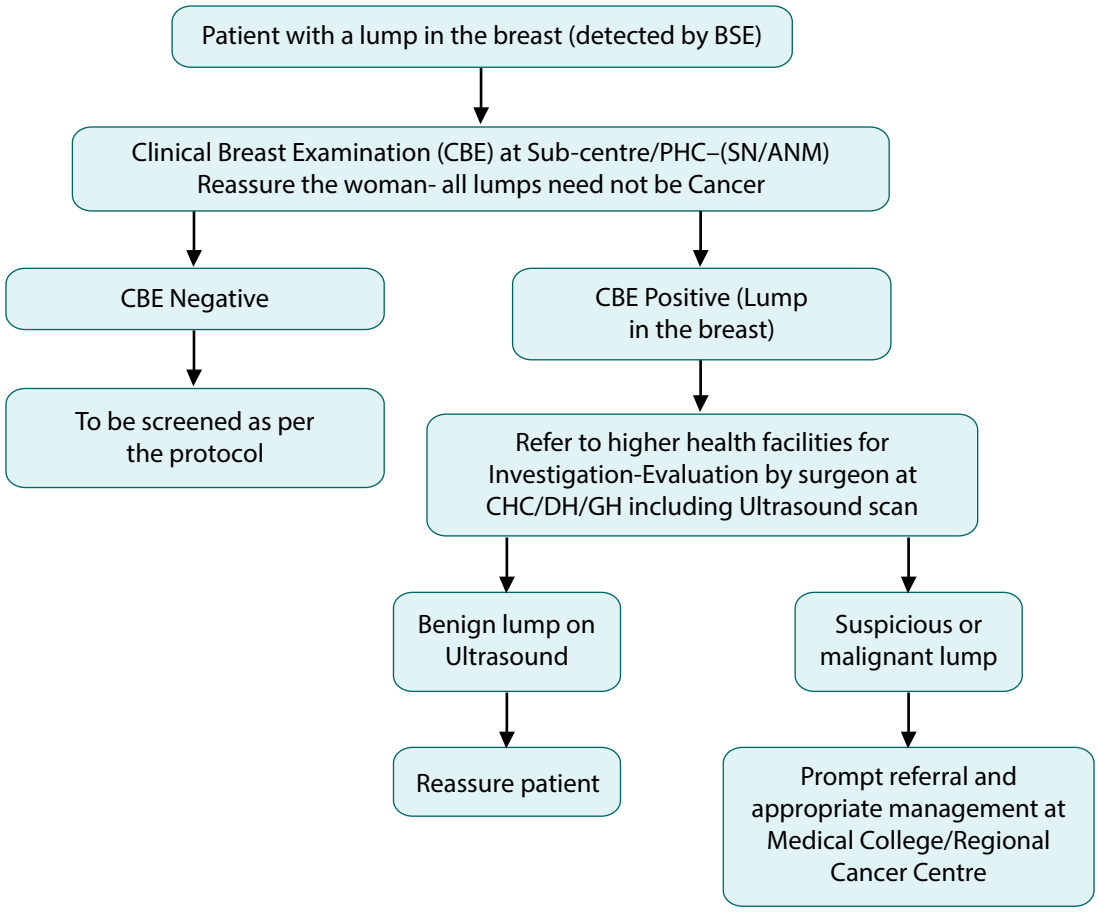
Size How big (cm) is the mass? If the mass is round, what is the diameter?

Consistency What does the mass or lump feel like? Is it firm, soft, fluid-filled or hardened?

Mobility When palpated, is the mass movable or does it stay fixed? Mobility is usually defined in terms such as fixed (does not move on palpation), freely mobile (mobility on palpation) and limited mobility (some movement on palpation).

Management of Breast Cancer

Figure 2: Flowchart showing the Screening and Management of Breast Cancer



Key Messages for Breast Cancer	Key Messages for Cervical Cancer
Breast cancer is one of the major causes of death and illness among women in the age group of 40 to 60 years. It may occur in women of younger age also.	Cervical cancer (cancer of the mouth of the uterus) is fourth common cause of death due to cancers in women of age group 30-60 years. It may occur in women of younger age also.
Any women can have this disease but if the woman has a family history of cancer in the breast, ovary and/or colon among the mother, sister of either mother or father's side; or has had breast cancer or breast lesion in the past, she is more at risk of developing breast cancer.	Women who have sexually transmitted diseases such as HPV, HIV infections, unsafe sex with multiple sexual partners, repeated HPV infections, initiate sexual activity before age 20, mother or sister with cervical cancer, smoking, previous abnormal pap test are more at risk of developing cervical cancer. It is the cancer of the mouth of the uterus.
This can be detected by simple screening like breast self-examination and clinical breast examination and is easily treatable completely in the early stages.	This can be detected by simple screening tests like looking at the cervix using acetic acid (VIA) and treating visible minor precancerous lesions in the same visit-'Single Visit Approach'. VIA is non-invasive, easy to perform, inexpensive and provides immediate results for decisions and actions for treatment.

