



Integration of package of essential non-communicable diseases interventions in primary health care system

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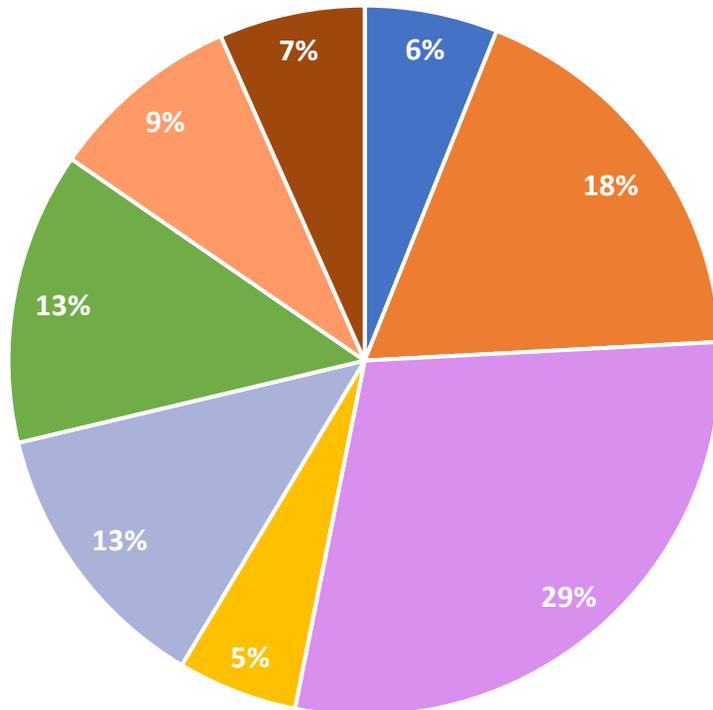
01 August 2022

PRESENTATION OUTLINE

- Background
- WHO PEN and its components
- Evidence of implementing WHO PEN in different countries
- PEN and CNCDN activities
- Challenges of integrating WHO PEN
- Ways to overcome the challenges
- Adapting WHO PEN

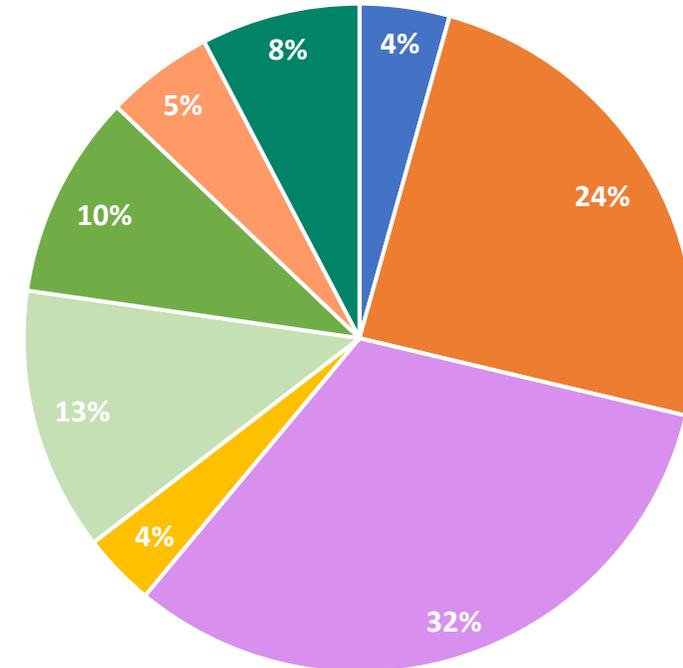
THE BURDEN OF NCD IS HUGE.....

Hypertension (32,314,685)



Diabetes (14,727,890)

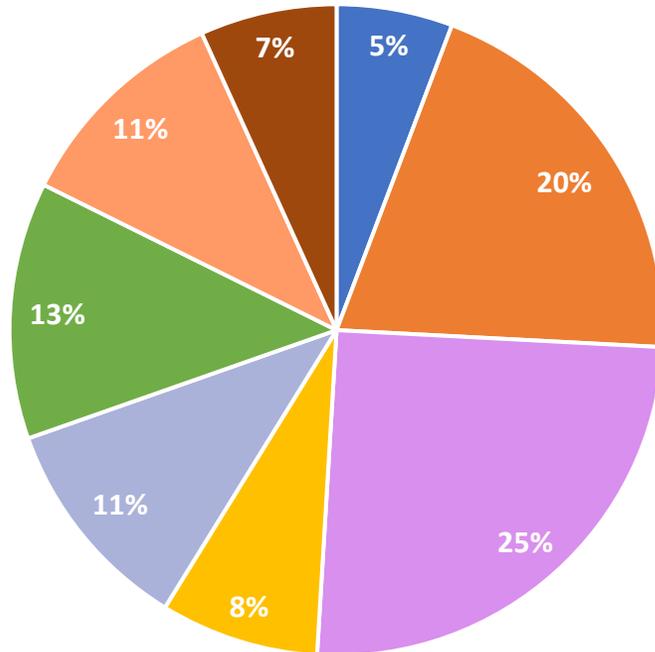
- Barisal
- Chattogram
- Dhaka
- Mymensingh
- Khulna
- Rajshahi
- Rangpur
- Sylhet



*Estimates based on 18+ population in Bangladesh and division-specific prevalence estimates

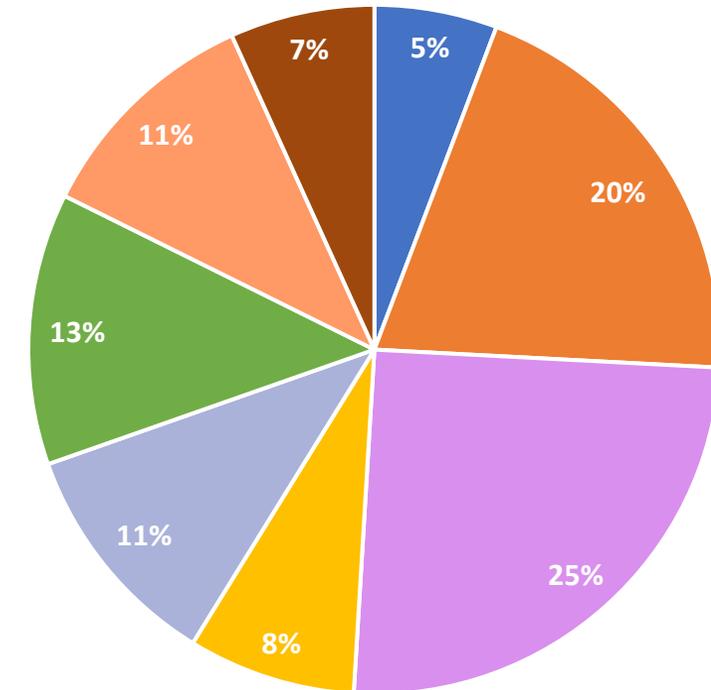
THE BURDEN OF NCD IS HUGE.....

