

Facilitator Guide for the Auxiliary Staff Training Course:

Uganda Integrated Non- Communicable Disease Chronic Care

- Cardiovascular risk-based management of hypertension, diabetes and other risk factors to reduce strokes, heart attacks, and hypertensive heart failure;
- Management of asthma and COPD; and
- Management of rheumatic heart disease.

-These training courses are based on guidelines in the WHO Package of Essential Noncommunicable Disease (PEN) Interventions, WHO-CDC Global HEARTS and WHO Integrated Management of Adolescent and Adult Illness (IMAI) chronic care modules

DRAFT Uganda Adaptation

June 2019

Not for further distribution

IMAI first-level learning programme for health workers working
at health centres or outpatient departments in low resource
settings

Facilitator Guide for the auxiliary staff
training course:

Uganda Integrated Non-communicable Disease Chronic Care

This training courses is based on the DRAFT module, *Uganda Integrated NCD Chronic Care: Cardiovascular risk-based management of hypertension, diabetes and other risk factors to reduce heart attacks and strokes; management of asthma and COPD; and secondary prevention of rheumatic heart disease* and are targeted for auxiliary staff working at the first-level health facility or outpatient department, health educators, lay providers, community health workers and trained expert patients in low-resource settings

June 2019

Produced by the IMAI-IMCI Alliance (US NGO), field-tested with Walimu (a Uganda NGO) and supported by WHO AFRO Department of Noncommunicable Diseases.

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Introduction

Materials to be used in this course
<ul style="list-style-type: none">• Uganda Integrated Non-communicable Disease (NCD) Chronic Care module• Acute Care module• Facilitator guide for the auxiliary staff training course: Integrated NCD chronic care (this manual)• Handouts for the auxiliary staff training course• Pre-test (in development)
<p>Other training tools:</p> <ul style="list-style-type: none">• NCD screening form-CVD risk/DM• WHO/ISH Risk Prediction Chart for AFRO E or country chart• NCD patient monitoring card- CVD risk/HTN/DM, Asthma/COPD, RHD• EPT cases (in development)• Medical equipment for skill stations-BP monitoring device, glucometer/strips, height board, weighing scale
Additional materials/resources used in the course
Wall charts (in development) <ul style="list-style-type: none">• WHO/ISH CVD Risk Prediction Chart for AFRO E or colour CVD risk country charts• NCD patient cards

This facilitator guide covers the training course for auxiliary personnel and is designed for the following auxiliary staff:

- health care providers with limited clinical background working at the health centre or outpatient department (OPD), such as nursing assistants or health assistants
- health educators
- lay providers or community health workers

- trained expert patients (e.g. people who may be living with chronic disease such as diabetes)

The goal for the training programme is to ensure that auxiliary workers are proficient in the following:

1. Screening/early identification to determine who to screen, to measure blood pressure, to calculate body mass index and to assess CVD risk using WHO/ISH country adapted charts
2. Triage patients who come to health centre or OPD for integrated NCD chronic care
3. Counselling to support patients with education about the disease (e.g. CVD, diabetes, hypertension, asthma or COPD), healthy lifestyle advice (diet, physical activity, reduction of harmful activities), adherence and treatment preparation, support and monitoring and to strengthen self-care.

All three sections are included in this manual to support cross-training of various health centre staff to be able to perform these roles as integral members of the NCD chronic care team. However, the manual may be divided into mini-trainings if deemed more appropriate for the health worker cadre e.g. community health worker may only need to do 1 & 3 or health educator may only focus on 3.

Training in integrated NCD chronic care takes place in clinical teams. See Table 1:

Table 1: Sample agenda for parallel training courses for NCD training in health centre clinical teams using WHO IMAI-PEN Acute Care and Integrated NCD Chronic Care

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6 (half day)
Training for Clinicians (doctors, clinical officers, medical assistants)	Emergency management/ Acute Care/NCD screening <ul style="list-style-type: none"> • Management of emergency NCD-related conditions prior to referral • Manage common acute conditions in OPD- when to suspect diabetes, CVD • CVD risk assessment -calculate BMI, measure BP, fingerstick glucose • Diabetes screening • Breast/cervical cancer screening/ early disease detection 	Chronic Care <ul style="list-style-type: none"> • Introduction to chronic care • General principles of good chronic care • Use the 5 A's Protocol 1: CVD/HTN/DM <ul style="list-style-type: none"> • Sequence of care • Triage • CVD and risk factors • Assess 	Chronic Care- Protocol 1: CVD/HTN/DM continued <ul style="list-style-type: none"> • Provide specific therapy- HTN, diabetes; primary/secondary prophylaxis • Manage comorbidities and complications • Patient education and support • NCD Patient Card: Diabetes, hypertension or elevated cardiovascular risk 	Chronic Care- Finish Protocol 1 Protocol 2: Asthma/COPD <ul style="list-style-type: none"> • Sequence of care • Assess • Provide specific therapy • Manage complications • Patient education and support • NCD Patient Card: Asthma and COPD 	Chronic Care- Finish Protocol 2 Start Protocol 3: RHD- 2nd prophylaxis <ul style="list-style-type: none"> • Assess symptoms, refer as needed • Give Benzathine injection IM • Schedule follow-up • NCD patient Card: RF/RHD NCD Implementation Planning -for the whole clinical team Review	Patient Monitoring -for select members of clinical team/ data managers
		Practical Sessions	Practical Sessions	Practical Sessions		

Training for nurses (same curriculum, separate classroom)	Emergency management/ Acute Care/NCD screening	Acute Care continued (half day)/ Chronic Care- Protocol 1: CVD/HTN/DM Practical Sessions	Chronic Care- Protocol 1: CVD/HTN/DM continued Practical Sessions	Chronic Care- Finish Protocol 1 and start Protocol 2: Asthma/COPD Practical Sessions	Chronic Care- Finish Protocol 2 and start Protocol 3: RHD- 2nd prophylaxis NCD Implementation Planning-for the whole clinical team Review	Patient Monitoring-for select members of clinical team/ data managers
Training for Auxiliary Staff/CHW/ Expert patient lay provider	Cardiovascular disease risk screening	Cardiovascular disease risk screening Practical Sessions	Triage & Support the Clinical Team Patient education and support Practical Sessions	Chronic Care- Protocol 2: Asthma/COPD patient education and support Practical Sessions	Chronic Care- Protocol 3: RHD- 2nd prophylaxis NCD Implementation Planning-for the whole clinical team Review	Patient Monitoring-for select members of clinical team/ data managers

The auxiliary training course uses methods which are appropriate for staff members who have little or no formal medical background. These methods include having less lecture-based teaching and more practice or problem-based learning. To complete the didactic sessions, auxiliary providers practice the skills taught in class during skill stations. The Course Director Guide (in development) has suggested course schedules.

A pre-training evaluation test (pre-test) and a final evaluation test (post-test) on the contents of the course are administered to all participants.

Facilitator techniques

HOW TO PREPARE TO FACILITATE THIS COURSE

To prepare for this course, facilitators should review the participant hand-outs along with the facilitator guide. Facilitators should consider adding their own notes to these sections for reference during the training. It may be helpful to discuss and learn about existing NCD care and the role of auxiliaries with local health facility administrators.

HOW TO GIVE PRE AND POST-TEST

Explain to participants that the purpose of the pre-test is to give facilitators an idea of the group's baseline knowledge. Ensure participants understand that it is not linked to "passing" the training and will not affect their pay/reimbursement. Allow 30 minutes for the test. Explain

that all the material will be covered in the course. The pre-test should be scored on the same day it is given so that facilitators can revise the content of the course as needed. It may be necessary to have a translator read the test aloud.

HOW TO CONDUCT A DRILL

During the course, facilitators will be conducting several drills. These are group exercises designed to quickly review material presented during the course. Participants are given sufficient information to answer the question and depending on the drill they may refer to wall charts and tables. Participants should be informed that they may use pencil and paper to do quick calculations if needed.

1. Gather the participants together and tell them you will conduct a drill. During the drill, they will review how to decide, for example, to calculate cardiovascular disease (CVD) risk. Ask the participants why this is an important decision.
2. Explain the procedures of the drill. Tell participants:
 - This is not a test. The drill is an opportunity for participants to practise making this decision and reinforce learning.
 - You will call on individual participants one at a time to answer the questions. You will usually call on them in order, going around the table. If a participant cannot answer, go to the next person and ask the question again.
 - Participants should wait to be called on and should be prepared to answer as quickly as they can. This will help keep the drill lively.
3. **Ask participants** if they have any questions about how to carry out the drill.
4. Allow participants to review the text for a minute or two before the drill begins. Tell the participants they may refer to the text during the drill, but they should try to answer the question without looking.
5. Keep the drill moving at a rapid pace. Repeat the list of questions or make up additional questions if you think participants need extra practise. The drill ends when all the participants have had an opportunity to answer and when you feel the participants are answering with confidence.

EXPLANATIONS AND LECTURING

At times the facilitator is directed to explain certain important concepts. Explanations should be short and to the point, using a flipchart and/or referring to the manual. Avoid lecturing as

this is not an effective way to learn. Occasionally, when pressed for time, it may be feasible to present certain material as a short, interactive lecture, rather than having participants read through a number of pages themselves, but this should not be the norm.

Chapter 1: Introduction to participants and pre-test

<p>Duration: 60 minutes</p> <p>Materials: -Blank flipchart/markers -Participant handouts -Pre-test</p> <p>Wall charts: -CVD Risk Assessment (in development)</p> <p>Preparation: -Review this guide and participant handouts -Copy enough pre-tests for class -Post Wall charts</p>	<p>Chapter Overview:</p> <ul style="list-style-type: none"> • General introductions • Pre-test as a baseline assessment of knowledge • Overview of course and introduction of materials <p>Learning Objectives:</p> <ul style="list-style-type: none"> • Understand structure of the course • Understand contents and goals of the course <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #cccccc;">Content</th> <th style="background-color: #cccccc;">Methods</th> <th style="background-color: #cccccc;">Time</th> </tr> </thead> <tbody> <tr> <td>Registration and introduction to each other</td> <td>Group discussion</td> <td>15 minutes</td> </tr> <tr> <td>Overview of course and materials</td> <td>Explanation</td> <td>10 minutes</td> </tr> <tr> <td>Roles and responsibilities of the auxiliary staff as part of the clinical team</td> <td>Group discussion</td> <td>5 minutes</td> </tr> <tr> <td>Pre-test</td> <td>Written</td> <td>30 minutes</td> </tr> </tbody> </table>	Content	Methods	Time	Registration and introduction to each other	Group discussion	15 minutes	Overview of course and materials	Explanation	10 minutes	Roles and responsibilities of the auxiliary staff as part of the clinical team	Group discussion	5 minutes	Pre-test	Written	30 minutes
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The introduction may be done in the plenary session with all other cadres or in the classroom with the auxiliary cadre alone.

1.1 Registration and introductions

Introduce yourself as the facilitator.

Exercise 1: Who are we and what is our role? (15 minutes)

EXERCISE 1

This is an exercise to let you as facilitators know who you are training and to give the trainees a chance to get to know each.

BEGIN by introducing yourself. This will help put participants at ease and demonstrate what is expected in the introduction.

ASK each participant to introduce themselves and talk for 2-3 minutes (only) about their role at the health centre or community and what motivates them to come to this training. This is meant to be only a brief introduction. You may need to gently stop each person after three minutes and move to the next person.

ASK participants, specifically to state:

- name
- describe the facility in which they work
- job title (mention that participants will discuss this further in the first chapter)/ role
- why they came to the training/goal

1.2 Overview of course and materials

EXPLAIN the reasons for the course:

- Auxiliary staff members are a critical part of the clinical team.
- Given the proper training and tools, they can help provide quality, chronic care.
- These two points should be repeated throughout the course.