Key Messages for Breast Cancer	Key Messages for Cervical Cancer
Clinical breast examination (at PHC/CHC) plus other advanced tests like mammography, ultrasound and biopsy to confirm and treat the disease can be done at district hospital level, medical colleges and tertiary hospitals.	VIA and cryo treatment (at PHC/CHC) plus diagnosis of bigger and suspicious lesions by advanced tests like biopsy to confirm and treat the disease can be done at district hospital level, medical colleges and tertiary hospitals.
It is mandatory to have clinical breast examination done for screening by a trained provider at the facility even after doing breast self-examination.	The development of cancer from the precursor lesions takes a long time almost 10 years, hence screening helps to identify and treat the disease in its early stages completely.
Warning signs: If you notice dimpling or puckering of the skin of one or both breast, increase in size of one breast, bloody or serous discharge from the nipples, any lumps identified on breast self-examination immediately tell the ASHA and go to the facility for clinical breast examination.	**Warning signs:** If you have bleeding during or after coitus, or foul smelling pus like or blood stained discharge, immediately tell the AHSA and go to the facility for screening for cervical cancer.
Treatment is available for advanced disease for both breast and cervical cancers also through surgery, chemotherapy and radiotherapy at higher level facilities at the district level. ❖ Treatment of advanced disease is very expensive and is for life long with unpredictable results. ❖ Breast and cervical cancers in their advanced stages cause a lot of pain and discomfort to the woman and lot of helplessness and sadness for the family. ❖ There is heavy drain of the family funds due to prolonged and expensive treatment.	
It is better to prevent the disease by having regular screening and detect breast and cervical cancers early for complete cure as most precancerous lesions do not have any symptoms.	
Some lifestyle practices help to prevent breast cancer such as breast feeding more than 6 months after delivery, regular physical activity, weight control, avoiding drinking alcohol.	Safe sex with single partner, treatment of the sexually transmitted infections, avoid smoking help to prevent cervical cancer.

Oral Cancer

Oral cavity cancer, or oral cancer is the cancer that occurs in the oral cavity. The oral cavity includes the lips, the inside lining of the lips and cheeks (buccal mucosa), the teeth, the gums, the front of the tongue, the floor of the mouth below the tongue, and the bony roof of the mouth (hard palate). Oral cancer is both preventable and curable. There is usually a long natural history and most cases of oral cancer arise from pre-cancerous lesions. Therefore, there is ample opportunity for intervention before actual malignancy develops. Also oral cancer responds well to treatment if detected early. It is a common cancer in India because of the high prevalence of tobacco chewing.

Risk factors for Oral Cancer

- Oral cancer is twice as common in men as in women because of increased use of tobacco/ alcohol.
- People with certain syndromes caused by inherited defects in certain genes have a high risk of mouth and throat cancer.
- Tobacco consumed in any form-smoking and chewing tobacco products.
- Chewing betel quid (paan), which is made up of areca nut (*supari*) and lime (*chuna*) wrapped in a betel leaf, chewing gutka-a mixture of betel quid and tobacco.
- Alcohol intake
- Alcohol intake and consumption of tobacco together.
- Weakened Immune System-more common in people who have a weak immune system.
- Human Papilloma Virus (HPV).
- Poor oral hygiene.
- Sharp teeth and ill-fitting dentures.

Chronic exposure to these risk factors causes changes in the oral mucosa and these changes are visible as pre-cancerous lesions. Over time, malignancy may develop in these lesions.

Common symptoms of Oral Cancer

- Mouth ulcers that persist for more than three weeks.