Asthma/COPD
(14,211,666)



Mental Health Problems
(19,100,479)

- Barisal
- Chattogram
- Dhaka
- Mymensingh
- Khulna
- Rajshahi
- Rangpur
- Sylhet



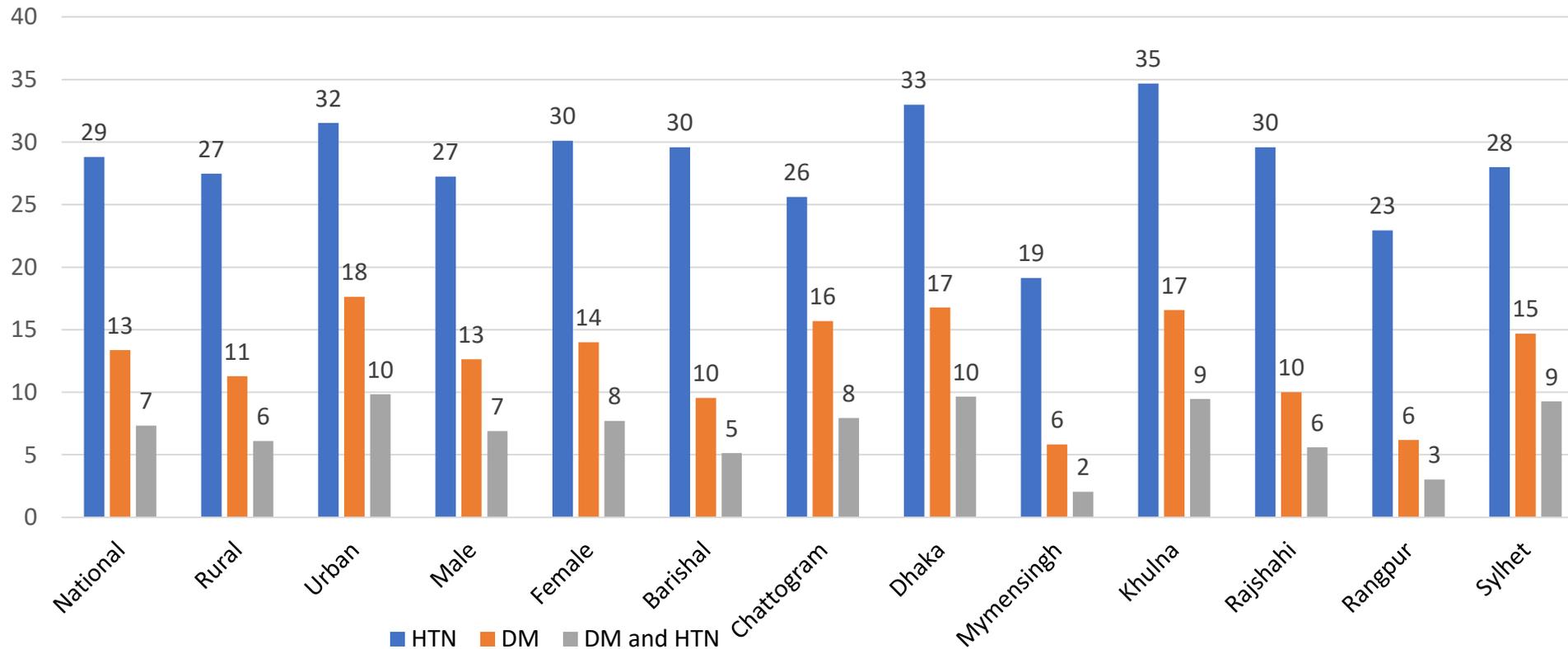
*Estimates based on 18+ population in Bangladesh and division-specific prevalence estimates

CANCER STATISTICS

Summary statistic 2020

	Males	Females	Both Sex
Population	83 259 108	81 430 275	164 689 383
Number of new cancer cases	88 075	68 700	156 775
Age-standardized Incidence rate (World)	119.3	92.4	106.2
Risk of developing cancer before the age of 75 yrs (%)	12.9	9.8	11.5
Number of cancer deaths	63 541	45 449	108 990
Age-standardized mortality rate (World)	78.1	62.9	75.3
Risk of dying from cancer before the age of 75 yrs (%)	9.7	7.0	8.4
5-year prevalent cases	139 147	131 719	108 990
Top 5 the most frequent cancers excluding non-melanoma skin cancer (ranked by cases)	Oesophageus Lung Lip, oral cavity Hypopharynx Stomach	Breast Cervix uteri Oesophageus Gallbladder Lip, oral cavity	Oesophageus Lip, oral cavity Breast Lung Cervix uteri

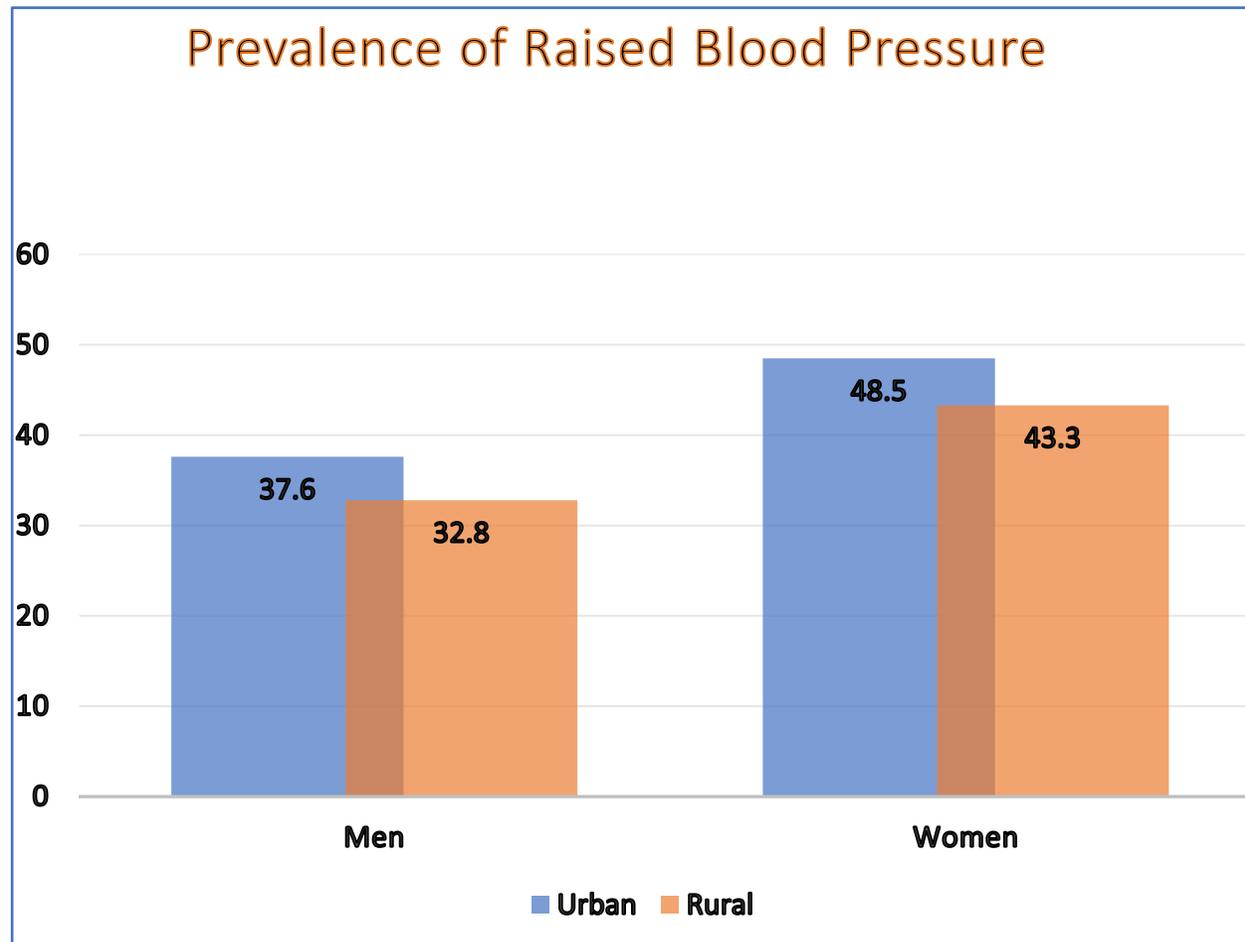
PROPORTION OF 18+ PARTICIPANTS SUFFERING FROM HYPERTENSION, DIABETES, AND BOTH HYPERTENSION AND DIABETES