EXPLAIN the course objectives and **show** these sections in the guideline manual:

- calculate cardiovascular disease (CVD) risk
- learn how to triage patients into integrated, NCD chronic care
- learn how to educate and support the patient at every visit through brief, specific, and consistent counselling messages

Give any necessary logistical information (i.e. agenda, lodging and reimbursement information, meals).

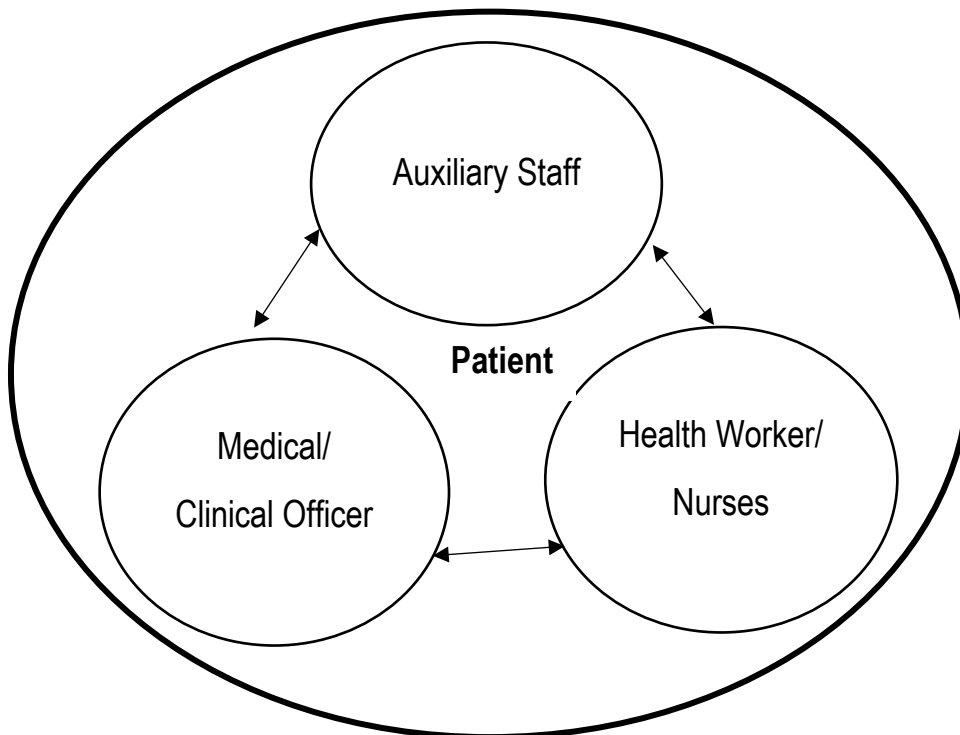
EXPLAIN the practical session:

- Inform participants that the practical session includes: skill stations, expert patient-trainer case scenarios and health facility visits.
- Summarise each of the components of the practical sessions.
- Remind participants that practical sessions exist to facilitate learning only and not to worry if they do not know the correct answer right away.

1.3 Roles and responsibilities of the auxiliary staff as part of the clinical team

EXPLAIN that as part of the clinical team, they will play an important role in providing good, chronic care for patients. If good, chronic care is available, this may help prevent many patients from having complications from their disease and limit hospital visits.

DISCUSS the role Expert Patients- importance of being peer educators to patients.



EXPLAIN that chronic care will be discussed in the next chapter.

EXERCISE 2

ASK participants where they may see patients as part of their work. Write their responses on the flip chart and repeat the importance of knowing what actions to take. **EXPLAIN** to the participants that their role is to facilitate as part of the clinical team in triage, calculate CVD risk and providing education and support. It is therefore also important to recognize very sick patients and to call for help and/or take patients to areas where they can receive help if needed. They are **not expected** to diagnose, manage or treat patients.

Now **ASK them** what steps they take in their current work environment if they come across a patient who is very sick. You can give examples if protocols are not in place at their facility or community environment:

- Do you call the nurse or other senior health officer?

- Do you call the doctor?
- Do you tell them to go to their nearest health facility or district hospital?

If they do not know the answer, explain that this will be something that needs to be determined when the clinical team groups come together or when they return to their facilities.

EMPHASIZE the need for all cadres to work together as a team:

- Inform participants that all nurses, clinical officers, and doctors or medical officers who participate in the training will be told that auxiliary staff are also being trained, and what their responsibilities include.

Discussion:

Describe your role in your clinical team or community.

Why is good communication between the roles important?

Chapter 2: Cardiovascular disease risk

<p>Duration: 120 minutes</p> <p>Materials: -Blank flipchart/markers -Participant handouts-CVD risk charts -CVD risk screening forms -WHO/ISH CVD Risk Prediction Charts</p> <p>Wall charts: -CVD Risk Assessment (in development)</p> <p>Preparation: -Review this guide and participant handouts -Make sure there is enough CVD risk screening forms and WHO/ISH charts for class -Post Wall charts</p>	<p>Chapter Overview:</p> <ul style="list-style-type: none"> • Cardiovascular disease (CVD) • Risk factors for cardiovascular disease • Screening and early identification of risk factors for CVD • Calculate body mass index (BMI) • Measurement of blood pressure • Calculate cardiovascular disease risk using WHO/ISH Risk Prediction Charts • CVD risk estimation form <p>Learning Objectives:</p> <ul style="list-style-type: none"> • Understand cardiovascular disease and its risk factors • Learn about cardiovascular disease. • Learn modifiable and non-modifiable CVD risk factors. • Understand who to screen for CVD risk • Learn how to measure blood pressure • Learn how to determine BMI using the BMI charts • Calculate cardiovascular disease risk using WHO/ISH Risk Prediction Charts • How to fill out CVD risk screening form 																					
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2.1 Cardiovascular disease

Exercise:

Ask participants what they know about cardiovascular disease?

Do they know people who have had problems with cardiovascular disease?

EXPLAIN: Cardiovascular disease (CVD) includes any problems that affect the heart or its blood vessels in the body, such as:

- heart attack
- stroke
- vessel problems such as in the legs (peripheral vascular disease (PVD))

EXPLAIN: Heart attack (or myocardial infarction)

Heart attack occurs when a blood vessel that carries blood to the heart is blocked. If there is a blockage, the heart can be injured and lead to problems with how the heart works or death.

Symptoms of a heart attack:

- Patients may complain of chest pain or severe and sudden chest tightness- generally located at centre of chest
- Patients may say that they have pain in their left arm, jaw or neck
- They may be sweating, have nausea, vomiting or difficulty breathing
- The pain does not go away.

Heart attack is an **emergency** and the patient should be advised to go to the hospital if you are working in the community or call the clinical health worker if you are at the health centre.

EXPLAIN Stroke

Stroke occurs when blood to the brain is blocked. When the blood supply to the brain stops, brain cells may die. Large strokes can lead to long-term problems with functioning such as walking or talking or eating or even death. Symptoms for stroke include the following:

- One side of the body may be weak or numb
- Patients may say that they are having a difficult time raising their arm or moving leg or walking
- Patients may complain of problems with seeing.
- They may have problems speaking or speaking slowly. They may be hard to understand and their face may look weak or uneven on one side.
- They may be confused.

Stroke is an **emergency** and the patient should be advised to go to the hospital if you are working in the community or call the clinical health worker if you are at the health centre.

2.2 Risk factors for cardiovascular disease

EXPLAIN and **WRITE** words in bold on flip chart:

Risk factors are **characteristics of individuals** which can lead to the development of **disease** such as cardiovascular disease.

Risk factors for cardiovascular disease include both risk factors that cannot be changed or **non-modifiable**, and those that can be changed or treated, **modifiable**.

EXERCISE:

ASK participants to think about people they know who may have cardiovascular disease. Ask about what risk factors they know may contribute to cardiovascular disease. Which ones can be changed?

WRITE:

Nonmodifiable CVD Risk Factors -cannot be changed	Modifiable Risk Factors - can be changed or treated
Age Gender Prior heart attack or stroke Family history of premature cardiovascular disease	Tobacco use Unhealthy diet Physical inactivity Raised blood pressure Raised blood cholesterol Diabetes Overweight and obesity

EXPLAIN family history of premature cardiovascular disease

This means that in a 1st degree relative such as a parent or sibling had a heart attack or stroke at an early age--e.g. father or brother who had heart attack or stroke before 55 years or mother or sister before 65 years (premature CVD)

DISCUSS lifestyle risk factors-tobacco use, unhealthy diet, and physical inactivity.

Tobacco use and cardiovascular disease

Tobacco use is associated with a higher risk of having a heart attack or stroke. Smoking is the single most important preventable risk factor for cardiovascular disease. Smoking can:

- make the blood more likely to clot and block blood flow to the heart and brain
- hurt cells that line the blood vessels
- cause the blood vessels to thicken and narrow which can increase blood pressure

Also breathing second-hand smoke (i.e. breathing the smoke that is in the air by another person who lives in house who is smoking) can cause cardiovascular disease.

Unhealthy diet and cardiovascular disease

The role of diet is important in the development and prevention of cardiovascular disease. It is also something that can be changed. Diets high in butter or fatty cuts of meat or processed foods or salt and low in fruits, vegetables and fish have been associated with higher cardiovascular disease.

Physical inactivity and cardiovascular disease

Reduced levels of physical activity have been linked to cardiovascular disease. Studies have shown that even if you have other risk factors for cardiovascular disease but are active you may have a lower risk of early death compared to inactive people with no cardiovascular disease risk factors. If you do more than 150 minutes (2 hours and 30 minutes) of moderate physical activity every week, you can lower your risk of heart disease by 30%. Physical activity is helpful for strengthening the heart and the health of blood vessels.

EXPLAIN raised blood pressure/hypertension.

Hypertension is the medical term for high blood pressure; blood pressure is the pressure in your blood vessels (arteries). Hypertension is:

BP \geq 140/90 mmHg in an adult

-SBP stands for **Systolic Blood Pressure**, it is the pressure of the arteries when the heart muscle contracts and is the top number.

-DBP stands for **Diastolic Blood Pressure**, it is the pressure of the arteries when the heart muscle is resting and filling with blood and is the bottom number

Hypertension can occur when these arteries become narrow and there is resistance to blood flowing within them. Risk factors for hypertension are similar to risk factors for cardiovascular disease:

- Diabetes
- African or Indian origin
- Family history of high blood pressure
- Overweight
- High salt intake
- Inactive lifestyle
- Increased consumption of caffeinated drinks (including coffee)
- Increased consumption of alcohol
- Unhealthy diet low in fruits and vegetables
- Tobacco use
- Older adults
- Poor stress management

Symptoms of Hypertension

Many people with high blood pressure have *no symptoms* at all. This is why screening is necessary, even in people who feel well. Sometimes people feel headache or dizziness.

In cases of extremely high blood pressure, some people may complain of:

- Severe headaches
- Anxiety
- Shortness of breath
- Chest pain

However, these symptoms are not specific to hypertension and dangerously high blood pressure can also have not symptoms

EXPLAIN diabetes

Diabetes

Diabetes occurs when the level of sugar (glucose) in the blood is higher than normal. The diagnosis of diabetes is made and confirmed by a blood glucose test. In diabetes, the blood glucose is high because the glucose does not get transported inside the cells and remains in the blood. This is due to a problem with insulin.

Insulin

Insulin is a hormone made by the pancreas. When you eat your food is broken into sugars in your digestive tract and is absorbed into your blood stream; there are several different types of sugars but the main one is called glucose. When your blood glucose levels rise after you eat your insulin levels should rise as well.

Insulin acts on the cells in your body causing them to take in glucose from the blood stream. The cells can then use this glucose as energy or store it as glycogen or fat to use as energy later.