- Persistent pain in the mouth.
- A lump or thickening in the cheek
- A white or red patch on the gums, tongue, tonsil, or lining of the mouth
- A sore throat or a feeling that something is stuck in the throat
- Difficulty in chewing or swallowing
- Difficulty in moving the jaw or tongueDifficulty in tolerating spicy foods.
- Bleeding or numbness of the tongue or other area of the mouth.
- Swelling of the jaw that causes dentures to fit poorly or become uncomfortable.
- Loosening of the teeth or pain around the teeth or jaw.
- Changes in voice or having speech problems.
- A lump or mass in the neck
- Weight loss
- Constant bad breath
- Excessive salivation
- Repeated biting of cheeks because of sharp teeth

Many of these symptoms can also be caused by factors other than cancer. So, it is very important to see a health professional or dentist if any of these conditions lasts more than 2 weeks so that the cause can be found and treated.

Screening for Oral Cancer

Many pre-cancerous conditions and cancers of the oral cavity can be found early during routine screening by self-exam or by a health professional. Regular dental checkups that include an exam of the entire mouth are important in finding oral cancers (and pre-cancerous conditions) early.

- Every individual (woman or man) 30 years and above should be screened by a trained provider, at least once in five years.
- Approximately 30 individuals can be screened in a day so screening should be planned accordingly.
- Those who use tobacco and alcohol in any form and have any of the above signs/ symptoms should be encouraged to be screened irrespective of their age.
- Screening for oral cancer can be done by a trained health worker such as ANM at the centre or health facility, this is called as Oral Visual Examination (OVE). Individuals should be taught to undertake self-examination of the oral cavity (as given below).
- All habitual tobacco and alcohol users and young individuals who are not 30 years of age or above, and are using tobacco and alcohol in any form should be motivated to do self-examination of oral cavity on a monthly basis or undergo clinical examination by a trained provider.
- Individuals with suspicious oral lesions or any abnormality should visit the health facility for further evaluation and management.

The ANM is required to screen using OVE. The detailed steps of OVE is given in Annexure-

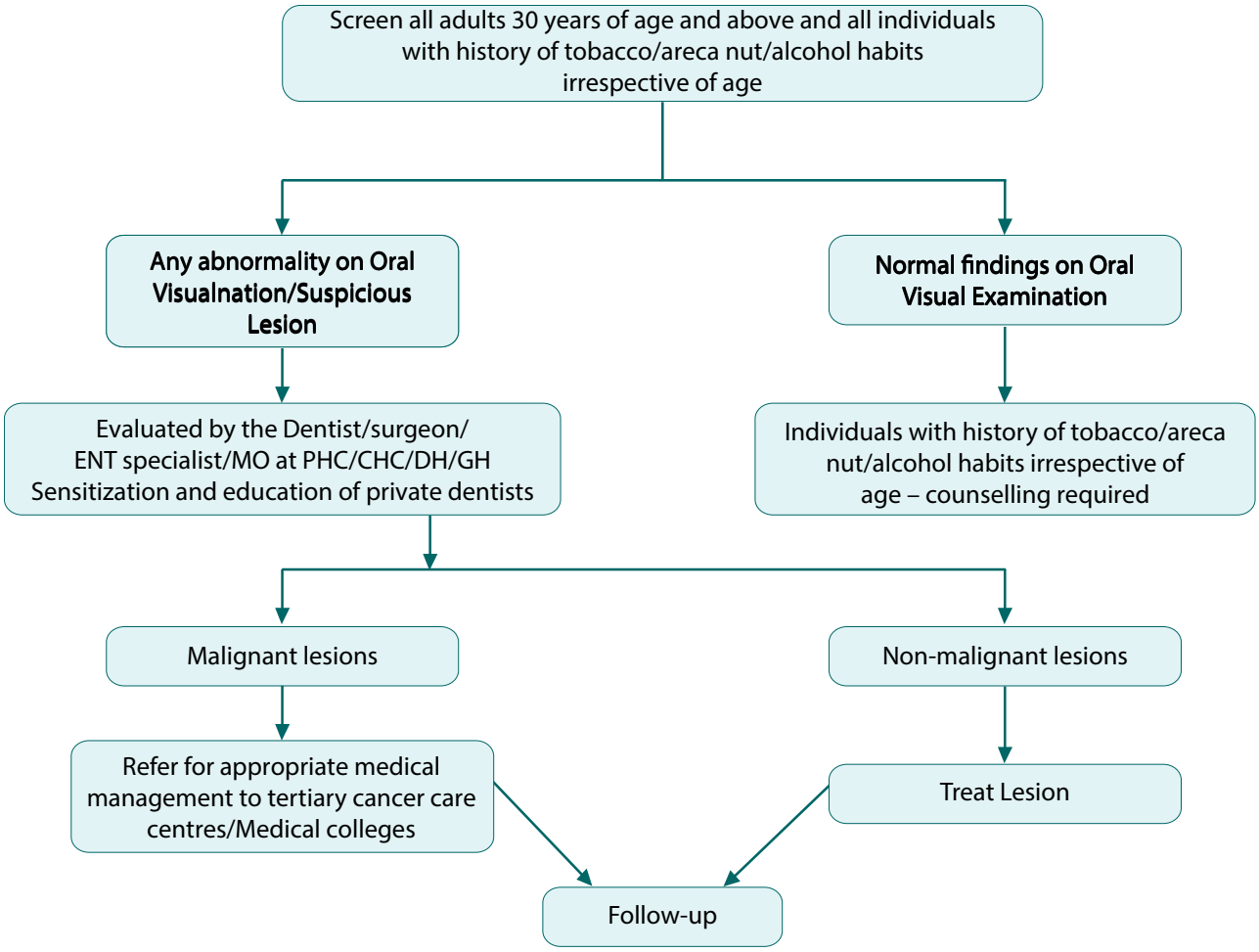
Steps to undertake self-examination of the oral cavity is as follows:

- Oral cavity should be examined thoroughly using a mouth mirror and a white light. A torch can be used for proper light. Normal oral cavity lining is soft and pink.
- Ask the individual to:
  - Rinse the mouth with water and stand before a mirror in adequate light.
  - Look in the mirror for any abnormality in the mouth.
  - If any abnormality- patch (white/red), ulcer, rough area, granular area or swelling in the mouth is found then the individual must visit the health facility for further examination and management by a health professional.

Management of Oral Cancer

Oral visual examination can be done to find if any discolouration, change in shape and lesions are visible in the oral cavity. Suspected cases will be referred to the dental surgeon for confirmatory diagnosis.

Figure 3: Flowchart showing the Screening and Management of Oral Cancer



Steps for Oral Visual Examination (OVE)

Tools

- Wooden spatula/Mouth Mirror
- Gloves
- Torch

Important point to keep in mind

Mouth mirrors (if available) need to be sterilized after every use i.e., after examining every person.

Disposable gloves should be used while doing the oral visual examination. Fresh gloves should be put on immediately before the examination and must be removed and discarded immediately after examination of one person is completed.

A fresh, clean wooden spatula (stick) must be used for each individual while conducting the oral examination.

The same pair of gloves and wooden spatula (stick) must not be used for more than one patient. The wooden blade after use should be destroyed by breaking the blade. The broken wooden blade and used gloves should be disposed according to the bio-medical waste management norms.

Process steps

1. Look for any swelling, growth, ulcerations, scars, sinus, fistula over face and neck region on the outer side.
2. Examine the border of both the lips (lip-line) with lips closed and also with mouth slightly open.
3. If the person is wearing complete or partial denture, ask her/him to remove it and open her/his mouth wide open.
4. Ask the person to rinse the mouth properly with water before starting the examination.

5. Take help from any volunteer to hold the torch while you are conducting the oral examination.
6. **Mouth Opening :** Ask the person to open the mouth widely (as much as the person can open comfortably without any pain). Ask the person to insert three fingers together (index, middle and ring fingers) in the mouth and assess the extent of mouth opening.
7. Hold the wooden spatula (stick)/mouth mirror in pen grip.
8. **Cheek (Buccal Mucosa)**

Right side

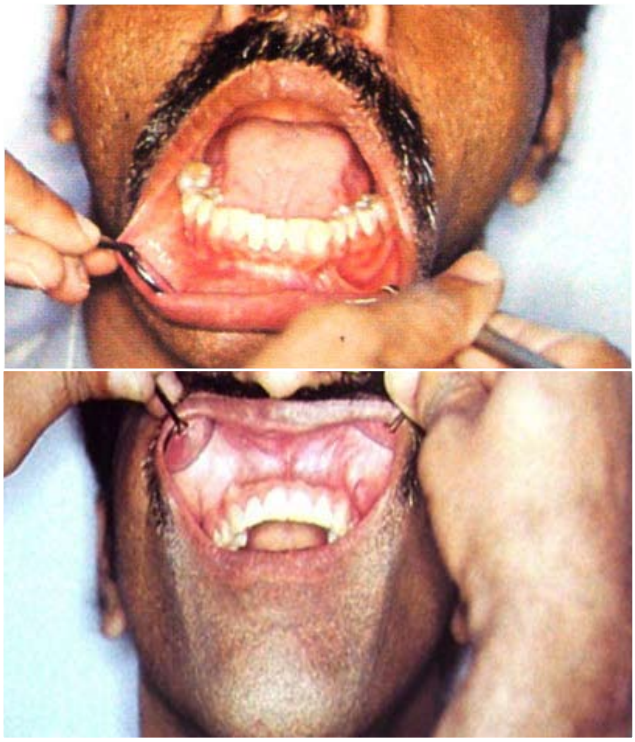
i. Use a torch for examination.