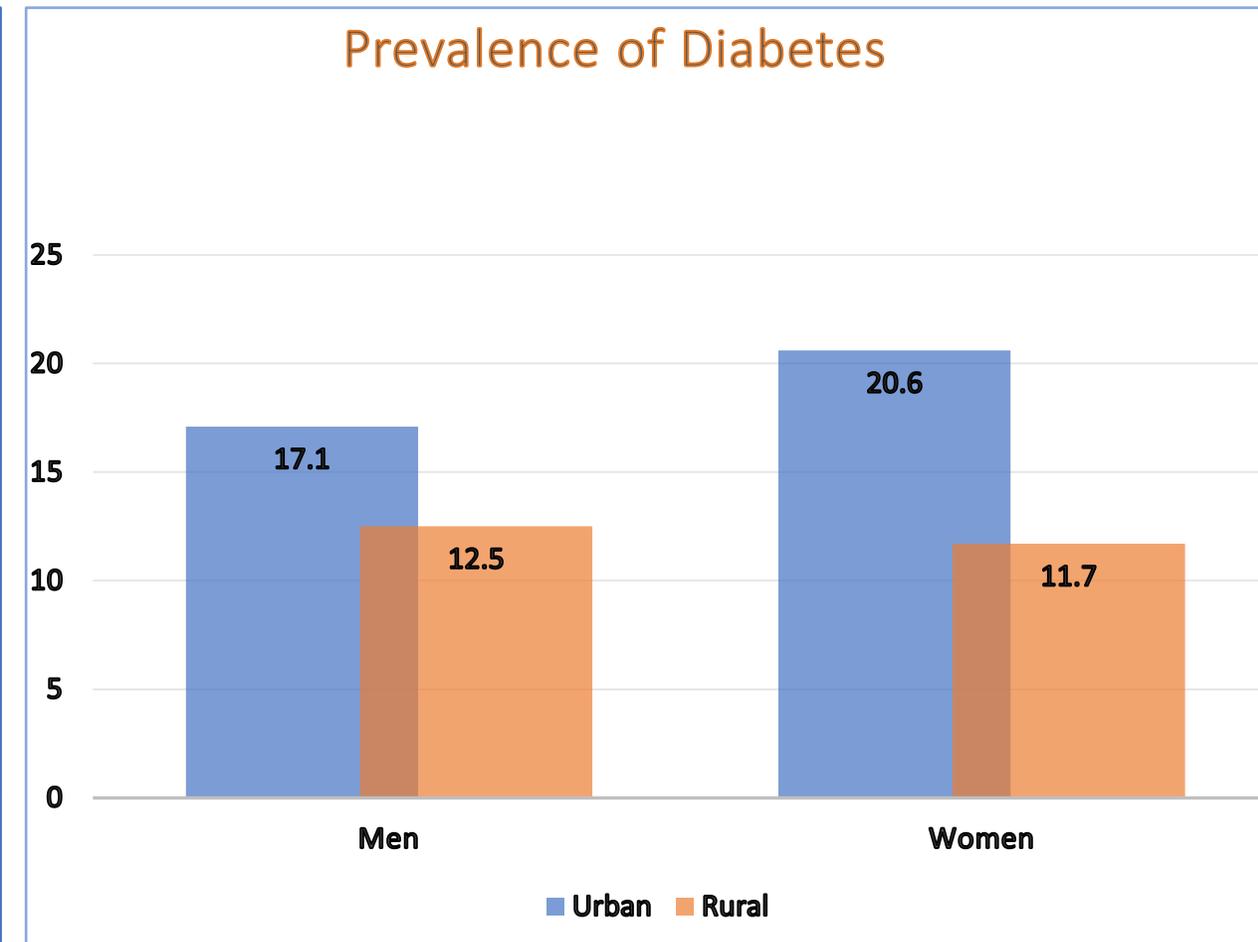
*Preliminary data from NCD surveillance 2019-2021