There are 2 types of diabetes. Type 1 diabetes is mainly a genetic or inherited condition. It will be seen often in childhood and require insulin injections. Type 2 diabetes usually develops in adults, but can also appear in in children and adolescents who are obese. Initially, Type 2 diabetes is usually treated with oral medicines, but over time the condition can get worse and then the patient will eventually require insulin therapy.

Risk Factors for Type 2 Diabetes

Risk factors for type 2 diabetes are similar to risk factors for cardiovascular disease and hypertension:

- Overweight or Obese
- Over the age of 40 (but it can develop in younger people as well)
- A first-degree relative with type 2 diabetes
- An elevated waist circumference (waist measuring more than 80 cm in women or 94cm in men)
- Intermediate hyperglycaemia (or pre-diabetes) which occurs when your blood glucose levels are higher than normal but not yet high enough to cause diabetes diagnosis.

Symptoms of Diabetes

Diabetes symptoms can include:

- Increased thirst
- Increased urination (especially noticeable when it wakes the person up at night)

- Unexplained weight loss
- Tiredness

These symptoms can come on gradually, and as such, patients may get used to them and not realize that there is a problem.

Other symptoms of diabetes can include:

- Frequent infections
- Blurred vision

Additionally, someone with diabetes may not have any symptoms, demonstrating the need for regular screening even if they are feeling well.

EXPLAIN overweight/obesity

Overweight or obesity describes having too much body fat. Being overweight or obese puts people at higher risk for cardiovascular disease. If one is overweight, he may develop diabetes or hypertension. We will learn later in this module how to measure body fatness through body mass index or BMI. Waist measurement can also provide information regarding cardiovascular disease risk. It is a measurement of abdominal obesity.

2.3 Screening for cardiovascular disease risk

ASK: What does “screening” mean?

EXPLAIN screening:

Screening is the identification of disease (that the person may not be aware of) by means of tests, examinations, or other procedures that can be applied rapidly

ASK: Who should be screened for cardiovascular disease risk? Think about the risk factors for cardiovascular disease.

EXPLAIN: Screen for cardiovascular disease risk for anyone who:

- ≥ 40 years
- Smokes (in last year)
- Has a history of hypertension or diabetes
- Has a first degree relative with premature cardiovascular or diabetes or kidney disease

2.4 Understand the cardiovascular disease risk charts

EXPLAIN what the country-specific cardiovascular disease risk charts are. You may be familiar with the current WHO/ISH CVD risk charts which are based on regions around the world. New ones are being developed by WHO which will be country-specific. **GIVE** participants the CVD risk charts handouts.

In order to understand an individual's risk for having a heart attack or stroke based on their risk factors, country-specific risk charts have been developed. These charts help to estimate a person's likelihood of having a heart attack or stroke in 10 years based on the following individual risk factors.

- Age
- Gender
- Smoking status
- Systolic blood pressure
- Total cholesterol or Body Mass Index (BMI)
- Presence or absence of diabetes

Once risk is determined, prevention and treatment interventions can be targeted to the individual risk.

Now, **EXPLAIN** that we will learn how to obtain some of these different measures. For age, gender, and smoking one may obtain this information from asking the patient.

2.5 Measure height, weight and calculate BMI

EXPLAIN body mass index (BMI)

The body mass index or BMI is a measure of body fat and is based on height and weight. There are smartphone applications that can be downloaded which does this BMI calculation electronically by plugging in the height and weight variables. BMI tables can also be used to quickly obtain this number.

POINT OUT the BMI table in their handouts.

1. Measure weight in kg.
2. Measure height in cm.
3. Now **SHOW** how to use the BMI table
4. **EXPLAIN** the BMI categories

BMI Categories	BMI
Underweight	Below 18.5
Normal weight	18.5-24.9
Overweight	25-29.9
Obese	30 and above

EXERCISE

Example:

The HW measures the patient at 85 kg and 180 cm tall.

1. Use the BMI table and determine his BMI and category. **BMI 26, overweight**

EXPLAIN that the BMI can also be calculated with the following formula:

For calculation-

$$\text{BMI} = \frac{\text{weight in kg}}{\text{height X height in meters}}$$

OR

$$[\text{weight (kg)/ height (cm)/ height (cm)}] \times 10,000$$

2. Try the calculation with the same patient.
3. Now use the following example to calculate the BMI and category.

Example:

The HW measures the patient at 70 kg and 180 cm tall.

$$\text{BMI} = 70 \text{ kg} / 1.8 / 1.8 = 21.6 \text{ OR}$$

$$\text{BMI} = 70 \text{ kg} / 180 \text{ cm} / 180 \text{ cm} \times 10,000 = \mathbf{21.6, normal}$$

Class Activity:

1. Calculate your own BMI.
2. Calculate the BMI for the following people:
 - a. 42 year-old with height 157 cm and weight 66 kg **BMI 26.7, overweight**
 - b. 30 year-old with height 182 cm and weight 77 kg **BMI 23.2, normal**
 - c. 60 year-old with height 178 cm and weight 96 kg **BMI 30, obese**

EXPLAIN that BMI is an estimate of body fat but is not an exact measure. Factors such as muscle mass, age, gender, and certain ethnic groups can influence BMI. For example, athletes may have a high BMI because of increased muscle. On average women have greater amounts of total body fat than men with the same BMI.

We will discuss counselling for overweight and obesity in **Module 5**.

2.6 Measure blood pressure

EXPLAIN how to measure blood pressure correctly. **DEMONSTRATE** how to measure blood pressure correctly in class or during the practical sessions.

Materials needed:

1. stethoscope
2. Blood pressure (BP) cuff with sphygmomanometer
3. cuffs of different adult sizes (standard, small or large or extra-large/thigh)

Or

4. Digital blood pressure monitor (validated digital blood pressure devices are recommended for nonclinical health workers)

Steps:

1. Position patient seated in comfortable position on chair or lying down. If the patient is anxious, wait a few minutes.
2. Have patient flex arm at level of heart.
3. Support the arm while placing cuff on it either with your arm or use a side table. The cuff should be the proper size and not be placed over the patient's clothes.

The length of the cuff bladder should be approximately 80% of the circumference of the patient's upper arm.

Example for sizing*:

Arm circumference	Adult cuff size
22 to 26 cm	Small
27 to 34 cm	Standard
35 to 44 cm	Large
45 to 52 cm	Extra-large or "adult thigh" size

*These sizes are approximate. It is important to look at the cuff manufacturer's directions as to exact cuff sizing.

4. Example, a large or an extra-large cuff should be used if the arm circumference is >33 cm.
5. Wrap the cuff securely around upper arm about 2 fingers above the antecubital fossa (bend in arm) [insert illustration].
6. Place the stethoscope on the arm over the artery in the antecubital fossa below cuff's edge with the earpieces in your ear.
7. Close the pressure valve on the rubber inflating bulb.
8. Inflate the cuff to 210 mmHg by pumping the bulb quickly (or until the pulse at the wrist disappears).
9. Deflate the cuff slowly at a rate of 2-3 mm Hg per second while looking at the sphygmomanometer. The first faint, tapping or knocking sound is the **systolic blood pressure**. Observe the number on the dial.
10. Continue to let the air out slowly. When the sounds disappear—this is the **diastolic blood pressure**. Observe the number on the dial.
11. Record the blood pressure. Ideally, at least 2 measurements should be taken. If the 1st reading is raised, wait at least 2 minutes and repeat. Use the second reading.
12. Alert the clinical health worker if blood pressure is over 180 systolic or 110 diastolic immediately. If unable to reach the health worker or if blood pressure is over 200 systolic or 120 diastolic, advise the patient to go to the hospital.

EXPLAIN: During the skill sessions, we will demonstrate and practice measuring blood pressure on each other.

Have the participants join in the following **DRILL:**

DRILL

Tell the participants that you will now say a statement. They should say aloud if TRUE or FALSE.

1. Risk factors for cardiovascular disease cannot be controlled.

FALSE

2. Heart attack and stroke can occur when there is a blockage in the blood vessels going to the heart or brain.	TRUE
3. Risk factors that can be changed include obesity, smoking, and hypertension.	TRUE
4. Family history of heart attack or stroke in your father is an example of a modifiable CVD risk factor.	FALSE
5. If a person says that he has to wake up at night many times to urinate, he may have diabetes.	TRUE
6. Age is a risk factor for cardiovascular disease.	TRUE
7. People with hypertension may not have any symptoms.	TRUE
8. If you take a blood pressure measurement and it is only 150/90, you do not need to repeat it.	FALSE
9. In a busy clinic, it is ok not to wait till the person sits down to take the blood pressure.	FALSE
10. The cuff size is important for a proper blood pressure reading.	TRUE

2.7 Estimate the cardiovascular disease risk using the appropriate WHO/ISH subregional risk prediction charts or country charts

EXPLAIN the steps to estimate cardiovascular disease risk.

Step 1- Ask about prior history of cardiovascular disease or chronic kidney disease.

ASK the patient: Have you ever been diagnosed or been told that you have had a heart attack (myocardial infarction) or stroke or kidney disease?

If **YES**→, the patient already has **HIGH** cardiovascular risk and the charts are not needed to estimate his/her risk. The patient should be referred to the NCD clinic if not already enrolled there.

If **NO**→ Go to step 2 to calculate CVD risk using the WHO/ISH subregional or country specific chart.

Step 2- Before using the chart to estimate the risk, do you have the following information about the patient.

1. Age
2. Gender
3. Systolic blood pressure
4. Smoker or non-smoker—has the patient been smoking in the last year?
5. Presence or absence of diabetes
6. Total blood cholesterol result or BMI value (and use BMI charts instead of cholesterol charts).

EXPLAIN: These 6 pieces of information would have been obtained before you estimate the CVD risk using the chart. If cholesterol testing is not available, use the non-lab based BMI charts.

What may not be confirmed is whether or not the person has diabetes or the total cholesterol result. **Ask the patient if she or he has been diagnosed with diabetes or takes medicines for diabetes. If NO prior diagnosis of diabetes, you can use the charts without diabetes to estimate risk if you know the total cholesterol → go to STEP 3. If diabetes status is unknown and/or the cholesterol is not known, you can use the non-lab based BMI charts → go to STEP 4.**

If you are working at the health centre and do not have these lab results, you can estimate the risk based on the non-lab based BMI chart and discuss with the clinical health worker to send the patient for fasting blood glucose and cholesterol testing before coming to see him or her → go to step 4.

EXPLAIN: Patients need to be asked if they have **ever been diagnosed** with a certain condition. **It is important to understand and remember that patients may report not having high blood pressure, or diabetes, yet they may be taking medications for those conditions.** Patients often think that because they are receiving treatment they do not have a condition anymore; however, this is not the case. Therefore, when asked about their blood pressure, a patient may say they do not currently have high blood pressure. Conditions like diabetes, high cholesterol, and high blood pressure are **chronic conditions** that persist despite treatment. **You must ask patients the questions as they are worded**, regardless of their current health status.

Step 3- Select the appropriate chart-lab or non-lab based

If the patient answered YES to having been diagnosed with diabetes or on medications for diabetes, use the chart for people with diabetes if cholesterol value available. If NO, use the chart for people without diabetes. If not known and you are using the non-lab based BMI chart, go to step 4.

Step 4- Select male or female table

Step 5- Select smoker or non-smoker boxes

A smoker is anyone who has been smoking in the last 12 months. If you ask if they smoke and the person said that they quit smoking 6 months ago, he or she is still

considered a smoker for the purpose of cardiovascular disease risk estimation. You can still applaud them and support the person's effort to continue to not smoke.

Step 6- Select age group boxes

Step 7- Within this box, find the nearest cell where the person's systolic blood pressure and total blood cholesterol (or BMI) cross.