ii. Use the wooden spatula (stick)/mouth mirror in left hand to press the upper part of the cheek outwards just below the gum and use - wooden spatula (stick)/mouth mirror in right hand to press the lower part of cheek next to lower gum.

iii. Hold your left hand still and slide the - wooden spatula (stick)/mouth mirror in the right hand to the right side on the lower corners of the mouth.

Left side

i. To examine the left side of the cheek, follow the same steps, by bringing your left hand over the head of the person. Hold your left hand still and move the right hand to the left side on the lower corners of the mouth.



ii. Stand slightly in front of the person. Use the wooden spatula (stick)/mouth mirror at the upper corners of the mouth and gently pull upper lip outward and upward. Repeat the same step to pull the lower lip outward and downward.

9. **Tongue and floor of the mouth**

i. Ask patient to protrude (stick out the tongue) the tongue and examine upper surface of the tongue.

ii. Use - wooden spatula (stick)/mouth mirror to depress the front side of tongue to see the back of the tongue.

iii. Retract (pull back) right corner of mouth and ask patient to touch tip of tongue to

left corner of mouth. Now examine right side of the tongue.

iv. To examine the left side of tongue, retract (pull back) left corner of mouth and ask patient to touch tip of tongue to right corner of mouth.

v. Use - wooden spatula (stick)/mouth mirror to support/stabilize the tongue, if needed.

vi. Ask patient to lift the tongue upwards and try to touch to palate to examine the lower surface of tongue and floor of mouth.

10. **Palate (Roof of mouth)**

Tilt the head of patient slightly backwards and upwards. Retract corners of the mouth by mouth mirrors/wooden spatula (stick) and examine the palate (roof of the mouth).

11. **Tempo Mandibular Joint**

Stand behind the person and place your fingertips over the joints connecting jaw to skull on both sides. Ask the patient to open and close your mouth slowly, multiple times to check for any irregularity such as clicking sound or difficulty in mouth opening Check for any tenderness, swelling or redness.

12. **Palpation**

Use your index finger to palpate all parts of the oral cavity to assess if there is abnormality such as any lesion, hardening, swelling etc. You can do this by moving your finger from one side of the cheek to the other, over the entire surface of tongue (sides, upper part and lower part of tongue), over the roof and floor of the mouth.

ANNEXURE 1

COMMUNITY BASED ASSESSMENT CHECKLIST (CBAC) FORM FOR EARLY DETECTION OF NCDs AND TUBERCULOSIS (TB)

General Information	
Name of ASHA	Village
Name of MPW/ANM	Sub Centre
PHC	Date
Personal Details	
Name	Any Identifier (Aadhaar Card, UID, Voter ID)
Age	State Health Insurance Schemes: (Y/N)
Sex	Telephone No.
Address	

Part A: Risk Assessment				
Question	**Range**		**Circle Any**	**Write Score**
1. What is your age? (in complete years)	30-39 years		0	
	40-49 years		1	
	≥50 years		2	
2. Do you smoke or consume smokeless products such as gutka or khaini?	Never		0	
	Used to consume in the past/ Sometimes now		1	
	Daily		2	
3. Do you consume alcohol daily?	No		0	
	Yes		1	
4. Measurement of waist (in cm)	Female	Male		
	80 cm or less	90 cm or less	0	
	81-90 cm	91-100 cm	1	
	More than 90 cm	More than 100 cm	2	
5. Do you undertake any physical activities for minimum of 150 minutes in a week?	At least 150 minutes in a week		0	
	Less than 150 minutes in a week		1	
6. Do you have a family history (any one of your parents or siblings) of high blood pressure, diabetes and heart disease?	No		0	
	Yes		2	
Total Score				

A score above 4 indicates that the person may be at risk for these NCDs and needs to be prioritized for attending the weekly NCD day.