PREVALENCE OF RAISED BP AND DIABETES AMONG ≥ 35 YEARS WOMEN and MEN

Prevalence of Raised Blood Pressure

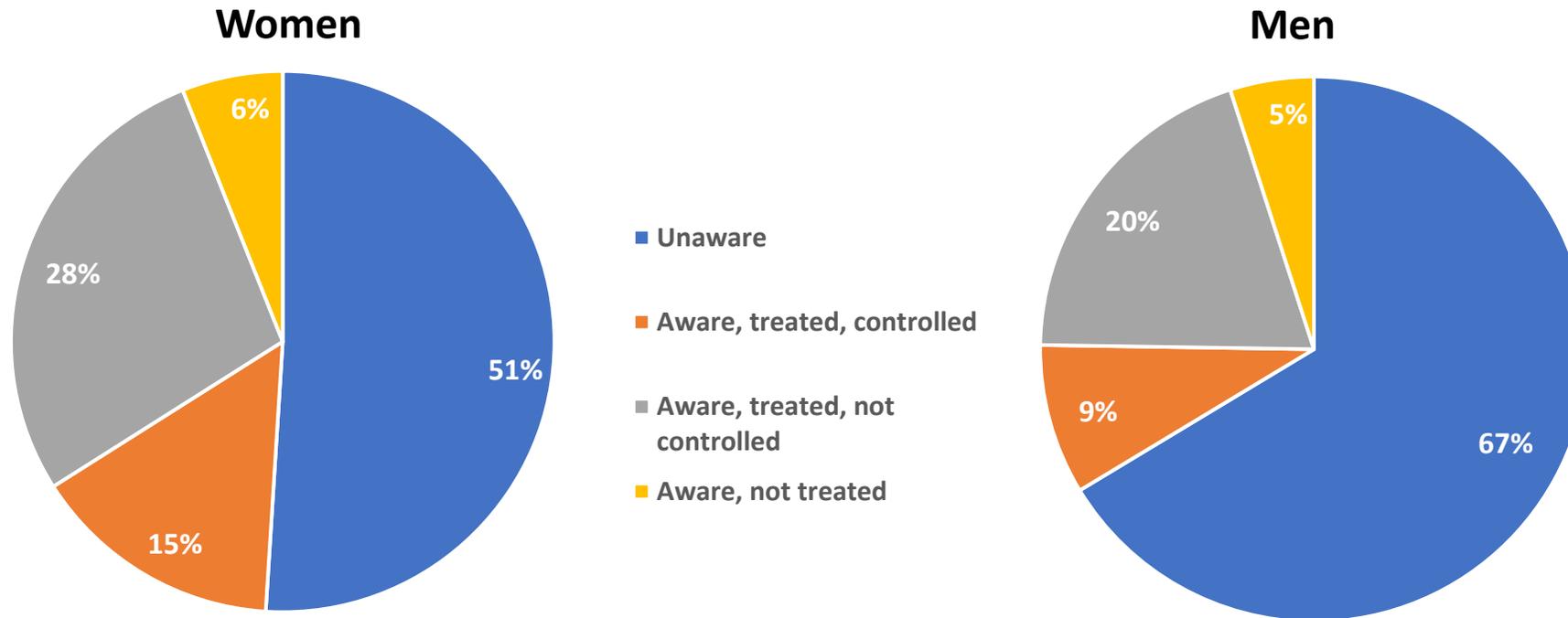


Prevalence of Diabetes



*BDHS 2017-2018

HYPERTENSION: POOR AWARENESS AND TREATMENT STATUS

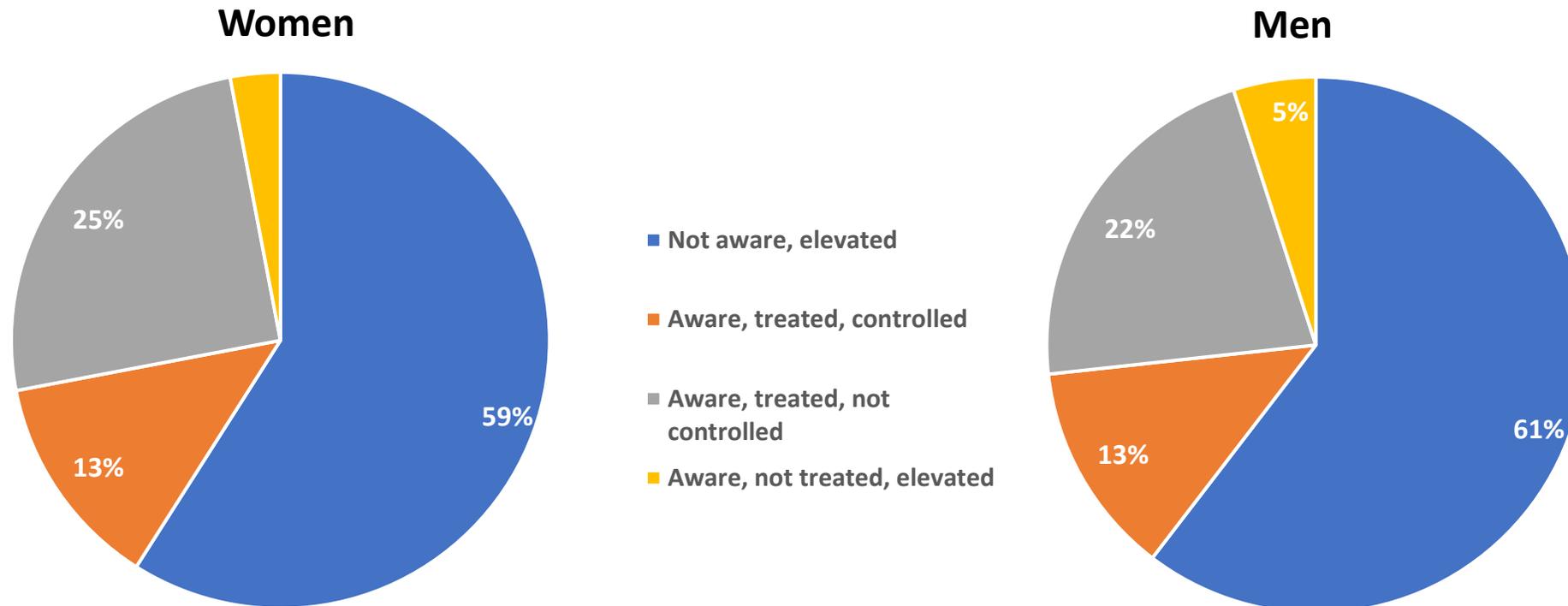


Percent distribution of women and men aged 18 and older

BDT 58.16 billion (692 million USD) is needed to ensure 1 antihypertensive drug (amlodipine) per year

*BDHS 2017-2018

DIABETES: POOR AWARENESS AND TREATMENT STATUS

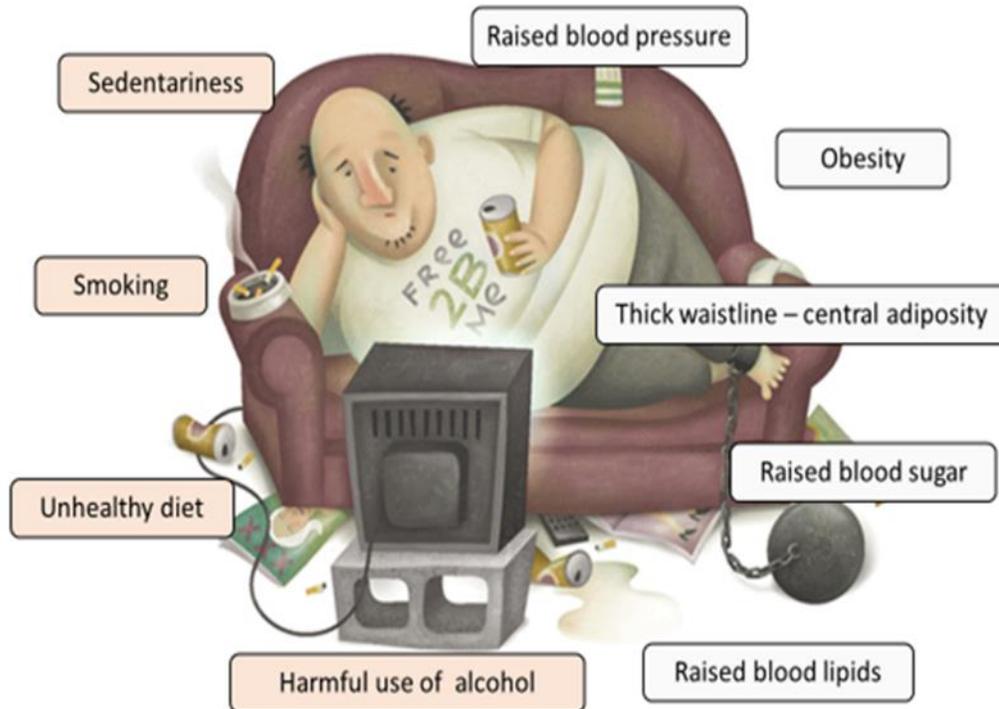


Percent distribution of women and men aged 18 and older

*BDHS 2017-2018

NCD RISK FACTORS BURDEN IN BANGLADESH

Risk Factors CO-EXIST & cumulative effects of multiple factors may be SYNERGISTIC.



- **More than 70.9% had one or two risk factors for NCD**
- **More than 26.2% had three or more risk factors for NCD**
- **3% of the population have none of the NCD risk factor**

Photo source: VectorStock

*Non-communicable disease risk factor survey, Bangladesh 2018*¹⁰

IS THERE A SOLUTION? 5X5 MODEL

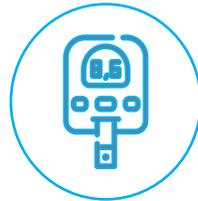
Diseases



Cardiovascular
Disease



Chronic Respiratory
Disease



Diabetes



Mental Health
Problem

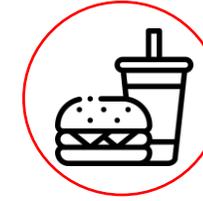


Cancer

Risk Factors



Air Pollution



Unhealthy Diet



Physical
Inactivity



Harmful Use Of
Alcohol



Tobacco Use

IS THERE A SOLUTION?