- Use the person's most recent cholesterol result or BMI.
- If in mg/dl divide by 38 to convert to mmol/l

STEP 8: Record the CVD risk percent.

Note that CVD risk could be higher than what is estimated by the charts.

Step 9: Counsel and refer according to the patient's level of risk.

All patients regardless of their CVD risk can be counselled on a heart healthy lifestyle- see **Module 5**. If the HW is in the community and the estimated CVD risk is greater than 10% or if the BP is $\geq 140/90$, the person should be referred to the health centre. If the estimated CVD risk is $< 10\%$, the HW can advise that the person be re-screened in 1 year. If the estimated CVD risk is done at the health centre, follow the protocol for clinical health worker verification of the risk estimation.

Class Activity

Use the country specific risk chart to determine the CVD risk for the following patients:

1. 52 year-old male smoker with diabetes and SBP 145. Total cholesterol is 4.8. **25%**
2. 41 year-old male, non-smoker without diabetes and BP 150/85. Cholesterol unknown. BMI 25
4%
3. 55 year-old male who is a smoker with history of hypertension and heart attack. Total cholesterol =6, BP 140/90. Patient does not have history of DM.
Prior CVD-no risk calculation needed as already high CVD risk
4. 60 year-old female who does not smoke, does not have diabetes and her systolic BP is 160. T. Chol=4 mmol/l
12%
5. 40 year-old male with history of diabetes, smoker, cholesterol 6.0 and SBP 160.
38%
6. 48 year-old woman with history of diabetes, non-smoker, cholesterol 5.0, and SBP is 165.
15%

2.8. Use the CVD risk assessment form

This form should help the auxiliary or community health worker gather the data needed to estimate the cardiovascular disease risk (left side of form). The clinical health worker can then verify data to confirm the risk estimation (right side). Some steps will be skipped if the CVD risk estimation is done using the non-lab based BMI country specific charts.

POINT out the forms in their handouts.

Directions to use this form:

1. Fill out name and address/contact information for the patient.
2. Fill in gender and ask about age.
3. Ask patient if smokes tobacco (in last year) and write “YES” if any smoking in past year.
4. Ask patient if on blood pressure medicine and circle YES or NO. Measure blood pressure.
5. Ask if ever has been diagnosed with diabetes or if on diabetes medicines. Fill in YES or NO. If not sure, use the BMI chart to estimate CVD risk. If in health centre, discuss with health worker to send for fasting blood glucose.
6. Ask about prior history of heart attack or stroke. If YES, patient has high cardiovascular risk and there is no need to calculate risk with charts.
7. Fill in total cholesterol if results available. If not, calculate BMI and use the BMI chart.
8. Now use the charts to estimate the CVD risk for the patient.
9. Once CVD risk is estimated, have patient take form to the clinical health worker to confirm risk. If in community, refer patient for CVD risk $\geq 10\%$ or if $BP \geq 140/90$ and have the patient bring the form with him or her.

CVD Risk and DM Screening Form

**Cardiovascular (CVD) Risk and Diabetes Assessment for Auxiliary Staff/Lay Providers:
Screening then Clinical Health Worker Verification**

UNIT		REGISTRATION NO:	
NAME:		ADDRESS or DISTRICT/SUBCOUNTY/VILLAGE	
1. Fill what you can and send form with patient to next step. DATE:		2. Health worker verification DATE:	
Sex (circle)	M F	New Results	
Age (fill in)			
History of smoking in last year? (circle)	Yes No		
Take Blood Pressure (BP) X 2 (5 minutes between measurements)*	BP1	Repeat BP?	
	BP2		
On hypertensive medicine? (circle)	Yes No	verified?	
History of diabetes (DM)		verified?	
Or on DM medicine? (circle)	Yes No	verified?	
Measure Height		cm	
Take Weight		kg	
Calculate BMI (from table)			
Screen for DM, if status not known. Check fasting blood glucose (FBG). Repeat for DM diagnosis.	FBG	FBG	
History of heart attack, stroke, chronic kidney problem? (circle)	Yes No	Verified? Also ask re TIA, angina, PVD; CKD, including diabetes with overt nephropathy	High risk from prior CVD chronic kidney problem (circle)
IF YES, STOP HERE. High risk from <u>prior CVD</u> or <u>chronic kidney problem</u> (circle)			
CVD risk % (from CVD risk chart) (circle)	< 10 % 10 to < 20 % 20 to <30% ≥30%	< 10 % 10 to < 20 % 20 to <30% ≥30%	
Follow-up *If SBP>180/100, to see health worker immediately.			
NAME/SIGNATURE:		NAME/SIGNATURE:	

Exercises

1. 50 year-old male who smokes and is diabetic. His total cholesterol is 6 mmol/l and his blood pressure is 160/100. Height is 162 cm and weight 84 kg. **CVD risk 42%, BMI 31**
2. 65 year-old female, non-smoker without diabetes. Her blood pressure is 142/90 and 144/92. Weight 70 kg and height 155 cm. **CVD risk 20%, BMI 28**
3. 40 year-old female, non-smoker with diabetes. Her total cholesterol is 5 and blood pressure is 130/80 and 130/82. Weight 56 kg and height 160 cm. **CVD risk 4%, BMI 22**
4. 67 year-old male, smoker with history of heart attack. His blood pressure is 140/90 and 132/82. Weight 90 kg and height 175 cm. **High CVD risk, no need for CVD risk estimation, BMI 29**
5. 47 year-old male, smoker, with diabetes. His total cholesterol is unknown, and his blood pressure is 164/100 and 160/98. Height 173 cm and weight 90 kg. **CVD risk 10%, BMI 30**

Now practice filling in CVD risk screening card.

Summary

1. Cardiovascular disease includes diseases that affect the heart and blood vessels in the body. Some of the important consequences of cardiovascular disease that can lead to long-term problems or death are heart attack and stroke.
2. Risk factors for CVD include modifiable and nonmodifiable risk factors. An example of a modifiable risk factor is smoking. An example of a non-modifiable risk factor is age.
3. Screen people who are older than 40 years, smokers or those who have a family history of heart attack/stroke/kidney disease for cardiovascular risk in a 1st degree relative.
4. The WHO/ISH risk prediction charts allow for the 10 year estimation of a person's likelihood of having a myocardial infarction or stroke based on individual risk factors. Newer WHO country-specific charts support a lab-based or non-lab based estimation of CVD risk.
5. An individual with prior heart attack or stroke has high CVD risk for a recurrent event.
6. In order to calculate risk, the HW should know the patient's age, gender, systolic blood pressure, presence or absence of diabetes, if smoker, and cholesterol, if available, or calculate BMI.

Chapter 3: Chronic Care

<p>Duration: 110 minutes</p> <p>Materials: -Principles of good chronic care -5 A's -Sequence of care</p> <p>Wall charts: -</p> <p>Preparation: -</p>	<p>Chapter Overview:</p> <ul style="list-style-type: none"> Introduction to chronic care. Summary of the general principles of good chronic care Sequence of care. <p>Learning Objectives:</p> <ul style="list-style-type: none"> Understand acute and chronic care. Know the general principles of good chronic care. Learn the sequence of care and the role of different members of the clinical team. <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #cccccc;"> <th style="text-align: left;">Content</th> <th style="text-align: left;">Methods</th> <th style="text-align: left;">Time</th> </tr> </thead> <tbody> <tr> <td>Present objectives of chapter 2</td> <td>Flip chart, overheads</td> <td style="text-align: center;">10 minutes</td> </tr> <tr> <td>Introduction to chronic care</td> <td>Didactic/flip chart, group discussion</td> <td style="text-align: center;">15 minutes</td> </tr> <tr> <td>Summary of the general principles of good chronic care</td> <td>Didactic/ flip chart, handout, Exercise</td> <td style="text-align: center;">10 minutes</td> </tr> <tr> <td>Entry points into integrated chronic care</td> <td>Wall chart, discussion</td> <td style="text-align: center;">10 minutes</td> </tr> </tbody> </table>	Content	Methods	Time	Present objectives of chapter 2	Flip chart, overheads	10 minutes	Introduction to chronic care	Didactic/flip chart, group discussion	15 minutes	Summary of the general principles of good chronic care	Didactic/ flip chart, handout, Exercise	10 minutes	Entry points into integrated chronic care	Wall chart, discussion	10 minutes
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3.1 Introduction to chronic care

UNDERSTAND chronic care:

Chronic conditions are a major cause of illness, disability and death globally. Conditions such as high blood pressure (hypertension), problems with blood sugar (diabetes), HIV, asthma and respiratory problems (e.g. asthma or chronic obstructive pulmonary disease (COPD)) require a continuum of care over a period of time. This continuum therefore requires repeated contact with the health system and tracking through the health system.

ASK participants to list examples of acute and chronic conditions and **WRITE** on flipchart:

Example:

ACUTE	CHRONIC
<ul style="list-style-type: none">- lung infection (pneumonia)- heart attack- low blood sugar- very high blood pressure- diabetic foot infection- broken bone	<ul style="list-style-type: none">- HIV- chronic respiratory problem (asthma or COPD)- blood sugar problem (diabetes)- high blood pressure (hypertension)- chronic heart problem (e.g. congestive cardiac failure)

EXPLAIN the difference between acute and chronic care. **WRITE** bolded words on flip chart:

Acute conditions are generally **sudden and severe in onset** whereas **chronic** conditions **develop over time** where the condition may **improve, remain stable or get worse**. Chronic conditions may have acute episodes e.g. asthma attack in a person with long-standing asthma.

Chronic care is different from **acute care** which uses medical care to **cure or fix** acute problems or injury while **chronic care** requires **repeat visits** over time. The goal of chronic care is to improve the **quality of life** for people with chronic diseases and **prevent complications or worsening of disease**.

WRITE the aim of chronic care:

<p>Aim of chronic care</p> <ol style="list-style-type: none">1. control symptoms2. prevent worsening of disease and complications3. maintain quality of life

3.2 Summary of the general principles of good chronic care

The chronic care model describes the health care system changes that help practices improve outcomes among patients with chronic illness. The system changes support people-centred care.

WRITE the words in bold on the flipchart:

Integrated **people-centred health services** means putting the **comprehensive** needs of **people** and **communities, not only diseases**, at the centre of health systems, and empowering people to have a more **active role in their own health**.

The general principles are focused mainly on the organization of the primary care health centre and the interaction of the first-level health worker and the patient.

ASK participants what actions would support people-centred care in the health system and go through the following 10 general principles of good chronic care:

Summary of the 10 general principles of good chronic care

1. Develop a treatment partnership with your patient.
2. Focus on your patient's concerns and priorities.
3. Use the **5 As: Assess, Advise, Agree, Assist and Arrange**.
4. Support patient self-management and family support.
5. Organise proactive follow-up.
6. Involve "expert patients," peer educators and support staff in your health facility.
7. Link the patient to community-based resources and support.
8. Use written information—registers, treatment plan, treatment cards and written information for patients—to document, monitor and remind.
9. Work as a clinical team.
10. Assure continuity of care.

Emphasize that the principles of good chronic care can be used for every health worker-patient interaction.

A general principle of good chronic care:

1. Develop a treatment partnership with your patient

ASK: *What is a partnership?*

- **A partnership is an agreement between two or more people to work together in an agreed way toward an agreed goal.**

For good chronic care, the partnership occurs between the health worker (or clinical team) and the patient. In a partnership both parties share responsibility for the agreement. Each partner knows what role he or she plays in the partnership. Partners treat each other with respect. One partner does not have all the power.