Part B: Early Detection: Ask if Patient has any of these symptoms			
B1: Women and Men	**Yes/No**		**Yes/No**
Shortness of breath		History of fits	
Coughing more than 2 weeks*		Difficulty in opening mouth	
Blood in sputum*		Ulcers/patch/growth in mouth that has not healed in two weeks	
Fever for > 2 weeks*		Any change in the tone of your voice	
Loss of weight*		Any patch or discoloration on skin	
Night Sweats*		Difficulty in holding objects with fingers	
Are you currently taking anti-TB drugs**		Loss of sensation for Cold/Hot objects in palm or sole	
Anyone in family currently suffering from TB**			
History of TB*			
B2: Women only	**Yes/No**		**Yes/No**
Lump in the breast		Bleeding after menopause	
Blood stained discharge from the nipple		Bleeding after intercourse	
Change in shape and size of breast		Foul smelling vaginal discharge	
Bleeding between periods			

In case of individual answers Yes to any one of the above-mentioned symptoms, refer the patient immediately to the nearest facility where a Medical Officer is available

**If the response is Yes- action suggested: Sputum sample collection and transport to nearest TB testing center*

*** If the answer is yes, tracing of all family members to be done by ANM/MPW*

Part C: Circle all that Apply
Type of Fuel used for cooking – Firewood/Crop Residue/ Cow dung cake/Coal/Kerosene
Occupational exposure – Crop residue burning/burning of garbage – leaves/working in industries with smoke, gas and dust exposure such as brick kilns and glass factories etc.

ANNEXURE 2

PACKAGE OF SERVICES

Health Facility	Packages of services
Sub centre	❖ Health promotion for behaviour change and counselling, 'Population based/ Opportunistic' Screening of common NCDs including cancer. ❖ Awareness generation of early warning signals of common cancer. ❖ Referral of suspected cases to PHC/CHC/nearby health facility and follow up of patient put on treatment.
PHC	❖ Health promotion for behaviour change and counselling 'population based/ Opportunistic' Screening of Diabetes, hypertension and three common cancers (oral, breast, and cervical by VIA). ❖ Clinical diagnosis and treatment of common NCDs including Hypertension and Diabetes, referral of complicated cases of DM/HTN to CHC/DH. ❖ Identification of early warning signals of common cancer. ❖ Referral of suspected cases to CHC/DH and follow up of patient put on treatment.
CHC/FRU	❖ Prevention and health promotion including counselling, Early diagnosis through clinical and laboratory investigations. ❖ Management of common NCDs, Lab. investigations and Diagnostics: Blood sugar, Total Cholesterol, Lipid Profile, Blood Urea, Creatinine, X-Ray, ECG, USG (To be outsourced, if not available) 'Opportunistic' Screening of common cancers (Oral, Breast and Cervix). ❖ Referral of complicated cases to District Hospital/higher health care facility.
District Hospital	❖ Diagnosis and management of cases of CVDs, Diabetes, COPD Stroke and Cancer (outpatient, inpatient and intensive Care) including emergency services particularly for Myocardial Infarction & Stroke. ❖ Lab. investigations and Diagnostics: Blood sugar, Lipid Profile, KFT, LFT, X-Ray, ECG,USG ECHO, CT Scan, MRI etc (To be outsourced, if not available). ❖ Referral of complicated cases to higher health care facility Health promotion for behaviour change and counselling, 'Opportunistic' Screening of NCDs including common cancers (Oral, Breast and Cervix). ❖ Follow up chemotherapy in cancer cases, Rehabilitation and physiotherapy services.
Medical College	❖ Mentoring of District Hospitals, Early diagnosis and management of Cancer, Diabetes, CVDs and other associated illnesses, Training of health personnel, Operational Research.
Tertiary Cancer Centre	❖ Mentoring of District Hospital and outreach activities, Comprehensive cancer care including prevention, early detection, diagnosis, treatment, palliative care and rehabilitation. ❖ Training of health personnel. ❖ Operational Research.

ANNEXURE 3

WAIST CIRCUMFERENCE MEASUREMENT

The steps are:

Tool

- Non-stretchable flexible measuring tape.

Important point to keep in mind

- WC should be taken on standing posture.