WHO PACKAGE
OF ESSENTIAL
NONCOMMUNICABLE (PEN)
DISEASE INTERVENTIONS
FOR PRIMARY HEALTH CARE



WHO PEN

- **WHO PEN for primary care** is a prioritized set of cost-effective evidence-based interventions that can be delivered with an acceptable quality of care, even in **low-resource settings**.
- **WHO PEN** is a conceptual framework for strengthening the equity and efficiency of primary health care in low-resource settings.
- **It involves**
 - a set of essential and evidence-based NCD service protocols, core technologies, medicines, and supplies
 - risk prediction tools
 - implementation procedure
 - monitoring and evaluation

VISION, GOALS, AND OBJECTIVES OF PEN

Vision

Effective and equitable prevention and care for people with NCDs



Goals

Closing the gap between what is needed and what is currently available to reduce the burden, health-care costs, and human suffering due to major NCDs by achieving higher coverage of essential interventions in LMIC

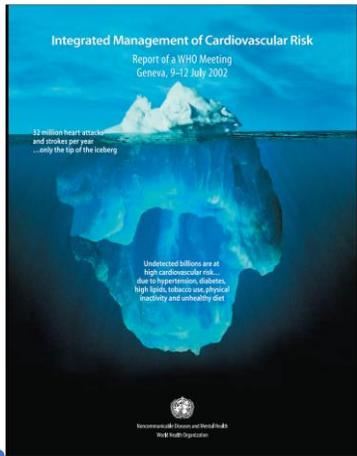


Objectives

- Improve the efficiency of care of major NCD in primary care
- Improve the quality and equity of care for major NCD in primary care
- Have a beneficial impact on health



DEVELOPMENT OF PEN INTERVENTION

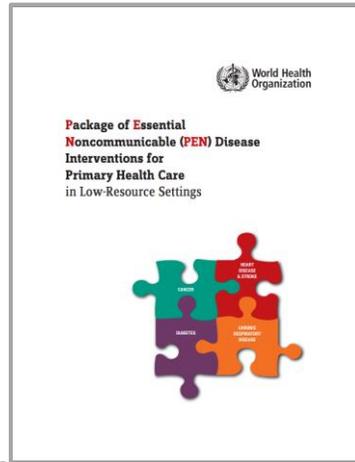
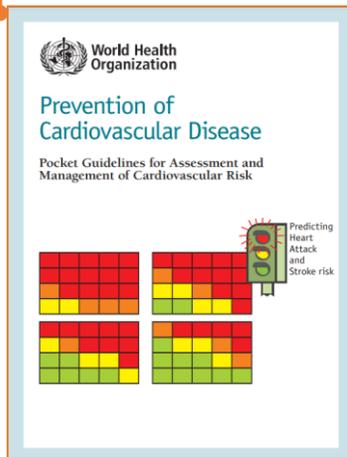


2002

Integrated management of cardiovascular risk, report of WHO Geneva meeting

CVD risk assessment chart

2007

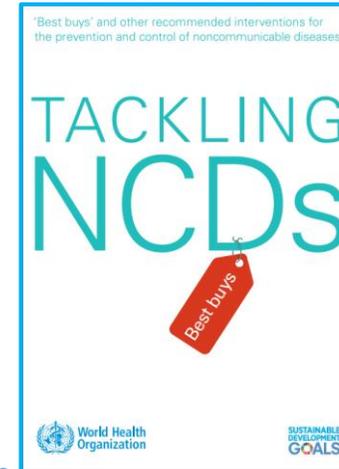
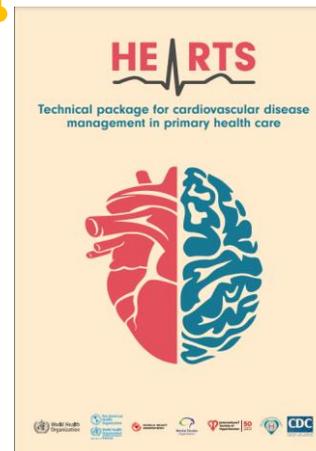


2010

PEN intervention for PHC in low resource settings

Package for Cardiovascular diseases management in PHC

2016



2017

List of 'Best buys' and other recommended interventions

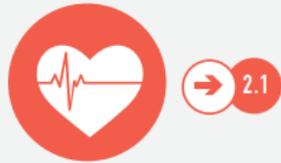
HEARTS risk-based management Revised PEN algorithms

2020



COMPONENTS OF PEN

CARDIOVASCULAR DISEASES



- CVD risk assessment and management
- Hypertension management

DIABETES



- Management of diabetes

CHRONIC RESPIRATORY DISEASES



- Management of asthma and exacerbation
- Management of COPD, and exacerbation

CANCER EARLY DIAGNOSIS



- Early diagnosis
- Cervical cancer
- Breast cancer

HEALTHY LIFESTYLE COUNSELLING



- Health education
- Counseling on tobacco cessation

SELF CARE



- Self-care among patients with cardiovascular disease, diabetes or respiratory disease