Examples of a partnership:

- Doctor and nurse working in the operation theatre
- Football team
- Cook and waiter working in a restaurant
- A Couple

Examples that are NOT a partnership:

- Mother and young child
- Health worker and sick infant
- Teacher and young students
- Police and criminals
- Officer and recruits in the army

A general principle of good chronic care:

2. Focus on your patient's concerns and priorities

Often we focus only on the obvious signs or symptoms of illness or what we need to get done at the visit (e.g. blood pressure check) and may miss the real reason that the patient came to the clinic. It is important to find out why the patient has come and make sure that this is addressed and/or referred to the clinical health worker if needed.

A general principle of good chronic care:

3. Use the 5A's – Assess, Advise, Agree, Assist, Arrange

WRITE the 5 As on the flipchart and give an example of each. **EMPHASIZE** how the 5 As can be used in all clinical interaction and help to develop and refine patient self-management, and reinforces a treatment partnership with the patient.

1. ASSESS

Assess includes asking what the problem is, listening to the answer, and asking further questions.

Remember: Assessing needs to include *asking* and also *listening* to the patient's response.

Examples of Assess: Do you have any problems or concerns that you would like to address today?

Assess adherence to treatment: How many times have you missed taking your medicines this week? This month? Do you have any problems taking your medicines?

2. ADVISE

This includes educating the patient, helping the patient to problem-solve (for example, forgetting to take their pills and advising on using a phone alarm), and preparing the patient for self-management. It is important to discuss the options, not to just tell the patient what to do. It is also important to evaluate how ready the patient is to adopt the plan and to ask checking questions to make sure that they have understood. (If you do not know how to ask a checking question, tell your facilitator. We will practice this later.)

Example of Advise: I understand it is difficult to remember taking your blood pressure pill every day especially when you feel fine. Other patients that I have had said the same thing. One thing that has helped them to remember is to put an alert on their phone or an alarm on. Are you able to do this? Do you have any questions about what I just told you?

3. AGREE

Agree means that the patient understands, wants and agrees to the treatment plan.

This is a step we often skip!

It may be logical to skip this step during emergency care for trauma or a very sick patient. They have come (or been brought) for care and are too sick for a discussion or to make a choice.

However, most care is not an emergency and we are learning about how best to provide care for adults. For chronic care, AGREE is the key step in the process since it is the basis for forming a partnership with the patient and supporting good patient self-management.

Example of Agree: Ok, so we agree that you will put an alert on your phone to remember to take the medicines?

4. ASSIST

This includes treatments (medication and other treatments), advice and counselling, but also help that you can provide the patient in terms of skills to carry out the treatments or to overcome barriers. An important way to assist the patient is to get other help, by linking to available support in the community or to peer support groups, or involving someone to help support them in their treatment.

Usually we (and the patients) focus only on the pills or the injection. There is much more that is needed than this for good chronic care, especially for diseases that require life-long treatment.

Even the best plans for treatment often run into problems which can be frustrating. When the patient returns, they may need more assistance to solve problems and overcome obstacles.

Example of Assist: I see that you are having a difficult time following a low sugar diet because you are not the person who cooks at home. Can we set up a time with you and your wife to discuss your diet and what steps are needed for a diabetic diet? We can help provided some options for her.

5. ARRANGE

A definite follow-up, scheduling a group appointment, arranging how the medication can be picked up on the next visit, and recording what happened on the visit are all parts of arrange.

Example of Arrange: I would like you to meet with our Health Educator who will give you some nutrition strategies on how to change your diet.

Exercise 1:

1. Ask the participants to say the 5 A's out loud.

2. Now, discuss with the group:

How do you already use the 5 A's? Consider how they could help you both in your individual encounters with patients and as a clinical team.

3. Ask the participants to repeat the 5 A's out loud.

A general principle of good chronic care:

4. Support patient self-management and family support

WRITE the words in bold on the flip chart.

A patient with a chronic condition has a vital role in the management of his/her own care. This is called **SELF- MANAGEMENT** or also called, **SELF-CARE**. Self-management means the patient is taking responsibility for his or her own health care.

→ **Self-management or self-care recognizes that the patient takes responsibility for the daily treatment of their condition.**

The patient takes responsibility for taking medication. Every day he or she makes choices about their diet, exercise, and other lifestyle issues that protect or damage their health (when the patient living with a chronic disease makes choices to protect their health, this is often called *positive living*).

The care team helps the patient understand their options and the consequences of their decisions. Health workers can help to strengthen the patient's self-management. Promoting self-management includes developing a relationship between the care team and the patient in which the patient trusts and believes.

The team can:

1. **Provide education-** Patients need to be educated, motivated and supported to take care of themselves. This gives them a better sense of control and makes them feel better about their situation. It has been shown that this approach makes them more successful in caring for themselves.
2. **Give written education materials** with pictures and simple messages- Sometimes patients may get overwhelmed with the amount of information provided to them at their chronic care visit. Having written educational messages allow them to reread the information that they just heard about at home.
3. **Write the treatment plan.** This allows for a concrete plan that is individualised for the patient. It may be as simple as an explanation of the diet that they should follow or more information on the medication that should be taken, how it should be taken and include potential side effects.
4. **Offer follow-up** to check the patient's progress. This gives the patient a chance to discuss what is working for them and what obstacles they may be facing in their treatment plan. It also give the clinical team a chance review the clinical status, modify the treatment plan if needed and provide ongoing support to the patient.

Patients need to be educated, motivated and supported to take care of themselves. This gives them a better sense of control and makes them feel better about their situation. It has been shown that this approach makes them more successful in caring for themselves.

→ **Combining acute care, chronic care, palliative care/symptom management, and prevention.**

As discussed earlier, patient may develop acute symptoms for unrelated problems or worsening of their condition throughout the continuum of their health care. The clinical team should work to integrate management of these problems and refer as needed.

During the later stages of the disease, patients also need palliative care or symptom management, so that suffering can be managed well. Note that palliative care includes managing symptoms during both acute and chronic illness, it is not just for end-of-life care!

Prevention and counselling needs to be integrated throughout both acute and chronic care. Lifestyle modifications, including healthy diet and exercise, are essential to prevent worsening of disease or complications and the development of other conditions. This will be discussed further in Chapter 4.

A general principle of good chronic care:

5. Organise proactive follow-up.

Proactive care involves anticipating patient's needs, arranging follow-up, and supporting self-management. Proactive follow-up is when the health care provider plans ahead to ensure the patient is routinely follow-up and their disease and functional status can be evaluated and compared to previous levels. This type of proactive care does not mean waiting around for things to get worse, instead it regularly monitors patients to ensure that their disease is well controlled, their health and functional status is maximized, and that patients receive adequate treatment and support to prevent acute episodes of worsening of their chronic disease.

A general principle of good chronic care:

6. Involve “expert patients, peer educators, and support staff in your health facility

Your role as expert patients, peer educators, and support staff are a valuable asset in chronic disease management. Because these types of diseases require continuous self-management by the patient, educating the patient is essential to ensure they are knowledgeable about their disease and how it can progress, the consequences of not complying with treatment, and how best they can self-manage their disease. Patient education and support is also crucial to empower patients to take control of their health; the development of self-belief and the feeling that they are in control of their health is built through ongoing supportive relationships with these staff members.

A general principle of good chronic care:

7. Link the patient to community-based resources and support.

Patients with chronic diseases required continued support to ensure they are managing their disease correctly and remaining in optimal health. Community-based resources, such as patient support groups, are excellent ways for patients to express the anxieties and challenges they face while living with their disease and receive suggestions and coping strategies from people who are in similar situations.

Additionally, being linked to community focal points, such as the community health worker, is important to ensure the patient is able to seek help or advice whenever necessary.

A general principle of good chronic care:

8. Use written information – registers, treatment plan, treatment cards, and written information for patients – to document, monitor, and remind

Written information for providers, such as registers and treatment cards, are important for the continuous monitoring of patients with chronic diseases. By documenting their vital signs, functional status, and disease level on every visit, you are able to make comparisons of how they are today versus during previous encounters and see how their disease is progressing over time. Additionally, documentation allows the health care provider to make treatment modification decisions by comparing whether their current symptoms are better or worse than the last visit and how well or unwell their current medications are working.

→Documentation also allows for communication between different members of the clinical team.

Written information for patients is also important. Providing them with information about potential disease progression and treatment plan allows them to educate themselves on their disease status and know what to expect in case it worsens. As discussed above, patient education is crucial to foster empowerment and effective self-management.

A general principle of good chronic care:

9. Work as a clinical team.

Providing good chronic care requires teamwork. To be able to deliver long term treatment and support, we need to form a clinical team that includes a nursing assistant, nurse, clinical officer, and a medical officer or doctor. This team may work together differently depending on where they are located.

In the district outpatient clinic, the whole clinical team can work together in the same clinic. They can consult with each other easily every day. The doctor or medical officer needs to be familiar with the IMAI-PEN Chronic Care Manual but also needs to be guided by other national and WHO chronic disease guidelines for senior clinicians. The MD/MO will need additional training to be able to supervise, consult, review cases, and to take on overall clinical responsibility for the chronic disease care delivered by the clinical team.

At a health centre without a doctor or medical officer, the nurse and clinical officer will need to stay in contact with the MD/MO on their clinical team, by referral and back-referral and by **regular communication**. To allow access to treatment through health centre-based clinical teams outside the district towns, it will be necessary to consult by mobile phone, landline or radio when problems arise. It will also be important to arrange for visits by the MD/MO to the health centre. These are essential to reduce the number of referrals. Although some referrals are essential, referral needs to be kept to a reasonable proportion of cases to be practical.

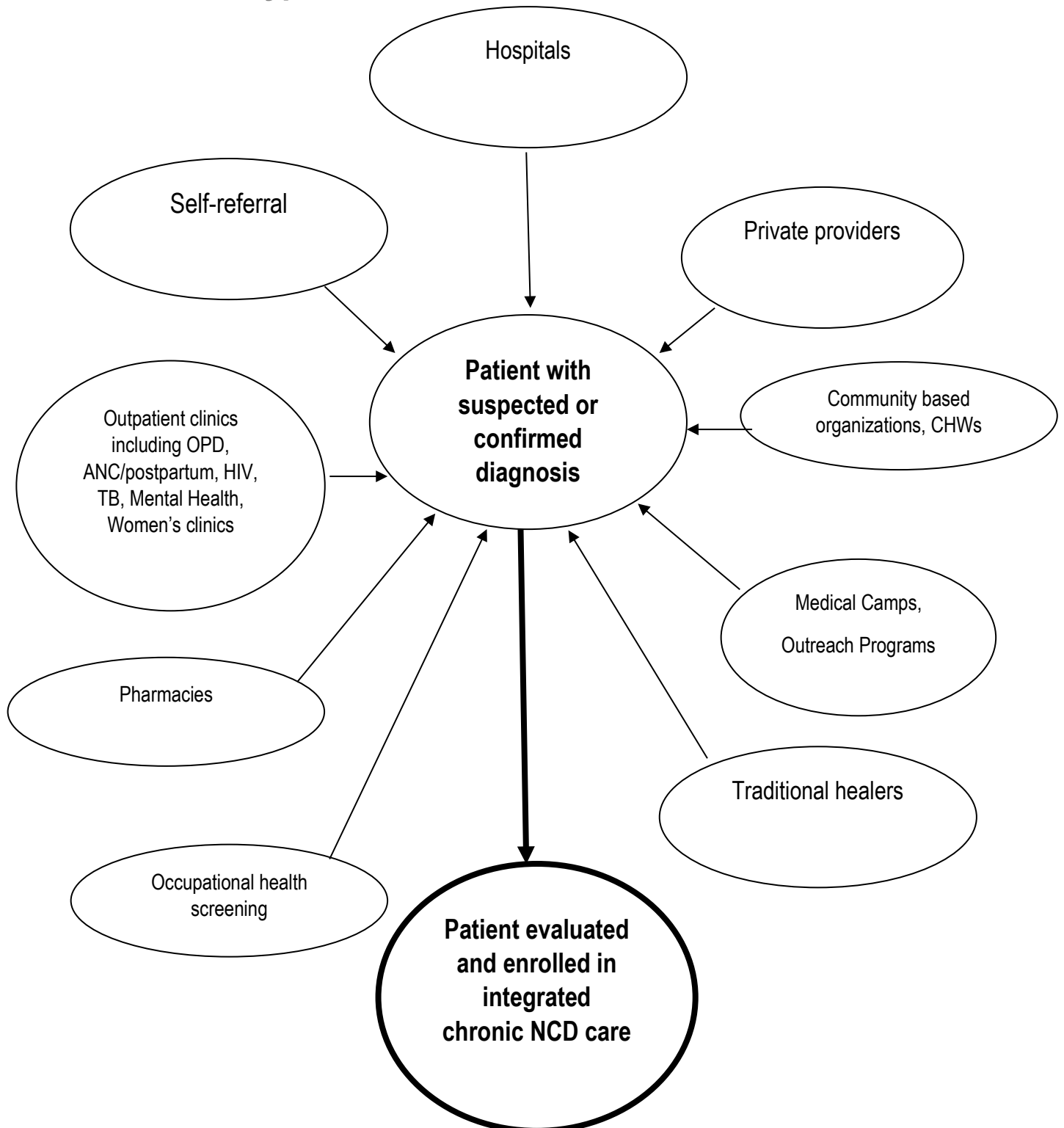
A general principle of good chronic care:

10. Assure continuity of care.

Continuity of care refers to the provision of stable and uninterrupted care for patients throughout the span of their disease. This is especially important in patients with chronic diseases who often suffer from the effects of their disease for a lifetime.

Continuity of care prevents hospitalizations, reduces health care costs, and can prolong the life of patients. It ensures that patients receive continuous support and treatment, resulting in comprehensive disease management and the development of a treatment partnership with their health care providers.

3.3 Entry points into chronic care for patients with elevated CVD risk, hypertension, diabetes mellitus, asthma, COPD



Exercise 2:

Discuss the entry points into chronic NCD care.

Facilitator Summary Points

- Chronic care is different from acute care which uses medical care to cure or fix acute problems or injury while chronic care requires repeat visits over time.
- The goal of chronic care is to improve the **quality of life** for people with chronic diseases and **prevent complications or worsening of disease**.
- People-centred care is important as it puts the comprehensive needs of people and communities at the centre of the health systems. It empowers people to have a more active role in their own health.
- The general principles are focused mainly on the organization of the primary health centre and the interaction of the first-level health worker and the patient.

Chapter 4: Triage

Duration:

55 minutes

Materials:

-Blank flipchart/markers

-Participant handouts

-Patient Cards (enough for each participant)

Wall charts:

-CVD Risk Assessment (in development)

Preparation:

-Review this guide and participant handouts

Chapter Overview:

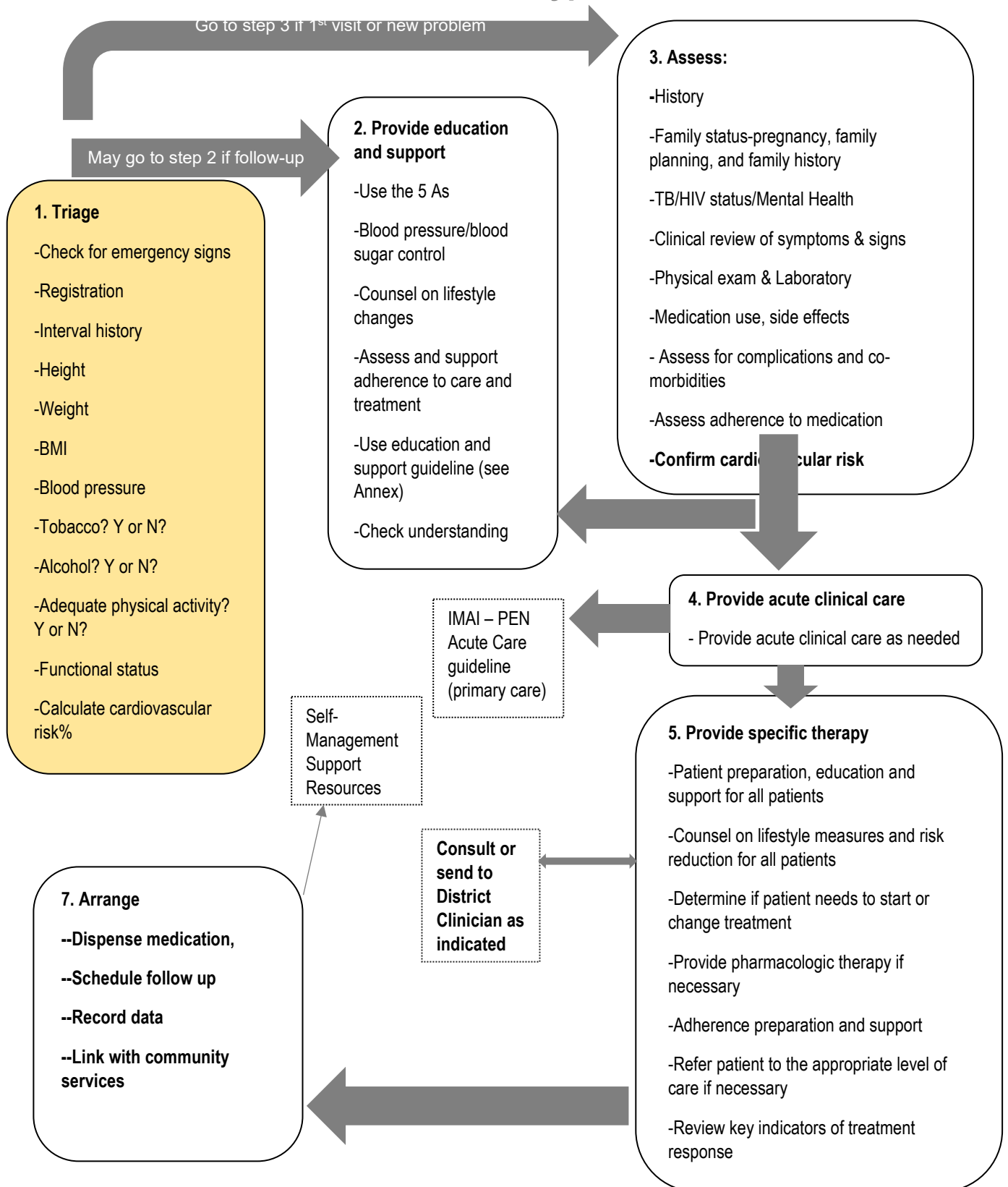
- Sequence of Care
- Introduction to Triage
- Check for emergency signs
- Triage the patient and use the patient card

Learning Objectives:

- Learn the sequence of care
- Learn how to triage the patient for integrated NCD chronic care

Content	Methods	Time
Sequence of care	Group discussion	10 minutes
Introduction to triage	Explanation	10 minutes
Check for emergency signs	Group discussion	5 minutes
Triage the patient and use the patient card	Explanation, exercises	30 minutes

4.1 Sequence of care for the assessment and management for elevated cardiovascular risk, hypertension or diabetes



4.2 Overview of triage

- 1. Check for emergency signs—See IMAI Acute Care for management steps, first stabilise and refer if needed.** If the triage worker observes any of the following signs, s/he should call the health worker for help.
 - Airway- obstructed (noisy)
 - Breathing
 - Circulation
 - Unconscious/ Convulsing
 - Pain
- 2. Greet the patient**
- 3. If new patient, register patient**
- 4. If follow-up, retrieve patient record/file**
- 5. Measure weight**
 - Record in patient record
- 6. Measure height**
 - Record in patient record
- 7. Calculate body mass index**
 - Record in patient record
- 8. Measure blood pressure (and blood sugar if diabetic and fingerstick glucose if available)**
 - Record in patient record
- 9. Ask patient if he/she has used tobacco in the past 12 months**
 - Record 'Yes' or "No" tobacco use in patient record
- 10. Ask patient if he/she uses alcohol in last 30 days**

If yes, how often and record number of units per day.*
- 11. Ask patient how much physical activity they do**
 - Adequate physical activity includes 30 minutes of physical activity 5 days a week or 2.5 hours/ week
 - Physical activity includes work around the house, active jobs, and all types of exercise
 - Record "YES" if patient meets criteria or "NO" if not adequate physical activity in patient record
- 12. Determine reason for visit**
 - Ask patient why they came to see you and what they are hoping to get out of the visit
- 13. For new patients, ask about any concerns they have**
 - This may refer to concerns about their health specifically, or any wider concerns pertaining to their life in general or the workings of healthcare system

14. For follow-up, take interval history→see box below

- The interval history is the history since the patient was last seen by a healthcare professional
- The aim of taking an interval history is to find out if the patient's condition has improved, worsened, or stayed the same since the last visit
- This interval history should always be compared to previous health status to see whether or not the disease is well controlled

* One unit (drink) = half pint beer/lager (5% alcohol), 100 ml of wine (10% alcohol), spirits 25 ml (40%alcohol).

4.3 Triage the patient

ASK participants the meaning of triage.

TRIAGE- Is the SORTING of patients into PRIORITY GROUPS according to their NEED and the SEVERITY of their condition

EXPLAIN that the auxiliary staff are the first ones to make contact with the patient. It is therefore essential that symptoms or signs of emergent conditions are identified and a clinical health worker is called for help.

EXERCISE-GROUP DISCUSSION

-What types of signs and symptoms will make you think that the patient has an emergency condition?

-Why is triage important?

EXPLAIN that if the triage worker observes the following signs, she should **call the health worker for help**:

- Airway problem- blocked or noisy breathing, choking
- Breathing problem- difficulty with breathing, hunched over, having a problem speaking due to difficulty with breathing, face looks pale or blue or pursed lips, wheezing
- Circulation problem- bleeding, cold clammy skin, dizzy or very weak, low blood pressure
- Unconscious or convulsing- may be passed out or delirious, uncontrolled shaking or seizure
- Severe pain- concern about severe chest pain or severe headache or any pain that is debilitating and affecting the person's ability to function

The auxiliary worker may also see patients with the following signs at triage and should alert the health worker.

- Very high blood pressure $\geq 180/110$ or very low blood pressure systolic < 90

- High glucose 16.7 mmol/l (300 mg/dl) or very low glucose <3.3 mmol/l (60 mg/dl)

EXERCISE-GROUP DISCUSSION

Ask how triage is done in their facilities. Who does the work of triage? Is it the same for all patients or different for NCD clinic? Also discuss the sequence of care. How is the sequence of care done in their facilities? Does everyone see the clinical health worker at each visit? What if only a blood pressure recheck is needed or counselling?

4.4 Greet and register the patient—Record on patient card

EXPLAIN that the patient may be registered by the clerk of initial health worker and that information may be filled out at the top part of the Integrated NCD patient card.

4.5 Interval history—Record on patient card

EXPLAIN that for new patients, the health worker should ask about why the patient came to the health centre. Is there any problem that they need to discuss with the clinical health worker?

DISCUSS the interval history.

The **interval history** is what occurs in the time between the last visit and the current visit. The health worker should ask the patient if anything has happened between the last visit and today. Any new problems, new medications, problems with medications or treatment plan, hospital visits, etc?

EXPLAIN that follow-up is key to good chronic care. Obtaining the interval history allows a lead into targeted counselling to help the patient overcome any obstacles with the treatment plan.

4.6 Measure height, weight and calculate BMI—Record on patient card

REMEMBER the body mass index or BMI is a measure of body fat based on height and weight.