Process steps

- Remove any layers of clothing blocking the waist. If the individual is unwilling to remove clothing the measurement can be taken over the thinnest layer of clothing.
- The individual stands straight looking in front with abdomen (stomach) relaxed, arms at side and their feet fairly close together (about 12- 15 cm) with their weight equally distributed across both feet.
- You will stand in front, facing the subject. Find the midpoint between the lowest rib/bony point in front and top of hip bone in back. Waist circumferences can also be measured across the umbilical line (at the naval).
- The person should be asked to breathe normally. At the time of the reading of the measurement she/he asked to breathe out gently.
- Place the tape firmly in a horizontal position making sure the measuring tape is parallel to the floor and not folded or twisted.
- Record the reading at the end of the normal expiration/breathing.
- The tape should be loose enough to allow to place one finger between the tape and the person's body but the tape should fit firmly but comfortably around the waist. The tape should not squeeze the skin.
- Look at the place on the tape where the zero end meets the other end of the tape measure. The location of this meeting point is the waist measurement.
- Record the measurement in cms to the nearest 0.0 or 0.5 cm in the individual's card or your register. Example- If the exact measurement is 85.7 cm, it should be recorded as 85.5 cm and if it is 85.9 cm, then record the reading as 86 cm.

ANNEXURE 4

STEPS OF BREAST SELF-EXAMINATION (BSE)

Five steps of BSE

Step 1: Begin by looking at your breasts in the mirror with shoulders straight and arms on hips.

What to look for:

- Any change from the usual size, shape, and colour.
- Any visible distortion or swelling of the breast.

If any of the following changes are seen, bring them to your doctor's attention:

- Dimpling, puckering, or bulging of the skin.
- A nipple that has changed position or an inverted nipple (pushed inward instead of sticking out).
- Redness, soreness, rash, or swelling.

Step 2: Same changes to be looked for with arms raised.

Step 3: Also look for any signs of fluid coming out of one or both nipples (this could be a watery, milky, or yellow fluid or blood).

Step 4: Next, feel breasts while lying down, using the right hand to feel the left breast and then the left hand to feel the right breast. Use a firm, smooth touch with the finger pads of your hand, keeping the fingers flat and together. Use a circular motion, about the size of a quarter.

Cover the entire breast from top to bottom, side to side — from your collarbone to the top of the abdomen, and from the armpit to your cleavage:

- Follow a pattern to be sure that the whole breast is covered.
- Begin at the nipple, moving in larger and larger circles untilthe outer edge of the breast is reached.
- Ensure that all the tissue from the front to the back of thebreasts is examined. : for the skin and tissue just beneath, use light pressure; use medium pressure for tissue in the middle of your breasts; use firm pressure for the deep tissue in the back.

Breast Self-Exam — Step 1

Breast Self-Exam — Step 2 and 3

Breast Self-Exam — Step 4

- When the deep tissue is reached, the individual should be able to feel down to the ribcage.

Step 5: Finally, the breasts should be examined while standing or sitting. Many women find that the easiest way to feel their breasts is when their skin is wet and slippery, so this can be done wikletakinga bath. using the same hand movements described in step 4.

SOURCE: *http://www.breastcancer.org/symptoms/testing/types/self_exam/bse_steps*

Breast Self-Exam — Step 5

ANNEXURE 5

FORMAT FOR ASHA

Format for ASHA

ASHA Name

Village Name | Hamlet Name

Sub centre Name | PHC Name

Part A) Family folder

1. Household details –	
i. Number / ID	
ii. Name of Head of the Household	
iii. Details of household amenities –	Please specify
a) Type of house *(Kuccha / Pucca with stone and mortar/Pucca with bricks and concrete/ or any other specify)*	
b) Availability of toilet(Flush toilet with running water/ flush toilet without water/ pit toilet with running water supply and pit toilet without water supply/ or any other specify)	
c) Source of drinking water *(Tap water/ hand pump within house / hand pump outside of house/ well / tank/ river/ pond/ or any other specify)*	
d) Availability of electricity *(Electricity supply/ generator/ solar power/kerosene lamp/ or any other specify)*	
e) Motorised Vehicle *(Motor bike/ Car/ Tractor/ or any other specify)*	
f) Type of Fuel used for cooking – *(Firewood/ Crop Residue/ Cow dung cake/ Coal / Kerosene/ LPG /or any other specify)*	
g) Contact details – *(Telephone number of head of the family)*	