PALLIATIVE CARE



- Practice points for palliative care

ADAPTING WHO PEN



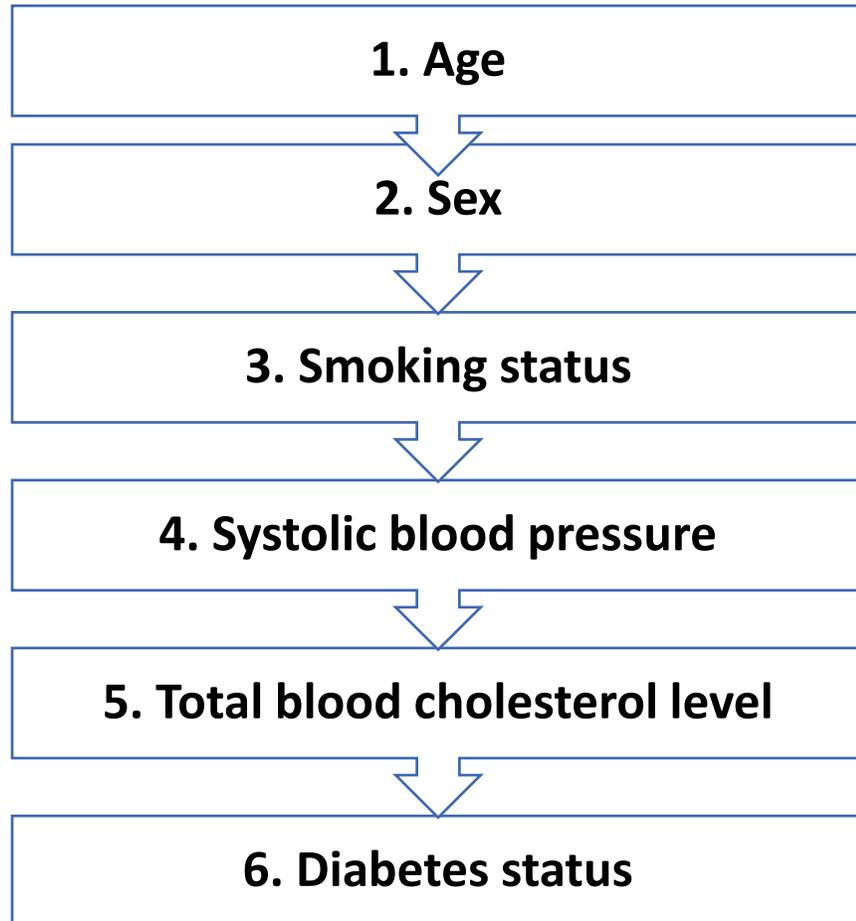
- Practice points for palliative care

CARDIOVASCULAR DISEASES

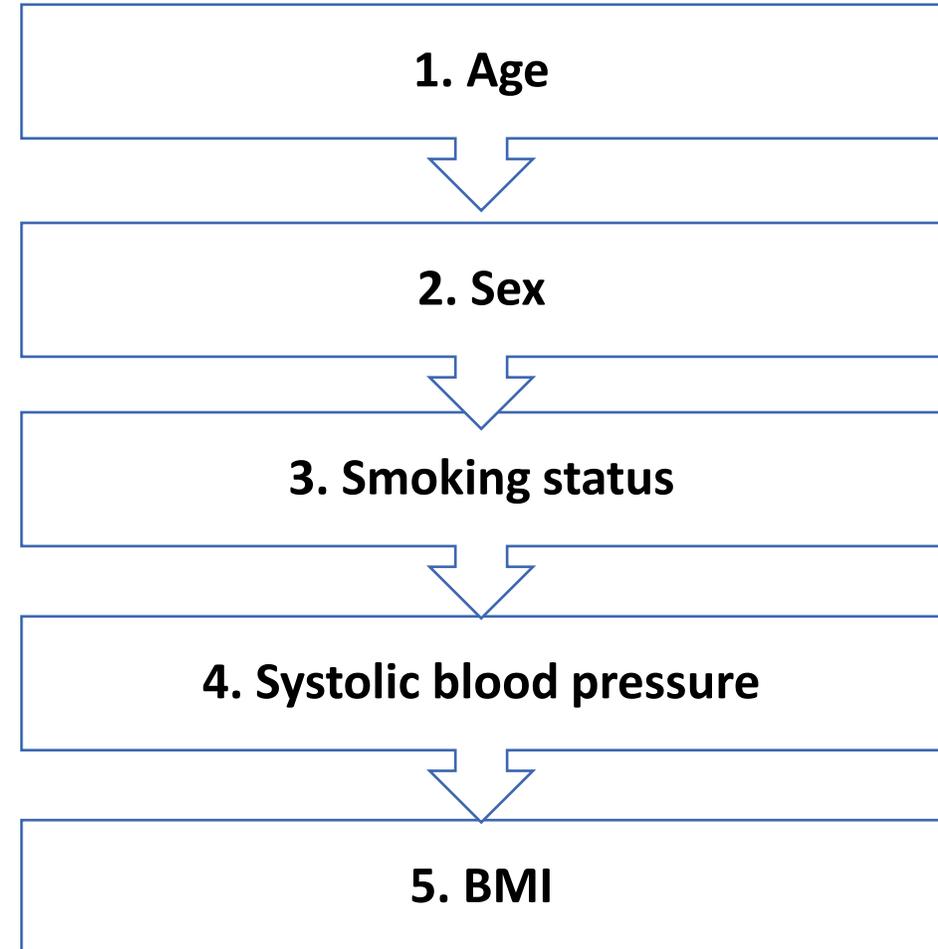
- CVD is associated with multiple risk factors
- Current model of care
 - Does not account for synergistic relationship between the risk factors for CVD
 - Does not identify individuals at high risk at early stage to ensure primary prevention of CVD
 - May put people with low risk on lifelong and costly treatment