1. Measure weight in kg. Record on the patient card.
2. Measure height in cm. Record on the patient card.
3. Now use the BMI table (in handouts) or calculate BMI
4. Record this number on the patient card.

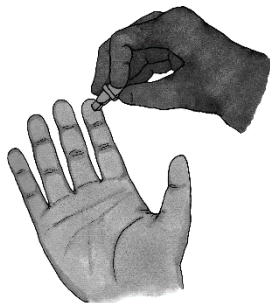
BMI Categories	BMI
Underweight	Below 18.5
Normal weight	18.5-24.9
Overweight	25-29.9
Obese	30 and above

4.7 Measure blood pressure—Record on patient card

If the 1st reading is raised, repeat after at least 2 minutes. If the 2nd reading is also raised, let the patient sit quietly for 30 minutes and then repeat.

Note: During the skill sessions, we will demonstrate and practice measuring blood pressure on each other.

4.8 For facilities where fingerstick glucose available and auxiliary staff are able to check during triage



How to perform Fingerstick Test

1. Identify the finger for the stick: the best locations are the 3rd and 4th finger of the non-dominant hand
2. Clean fingertip with alcohol wipe
3. Wipe dry with clean gauze or allow to air dry
4. Using a sterile lancet, make a skin puncture off to the side of the center of the finger
5. Wipe away the first drop of blood (it tends to contain excess tissue fluid)
6. If necessary, apply pressure to the surrounding tissue until another drop of blood appears
7. Place testing strip in glucometer, bring strip to the side of the drop of blood to allow the target area to fill with blood
8. Clean patient's finger and bandage if necessary
9. Read blood glucose level from glucometer and record on patient card.

Note: These skills may be practiced during skill station

4.9 Ask about lifestyle-tobacco, alcohol, physical activity— Record on patient card

Discuss how to ask about smoking:

- **ASK:** Have you smoked or used tobacco in the last 12 months?
- Record 'Yes' or 'No' if any smoking in last 12 months. This includes if someone tells you that he or she quit smoking in that timeframe. If that is the case, also record "YES" and the quit date. Record "NO" if the patient does not smoke but make sure to write in counselling section if other tobacco use.
- Also ask if they are exposed to second-hand smoke in the home.
- Smoking should be asked about at every visit.

Discuss how to ask about alcohol:

- **ASK:** Have you had any alcohol in the last 30 days?
- Record "YES" or "NO" on the patient card.

Discuss how to ask about **adequate** physical activity:

- Patient should complete at least 30 minutes of physical activity 5 days a week or 2.5 hours/week
- Physical activity includes work around the house, active jobs, and all types of exercise
- Record "YES" or "NO" if patient meets criteria for adequate physical activity.

4.10 Determine functional status—Record on patient card

- Functional status is how well a person is able to complete their activities of daily living. A person may be fully functional or living with some impairment
- Ask about function status and record on patient card at initial visit and annually unless there is a change before that time.
- Record the following letter whether the patient is able to:
 - i. Work, go to school, do housework, harvest, or play (if child) (**W**)
 - ii. Ambulatory (able to walk around) but is not able to work (**A**)
 - iii. Bedridden (**B**)

4.11 How to fill out the patient card

DEMONSTRATE how to fill out the NCD patient card.

HOW TO FILL OUT THE NCD PATIENT CARD: DIABETES, HYPERTENSION or ELEVATED CARDIOVASCULAR RISK

A sample patient card allows the health care team at the facility keep track of all care, treatment and follow-up (clinical, lifestyle interventions and psychosocial) over time in one place. This card provides quick access to important information and allows for communication of the patient's clinical status between the health care team and therefore ensure continuity of care.

The front of the card is the **front summary page** that includes key patient information including demographic and contact data, patient medical history and complications, comorbidities, follow-up status, and important data collected on a three- and 12-monthly basis and any hospitalizations. The inside **encounter pages** is where the health worker fills information during a clinical visit – one row per visit – often using short-hand codes listed in boxes at the bottom of the second encounter page. Some of this information will also be transferred to the summary page (e.g. updated complications, follow-up status). Photocopies of this page may be used and inserted as they are filled up. Each page is able to accommodate 19 visits (number of rows). The **back follow-up page** consists of key education and counseling interventions that are necessary for patient follow-up. There are three sections (1 basics and healthy lifestyle; 2 treatment preparation and ongoing support and monitoring; and 3 home-based care and support) and multiple columns where brief notes may be written for future follow-up. Only relevant parts of this section will be completed at each visit.

Instructions for filling in the form:

1. Fill in the patient's name, age, sex, date of birth, enrolment date, address, supporter information, and community health worker information (if available). This can be done by any member of the health care team.
2. Record family history. Tick premature cardiovascular disease (CVD) if heart attack or stroke in 1st degree relative-male < 55 years, female <65 years.
3. Fill in drug allergies and medications that the patient is taking. Fill out any labs that may have come with patient, given to you by the laboratory or that you have obtained through point of care testing.
4. Turn the page to the encounter pages, fill out visit date. If patient has been referred to the health centre from another facility or the community, information may be filled out in the first encounter row and indicate "referral" to the left of the visit date.
5. Fill in patient height in box, weight on encounter line and calculate BMI and write below weight on same encounter line. Circle BMI if obese category.
6. Record blood pressure measurements (two readings) and the blood glucose (fasting preferred; if diabetic or initial/annual visit for everyone else).
7. Record patient's response to questions about tobacco, physical activity and alcohol use. Also record patient's functional status if initial or annual visit (or change) on 1st page. The rest of this page can be filled out by the clinical health worker (HW).
8. The health worker should now be able to fill out the rest of the first page including the patient's pertinent medical history such as history or prior cardiovascular disease as well as other medical problems, any remaining investigations or recent hospitalizations/referrals.

9. The back counselling and education page can be filled out by any member of the health care teams- this includes ancillary staff, community health worker, the doctor or the nurse.

EXERCISE

Practice filling out the card using that patient monitoring scenarios.

Summary

1. The sequence of care allows for an organized approach for the patient to obtain comprehensive care by different members of the clinical team for triage, assessment, treatment, and patient education and support in integrated NCD chronic care.
2. Triage is the process of sorting of patients into priority groups according to their need and the severity of their condition. For integrated NCD care, triage is important to identify acute problems and to help in the initial assessment of the patient before seeing the clinical health worker or to send for education and support.
3. Using the patient card, register the patient and triage the patient.
4. During triage, measure height, weight, calculate BMI, measure blood pressure and (blood sugar if diabetic and have fingerstick glucose), and determine the reason for the patient visit.
5. During triage, assess smoking, alcohol and physical activity and functional status.

Chapter 5: Educate and support the patient at every visit

<p>Duration: 60 minutes</p> <p>Materials: -Blank flipchart/markers -Participant handouts -Stretch resistant measuring tape</p> <p>Wall charts: -CVD Risk Assessment (in development)</p> <p>Preparation: -Review this guide and participant handouts -Post Wall charts</p>	<p>Chapter Overview:</p> <ul style="list-style-type: none"> • Knowledge about condition and steps to manage to provide patient with education around their condition • Counselling patient about diet, physical activity and reduction of harmful use of alcohol and tobacco cessation. • Support the patient for treatment and adherence and follow-up • Support the patient with self-care <p>Learning Objectives:</p> <ul style="list-style-type: none"> • Understand how to counsel patients about their chronic condition. • Be able to provide education to the patient regarding lifestyle changes • Learn how to motivate and support the patient with self-care
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Content	Methods	Time
Counselling	Group discussion	10 minutes
Lifestyle management	Exercises	10 minutes
Medication adherence, side effects, and follow-up	Group discussion	10 minutes
Strategies/tools to overcome barriers		10 minutes

5.1 Provide education and support

2. Provide education and support

- Use the 5 As
- Blood pressure/blood sugar control
- Counsel on lifestyle changes
- Assess and support adherence to care and treatment
- Use education and support guideline (see Annex)

SHOW the counselling sections of their handouts. **EXPLAIN** For all patients enrolled in chronic care at each visit- use the applicable sections based on patient diagnosis and treatment status. Point out that these sections are also in Annex A of the *Integrated NCD Chronic Care* module).

EXPLAIN that counselling should be given in simple and clear messages that is tailored to the patient's individual condition.

The boxes are specific counselling messages that should be used when talking to patients about their condition. It is important that the entire health care team use the same messages, so the patient hears the same information from all members of the clinical team.

USE Annex A of the *Integrated NCD Chronic Care* module to go through these sections.

5.2 Lifestyle interventions

EXPLAIN: The components of implementing lifestyle changes include the following:

- Promote a heart healthy diet for all patients
- Increase physical activity
- Reduce risk- stop tobacco and avoid harmful use of alcohol

ASK a participant to read **BOX A1** aloud.

EXPLAIN that these messages should be consistent for all patients and can be adapted for local foods and patient's cultural/religious beliefs. Patients with diabetes and hypertension, dyslipidaemia and diabetes should in addition follow messages in BOXES A2, A3 and A4.

ASK a participant to read **BOX A2**.

ASK: What are examples of processed foods here?

ASK another participant to read **BOX A3**.

ASK: What are common meats eaten here? Which meats are considered lean? What is a sample plan that could be given to a patient to follow a low fat diet- breakfast, lunch, dinner, snacks?

ASK another participant to read **BOX A4**.

EXPLAIN that diabetics need to really be aware of how their food is cooked and what they are eating if not eating at home. A low glucose diet does not only mean to not eat sweets. It is important for these patients to understand what foods may have sugar and to be aware to carry snacks when they are on medicines that could lower their blood sugar.

DISCUSS the diabetic plate.

ASK: What is a sample plan that could be given to a patient to follow a low fat diet-breakfast, lunch, dinner, snacks?

DISCUSS physical activity.

ASK: What are examples of moderate physical activity?

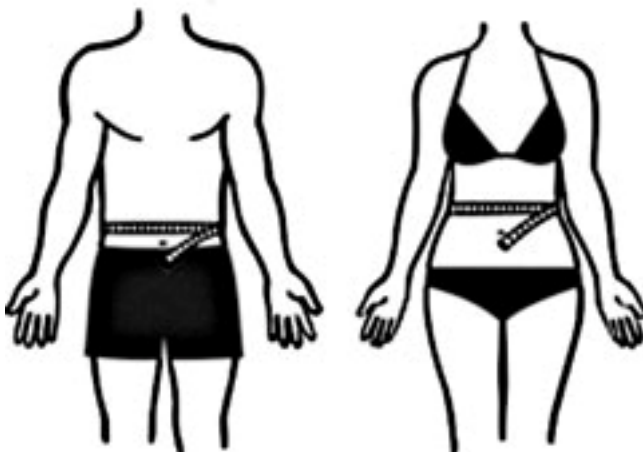
ASK another participant to read **BOXES A5 and A6**.

ASK: Why do we advise diabetics to wear proper footwear?

DISCUSS overweight and obesity.

EXPLAIN that we learned about calculating a body mass index to determine if someone is overweight or obese. We can also measure waist circumference to determine obesity (central or abdominal obesity). Both are important measures that if increased are associated with increased risk of disease, complications and death.

EXPLAIN how to measure waist circumference.



How to measure waist circumference (to the nearest 0.5 cm)

1. Ask patient to stand with feet close together, arms at the side and body weight evenly distributed.
2. Tell the patient to be relaxed and take measurement at end of natural breath.
3. Measure at the midpoint between the lower margin of the least palpable rib and the top of the iliac crest, at a level parallel to the floor.
4. Use a stretch-resistant tape that is wrapped snugly around the patient, but not to the point that the tape is constricting.
5. Repeat measurement twice; if the measurements are within 1 cm of one another, calculate the average. Repeat measurement if the difference between the two measurements exceeds 1 cm.