S. No	Individual Name	Aadhaar ID (if Aadhaar id is not available please add details of other ids like Voter id or Ration card)	Individual Health ID (issued by SHC/ ANM)	Sex	Date of birth	Age	Marital Status	Beneficiary of any health insurance scheme		Current Status of residence	
								Yes/ No	Details of the scheme (as applicable)	Staying at the house currently	Migrated temporarily for work

B) Individual Health Record

Individual Name	
Individual ID	

A. History

Known Medical illness	Date of diagnosis	Treatment		Any complications	Others
		Currently under treatment	Discontinued		

B. Screening for NCD

Screened for (specify date on which screening was done)						Screening result						Risk Factors	Other-Remarks
Hyper-tension	Dia-betes	Oral Cancer	Breast Cancer	Cervical Cancer	COPD (Respira-tory Dis-orders)	Hyper-tension	Dia-betes	Oral Cancer	Breast Cancer	Cervi-cal Cancer	COPD (Respi-ratory Disor-ders)		

C. Treatment Details

Con-dition	Date of Diag-nosis	Treatment Initiation			Treatment compliance-Currently on treatment				Treatment discontinued		Other-Remarks
		Health Facility	Date	Details	Health Facility	Date of visit	Supply of Medicine received – monthly	Side effects/ Complica-tions (if any)	Reasons for dis-continuation	Date of dis-continuation	

REPORTING PERFORMA

Form 1

National Programme on Prevention & Control of Cancer, Diabetes, CVDs & Stroke (NPCDCS)

Reporting proforma for Sub Centre

Name of the Sub-centre_____ PHC _____ Block/ Mandal _____
District_____ State_____

Month_____ Year _____

Part A: Hypertension and Diabetes Screening

Name of the village	Total No. of NCD Checkups Done			No. of new persons Suspected for DM and refered for Confirmation			No. of new persons Suspected for HTN and refered for Confirmation			No. of known cases of DM on Follow-up			No. of known cases of HTN on Follow-up		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Total															

Part B: Screening for Common Cancers

Name of the Village	No. of persons screened for cancers			No. of persons suspected with cancer and refered to PHC/ CHC/ GH						No. of persons referred by the Subcentre last month who underwent investigations at higher facility			Total No. of known Cancer patients in the Village		
				Oral			Breast	Cervical	Total						
	Male	Female	Total	Male	Female	Total				Male	Female	Total	Male	Female	Total
Total															
Signature															
Name and Designation															
Date of reporting_____															

*The Report should be filled by ANM of Sub centre and sent to MO I/C PHC on last day of the same month.

Form 2. National Programme on Prevention & Control of Cancer, Diabetes, CVDs & Stroke (NPCDCS)

NPCDCS Register for screening common NCDs in Government Health facilities (To be filled by Sub centre, PHC, CHC and District NCD clinics)				
State:	Type of Facility:	Name of Facility:	In-charge of Facility:	Total Population:
Date:		NPCDCS Code:		

Left side of Register															Right side of Register																	
SI No.	Patient ID (NPCDCS No.)	Personal Details			Personal History					Family History					Patient Examination									Screening Outcome			Other Co-morbidities Screening	
		Name / Address	Age/ Sex	Contact No.	Any known NCD (DM/ HTN/ CVD/ Ca)	Tobacco		Alcohol consumption in last one month	Less Physical activity (Sedentary lifestyle)	Diabetes	High Blood Pressure	CVD	Stroke	Cancer	Height	Weight	BMI (Wt. in Kg / Ht. in m2)	Blood pressure	Blood Sugar Fasting/ Random (To mention FBS/ RBS)	Oral cavity examination	Breast Examination	Visual inspection of Cervix	Any other investigation/ finding	Final diagnosis at NCD clinic	Date of starting treatment	Status after treatment Initiation	Screened for TB symptoms	On ATT
						Smoking	Smokeless (Chewing, snuffing)																						
					Please mention Disease	Yes/ No	Yes/ No	Yes/ No	Yes/ No	Yes/ No	Yes/ No	Yes/ No	Yes/ No	Yes/ No	(metre)	(kg)	(kg/ m2)	mm/ Hg	mg/ dl	Normal/ Abnormal	Normal/ Abnormal	Normal/ Abnormal				Referred/ on FU/ Lost to FU/ Died/	Yes/ No	Yes/ No
1																												
2																												
3																												
4																												

NOTES


NATIONAL HEALTH MISSION
राष्ट्रीय स्वास्थ्य मिशन