ESTIMATION OF TOTAL CARDIOVASCULAR RISK

Lab based

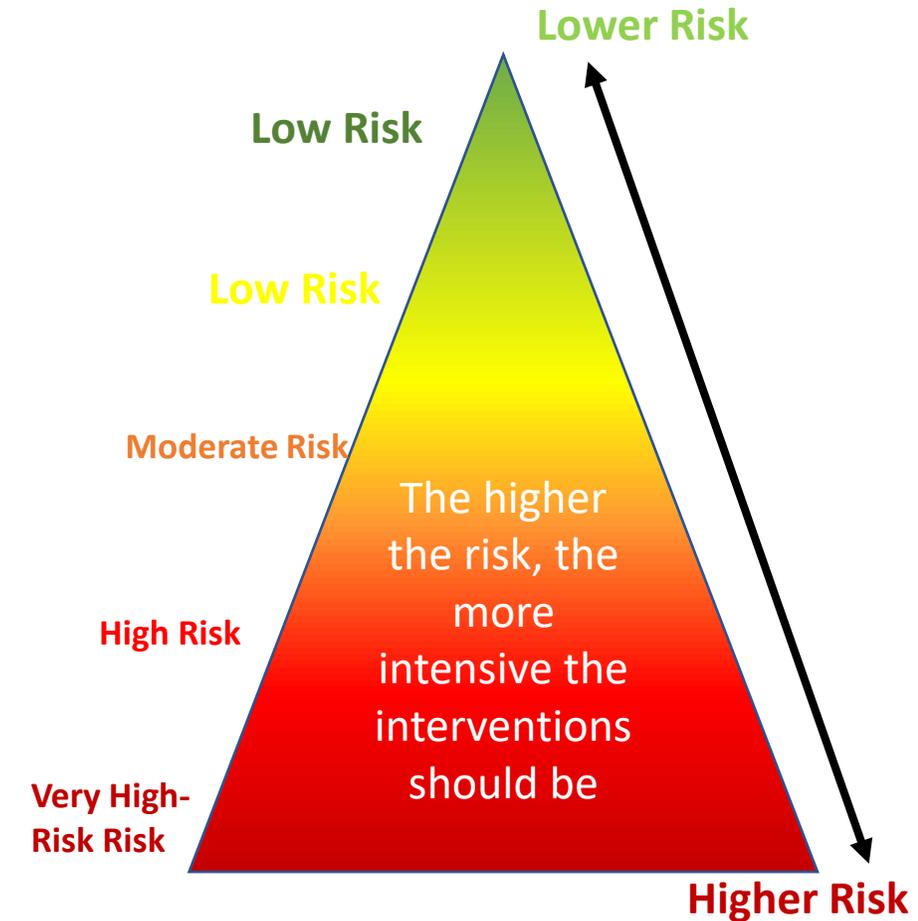


Non-lab based



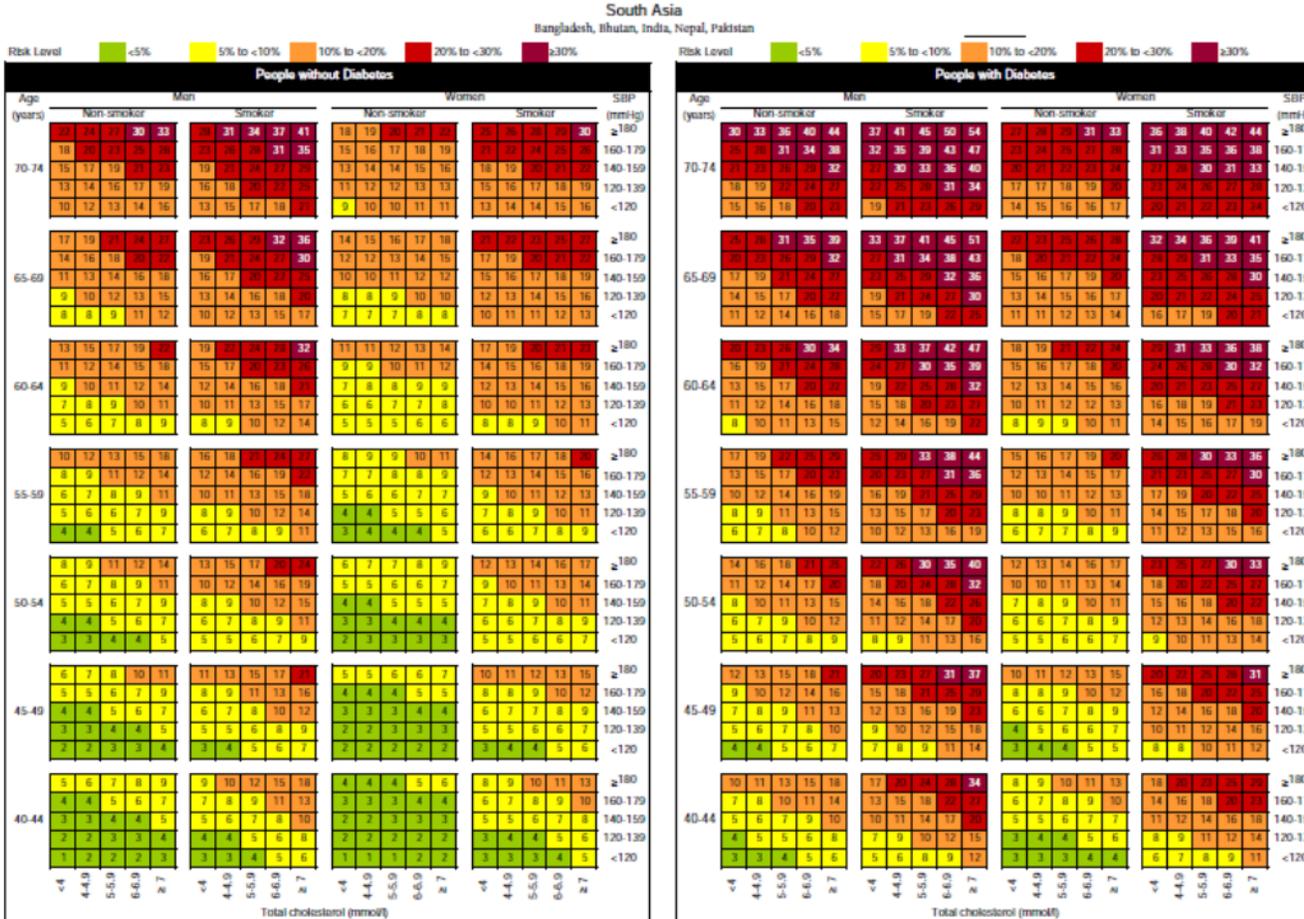
5 COLORS REPRESENT 5 RISK LEVELS

Green	<5%	Low Risk
Yellow	5% to <10%	Low Risk
Orange	10% to <20%	Moderate Risk
Red	20% to <30%	High risk
Maroon	≥30%	Very High Risk

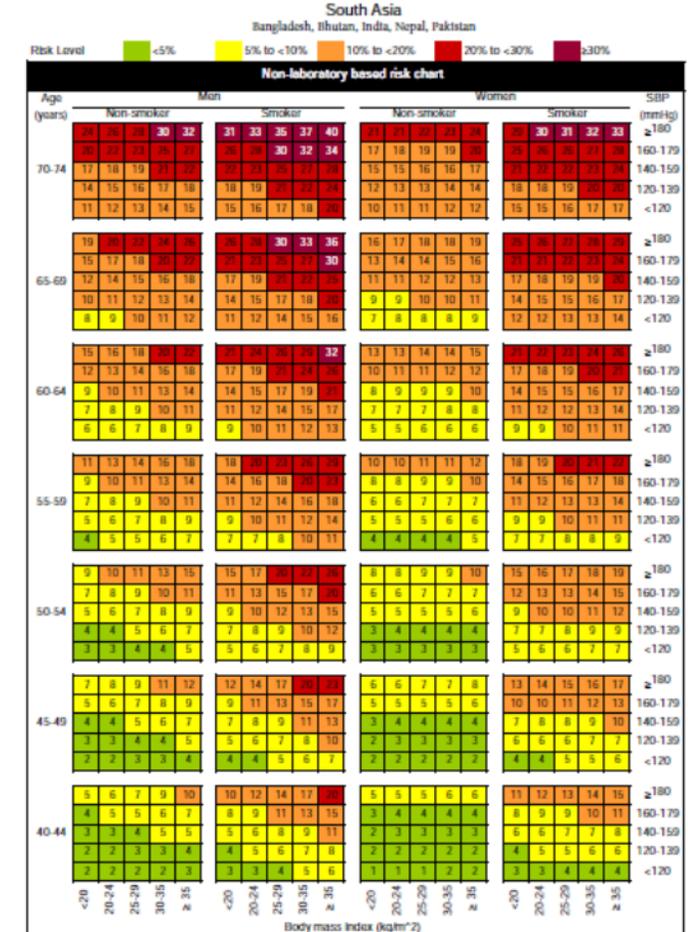


WHO CVD RISK CHART

WHO cardiovascular disease risk laboratory-based charts

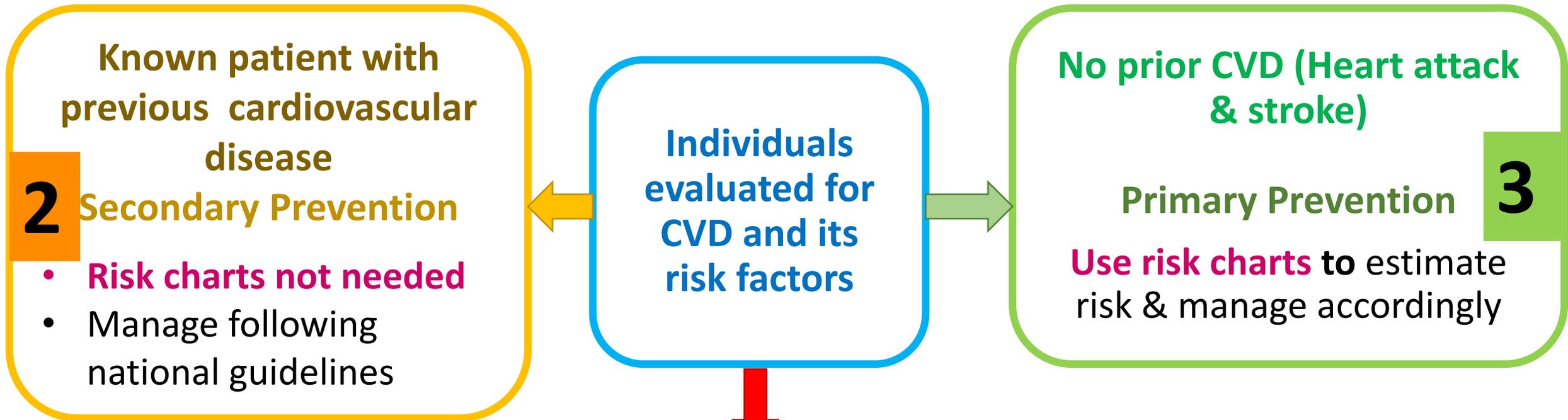


WHO cardiovascular disease risk non-laboratory-based charts



In 2018, the Government of Bangladesh incorporated total CVD risk-based approach in the national guideline for the management of hypertension and diabetes

SORTING PATIENTS FOR CVD



Patients coming with acute symptoms: Managing Emergencies

Patients presenting with acute symptoms or signs of possible heart attack or stroke should be screened immediately for angina, heart attack, transient ischaemic attack or stroke, stabilized, and referred urgently to the appropriate facility for care.

1

Protocol for integrated management of hypertension, diabetes and cholesterol using a total cardiovascular risk approach

All patients aged **over 40 years** and **no prior CVD**:
Estimate total CVD risk (using CVD risk charts)

Very high Risk
≥30%

High risk
20% to <30%

Moderate
Risk 10% to <20%

Low
Risk < 10%

Healthy lifestyle

Advise & support all for behaviour change and selfcare on tobacco cessation, diet and physical activity

Nicotine replacement or other pharmacotherapy for tobacco users who fail to quit with counselling

Nicotine replacement or other pharmacotherapy for tobacco users who fail to quit with counselling

Offer specific counselling on tobacco cessation to all tobacco users

Offer specific counselling on tobacco cessation to all tobacco users

Very high Risk
≥30%

High risk
20% to <30%

Moderate
Risk 10% to <20%

Low
Risk < 10%

Blood pressure
Use BP algorithm

On first visit **SBP ≥160** mmHg and/or **DBP ≥ 100** mmHg OR lower BP with end organ damage:
start treatment **based on one assessment**, as per hypertension management protocol

On first visit **SBP >130**
&/or DBP >80 mmHg:
start antihypertensive
based on one
assessment