ASK a participant to read BOX A7.

DISCUSS WEIGHT LOSS.

Now **DISCUSS** tobacco cessation and harmful use of alcohol.

EXPLAIN that tobacco use and/or heavy alcohol use can lead to lung problems such as cancer or COPD, heart problems, stroke, liver disease and other cancers.

Go through **BOX A9** with participants.

Class Activity

- 1) Ask participants to separate in pairs. One person is the health counsellor and the other person is the patient who smokes.
- 2) Have them practice using this 5As flow chart.

ASK: What is a harmful use of alcohol? What is alcohol dependence?

ASK: What are signs of withdrawal?

ANSWER: Symptoms can begin as early as 2 hours after the last drink but usually occur within 8 hours.

Symptoms range from mild anxiety and shakiness, sweating or clammy skin, nausea, vomiting to severe complications such as seizures and delirium or changes in mental status (delirium tremens). Patients may describe confusion or have hallucinations (see things that are not there). They may have a fast heart rate or fever.

Go through **BOX A10** with participants.

ASK: Does anyone have experience with asking about alcohol or alcohol reduction counselling? What has worked well?

5.3 Provide education about chronic disease diagnosis

EXPLAIN: Patient may have more than one diagnosis.

ASK: What is diabetes?

Diabetes is a chronic disease, which occurs when the pancreas does not produce enough insulin, or when the body cannot effectively use the insulin it produces. This leads to an increased concentration of glucose in the blood.

ASK: What is blood sugar?

Blood sugar or blood glucose refers to sugar that is transported through the bloodstream to supply energy to the cells in our bodies. Our body digests carbohydrates into glucose, a simple sugar that can easily convert into energy. The blood sugar concentration or blood sugar glucose level is the amount of glucose (sugar) present in the blood. Glucose can only enter cells if there is insulin in the bloodstream too.

After we eat, blood sugar concentrations rise and our pancreases release insulin automatically so that the glucose can enter our cells, as more and more cells receive glucose our blood sugar levels come down to normal. When there is a problem with insulin, the sugar stays in the blood instead of going into our cells

ASK: What is the goal of diabetes treatment?

The goal of treatment of patients with diabetes is to achieve as near normal blood glucose as possible, control of blood pressure and reduction in blood lipids (cholesterol) where necessary. Achieving these goals reduces and/or delays the risk of developing complications associated with these conditions.

ASK participants to read BOX A11.

Now **DISCUSS** hypertension.

ASK participants to read BOX A12.

5.4 Patient preparation, education and support for treatment

EXPLAIN that it is important for patients to identify that they have the chronic condition, hypertension or diabetes and that enrolment into chronic care means that they will need to come for regular follow-up.

DISCUSS preparation for adherence-see Section 5.5 p.37.

ASK a participant to read the last section in **BOX A13**.

Now **DISCUSS** diabetic foot care and prevention.

ASK a participant to read **BOX A14**.

ASK: What is your experience with insulin? **DISCUSS** the advice that is needed to support patients who are on insulin- see **BOX A15**.

ASK a participant to read **BOX A15**. **DISCUSS** the advice that is needed to support patients who are on antihypertensive.

Class Activity

Have participants separate into pairs and role play supporting patients for treatment adherence. Divide the room in half and have 1 group role play a scenario with a patient who was just diagnosed with diabetes and needs to be supported to provide information about diabetes, the importance of foot care and prevention and to start metformin. The other group should role play a patient who is just diagnosed with hypertension and needs to start medicines.

After the activity, **ASK**: what worked well to help patients agree to the treatment plan? Do you think they were able to follow your advice? For participants who were playing the patients, what would be helpful for you to improve your understanding and ability to adhere to the treatment plan?

Protocol 2: Asthma and Chronic Obstructive Pulmonary Disease

Chapter 6: Triage and Introduction to asthma/COPD

6.1 Triage

Triage and registration for patients with asthma and COPD are the same as Protocol 1 except for two additions- Respiratory rate (RR) and pulse oximetry (SpO₂).

ASK participants to look at their chronic care module Protocol 2 Triage P66.

READ ALOUD the steps for triage. **EXPLAIN** that participants will learn and practice respiratory rate and pulse oximetry in the skill stations.

EXPLAIN that new patients will need to see the clinical health worker.

Participants should ask the following questions and fill out the NCD patient card:

- *Any problems or concerns that you have today?*
- *What medications do you take? Do you take any traditional remedies? Record in patient card, including doses if available.*
- *Do you have any allergies to medications?*

For follow-up visits, they should ask:

- *Any problems or concerns that you have today?*
- *Have you had any medication changes or new medications started since the last visit? Record in patient card.*
- *Do you have any allergies to medications (or new allergies if allergies listed already in patient card)?*
- During the follow-up visits, the auxiliary HW will need to decide if patient needs to see clinician on this visit. Patient should see the clinician:
 - For scheduled clinical visit- for example, the clinician has asked them to follow-up for clinical monitoring of their condition
 - For any new symptoms

How to determine respiratory rate

A person's respiratory rate is the rate at which a person breathes. In order to determine the respiratory rate, count the number of times the chest rises in 1 minute. In adults, the normal respiratory rate is 12-20 breaths per minute. The rate is considered abnormal if less than 20 or above 25 and can indicate that the patient may be sick.

For example, the rate can increase when a person is having problems with their breathing or with fever and can decrease with neurological problems or toxins. Be aware that other conditions such as pain and anxiety may also increase the respiratory rate.

Note: During the skill sessions, we will demonstrate and practice triaging patients with respiratory problems.

How to measure oxygen saturation (SpO₂)

A pulse oximeter measures oxygen saturation of haemoglobin in the blood by comparing absorbance of light at different wavelengths across a translucent part of the body. Pulse oximetry is very easy to use, and is the best method available for detecting and monitoring **hypoxemia (low oxygen saturation)**.

Remember, the respiratory rate increases if the patient has difficulty breathing or is not getting enough oxygen. A pulse oximeter helps quantify the oxygen saturation. If it is low i.e. <90%, the person is not getting enough oxygen and needs treatment with oxygen. If not available at health facility, the patient should be referred immediately. Be aware that patients who are in respiratory distress and not getting enough oxygen may also become very agitated, combative, confused, or lethargic.



Exercise

- Demonstrate how to count respiratory rate and to use a pulse oximeter.
- You should practice using the pulse oximeter on yourself and your colleagues so that you understand how to use it.
- Also, you should practice counting the respiratory rate on stable patients first so you can quickly recognize the difference between normal and abnormal respiratory rates.

6.2 Chronic respiratory diseases

EXPLAIN

Chronic respiratory diseases are problems that affect breathing. They include problems that affect the structures of the lung and the airways.

Problems include chronic obstructive pulmonary disease (COPD), asthma, respiratory allergies, pulmonary (lung) hypertension and lung problem related to work environment (occupational lung disease).

Breathing problems are among the major causes for patients to seek health care consultation. Because of their chronic nature, these conditions evolve slowly and provide opportunity for prevention. Risk factors include tobacco smoke, air pollution, dust and occupational chemicals.

ASK: What types of symptoms do you see with breathing problems?

- Shortness of breath or problems catching the breath
- Cough
- Wheezing
- Sputum production
- Chest pain

This Protocol 2 will focus on the two of the most common chronic respiratory diseases that affect people globally: asthma and chronic obstructive pulmonary disease (COPD). The next several sections will focus on the approach and care of these patients. Care for these patients requires a long-term and routine approach. Treatment should focus on improving symptoms and increase quality of life.

6.3 Asthma

Asthma is a disease of the airways in the lung. The airway becomes inflamed, irritable and narrow in response to inhaled triggers (irritants) such as:

- Pollen, mould, dust mites; environmental tobacco smoke, smoke from wood or other biomass fuel, household aerosols, chemical irritants in workplace
- Viral or bacterial infection
- Exercise
- Weather changes
- Emotions or stress

The combination of these factors lead to symptoms such as:

- shortness of breath
- wheeze, and
- cough with sputum

There are times without symptoms i.e. normal periods.

6.4 Chronic obstructive pulmonary disease (COPD)

COPD is a chronic lung disease that has airflow narrowing or limitation that gets worse over time. There are risk factors that can lead to a person having COPD.

These are:

- Smoking tobacco
- Workplace chemicals and dust (irritants, fumes, vapours)
- Indoor/outdoor air pollution (e.g. biomass fuel used for cooking/heating indoors especially in areas with poor ventilation)
- Second hand smoke exposure

Common symptoms include:

- Chronic cough
- Breathlessness
- Increased amount of sputum
- Wheeze
- Limitations in exercise and activity over time

6.5 Patient preparation, education, and support

EXPLAIN that the key to asthma and COPD management will be patient education.

Counsel on acknowledgement that they have a chronic condition and that self-management is essential to treatment and help them gain the skills for self-management.

REFER to Chronic Care module Annex A1-A19. Go through counselling sections.

Asthma prevention/limit COPD progression

DISCUSS asthma prevention. **REFER** to Chronic Care module A20.

ASK: What steps should a patient take to prevent asthma? Think about triggers for asthma.

REFER to Chronic Care module A20.

SAY: Think about the risk factors for COPD and **ASK:** what prevention strategies do you think will help limit the progression of COPD?

REFER to Chronic Care module A23. Point out the tobacco cessation counselling box again (A9)

Treatment for asthma/COPD

DISCUSS that follow-up at the health facility will be important for patients. In general they will be asked to return to the health centre by the clinical health worker every 1-3 months and they should come. This follow-up is important for clinical monitoring. It

is better for them to see the health worker and go through the assessment to get the proper treatment for their condition.

EXPLAIN that treatment relies on the correct medicines to be taken. For both asthma and COPD most of the medicines that work are ones that should be inhaled-taken through an inhaler device so the medicines go directly to the lungs. The medicines only work if the patient is using the inhaler properly so it is very important, as the HW, that you teach patients good inhaler. A spacer can help patients to inhale the medicine properly.

DEMONSTRATE how to use the inhaler- REFER to P85 for use of inhaler and spacer. The HW should encourage the use of the spacer.

REFER to A21 for how to make a spacer.

EXPLAIN to the participants that it is important that this technique is reviewed with the patient at every counselling visit. They should also check the patient's understanding and have the patient show the HW how they use the inhaler.

DISCUSS the different medicines for asthma and COPD and the importance of taking the medicines as prescribed by the clinical HW to prevent "attacks-" episodes where they cannot breathe.

About the drugs*:

- **Reliever drugs** such as Salbutamol (inhaler) help treat symptoms quickly by opening the airway.
- Ipratropium is another inhaler medication that also helps to open the airways (bronchodilator) and also reduces mucous production. It does not work as quickly as salbutamol but lasts longer which is why it also works well with salbutamol.
- **Controller or preventer** drugs need to be taken every day to keep the condition under control. These do not work as fast as salbutamol but in the long term help with reducing symptoms. Beclometasone inhaler and prednisolone (oral) are both **controller or preventer drugs**.
- There are other **controller drugs** that may sometimes be used- long-acting beta agonist (LABA) such as formoterol or salmeterol (inhaler) or leukotriene antagonist such as montelukast (oral)

It is important to explain the possible side effects which include:

Salbutamol inhaler- feel like heart racing, shakiness

Beclomethasone inhaler-mild sore throat, hoarseness, and occasional infection- it is important to **advise** patient to use spacer and to rinse out mouth after using inhaled corticosteroid.

Systemic corticosteroid (prednisolone)- if used for a long time have risks for infections, diabetes and other problems which is why a patient who needs this often needs referral for further evaluation.

EXPLAIN the 3 zones of asthma self-management -see A5.

DISCUSS COPD strategies in A23.