On first visit **SBP 140-159**
&/or DBP 90-99 mmHg:
healthy lifestyle counselling
and follow up in 4 to 8
weeks.
Persistent BP ≥ 140/90,
unable to lower through
lifestyle strategies, start
antihypertensive

On first visit **SBP 140-159**
&/or DBP 90-99 mmHg:
healthy lifestyle counselling
and follow up in 4 to 8
weeks.
Persistent BP ≥ 140/90,
unable to lower through
lifestyle strategies, start
antihypertensive

On first **visit SBP 140-159**
&/or DBP 90-99 mmHg:
healthy lifestyle counselling
and follow up in 4 to 8
weeks.
Persistent BP ≥ 140/90,
unable to lower through
lifestyle strategies, start
antihypertensive

Very high risk
 $\geq 30\%$

High risk
20% to $< 30\%$

Moderate
Risk 10% to < 20

Low
Risk $< 10\%$

**Cholesterol &
aspirin**

TOTAL CHOLESTEROL ≥ 8 MMOL/L: TREAT WITH ROSUVASTATIN
ADVISE ALL TO FOLLOW A LIPID LOWERING DIET AT ALL TIMES

Start **ROSUVASTATIN**
10 mg ONCE DAILY irrespective
of cholesterol level

Give **ASPIRIN 75 mg ONCE DAILY**
if no contraindications and
benefit outweighs risk

If total cholesterol > 5.0 mmol/l
despite lipid-lowering diet for 3
months: start **ROSUVASTATIN**
5 mg ONCE DAILY

Give **ASPIRIN 75 mg ONCE DAILY**
if no contraindications and
benefit outweighs risk

Total cholesterol
 < 8.0 mmol/l:
advise to follow a lipid
lowering diet

Do NOT give aspirin

Total cholesterol
 < 8.0 mmol/l:
advise to follow a lipid
lowering diet

Do NOT give aspirin

Very high risk
 $\geq 30\%$

High risk
20% to $< 30\%$

Moderate
Risk 10% to $< 20\%$

Low
Risk $< 10\%$

DIABETES
Use diabetes algorithm

Diabetes: treat with hypoglycaemic agent per diabetes algorithm. Advise on foot care + eye screening

Treat BP $\geq 130/80$ mmHg:
Give **ROSUVASTATIN 10 mg**
ONCE DAILY irrespective of
cholesterol level

Treat BP $\geq 130/80$ mmHg:
Give **ROSUVASTATIN 5 mg**
ONCE DAILY irrespective of
cholesterol level

Treat BP $\geq 130/80$ mmHg:
Give **ROSUVASTATIN 5 mg**
ONCE DAILY irrespective
of cholesterol level

Treat BP $\geq 130/80$ mmHg:
Give **ROSUVASTATIN 5 mg**
ONCE DAILY irrespective
of cholesterol level

Very high risk
≥30%

High risk
20% to <30%

Moderate
Risk 10% to <20

Low
Risk < 10%

FOLLOW-UP

Follow up compliance with drug treatment (if applicable) and regular follow up per risk level

Monitor response to counselling and treatment as needed.

Reassess CVD risk every 3 months

Monitor response to counselling and treatment as needed.

Reassess CVD risk every 3 months until targets met, then every 3-6 months

Monitor response to counselling and treatment as needed.

Reassess CVD risk every 3 months until targets met, then every 6-9 months

Monitor response to counselling and treatment as needed.

Reassess CVD risk every 12 months

THE BENEFIT OF CVD RISK-BASED MANAGEMENT

- Identify individuals at **high risk** at an **early Stage**
- Provide more intensive counseling, drug treatment, and follow-up to **high risk** than **low risk** individuals
- **Prevent** complications
- **Avoid** putting patients with **low risk** on lifelong and costly treatment/prevent over-treatment.
- Harmonize and simplify management in low resource setting
- Promote adherence to treatment
- Reduce the chance of catastrophic health expenditure, a step toward universal health coverage

HYPERTENSION

HYPERTENSION

Blood pressure measurement and control is particularly important in adults who:

- have had a prior heart attack or stroke
- are obese
- have diabetes
- use tobacco
- have chronic kidney disease (CKD)
- have a family history of heart attack or stroke

ASSESS



Measuring blood pressure

Measuring blood pressure is the only way to diagnose hypertension, as most people with raised blood pressure have no symptoms.

Effective treatment algorithms for hypertension are dependent on accurate blood pressure measurement. The following advice should be followed for measuring blood pressure:

- Use the appropriate cuff size, noting the lines on the cuff to ensure that it is positioned correctly on the arm. (If the arm circumference is > 32 cm, use large cuff.)

- Although at the initial evaluation it is preferable to measure blood pressure in both arms and use the arm with the higher reading thereafter, this may not be practical in a busy primary care environment.
- The patient should be sitting with back supported, legs uncrossed, empty bladder, relaxed for 5 minutes and not talking.
- For persons who are getting their blood pressure measured for the first time, it is preferable to take at least two readings and to use the second reading.

DIAGNOSE



In general, hypertension is diagnosed if, on two visits on different days:

- systolic blood pressure on both days is ≥ 140 mmHg *and/or*
- diastolic blood pressure on both days is ≥ 90 mmHg

TREAT



TREATMENT GOAL

- For most patients, blood pressure is considered controlled when SBP < 140 mmHg and DBP < 90 mmHg.
- However, for patients with diabetes or a high risk of CVD, certain guidelines recommend lower targets: SBP < 130 mmHg and DBP < 80 mmHg.

NON-PHARMACOLOGICAL

- Lifestyle counselling (on healthy diet, physical activity, the harms of tobacco use, and harmful use of alcohol) is a critical component of good hypertension management and is often recommended as a first step for patients with blood pressure of SBP 130–139 mmHg and /or DBP 80–89 mmHg who do not have other CVD risk factors

PHARMACOLOGICAL

- There are four main classes of antihypertensive medications:
 1. angiotensin converting enzyme (ACE) inhibitors
 2. angiotensin receptor blockers (ARB)
 3. calcium channel blockers (CCB)
 4. thiazide and thiazide-like diuretics
- Any of these four classes of antihypertensive medication may be used unless there are specific contraindications. Proper treatment of hypertension usually requires a combination of hypertension medications. Sample protocols for treatment of hypertension are available in E module of the HEARTS technical package <https://apps.who.int/iris/bitstream/handle/10665/260421/WHO-NMH-NVI-18.2-eng.pdf?sequence=1>

DIABETES

DIABETES



Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose (or blood sugar), which leads over time to serious damage to the heart, blood vessels, eyes, kidneys, and nerves.

TREATMENT OPTIONS

- A healthy diet to achieve or maintain normal body weight and regular physical activity are the mainstay of diabetes management. All patients should be advised on avoidance of tobacco use and harmful use of alcohol.
- Management of risk factors and referral as appropriate
- Oral hypoglycaemic agents for type 2 diabetes, if glycaemic targets are not achieved with lifestyle modification
- Metformin can be used as the first-line medicine
- Other classes of antihyperglycaemic agents, added to metformin if glycaemic targets are not met
- Statins are recommended for all people with type 2 diabetes older than 40 years, but only if this does not negatively impact access to glucose-lowering and blood pressure lowering medication.

🔗 MORE INFORMATION

HEARTS – D module on diagnosis and management of type 2 diabetes
<https://www.who.int/publications-detail/who-ucn-ncd-20.1>

PREVENTION OF COMPLICATIONS*

FOOT COMPLICATIONS:

- Regular (3–6 months) visual inspection and examination of patients' feet by trained personnel for the detection of risk factors for ulceration (assessment of foot sensation, palpation of foot pulses, inspection for any foot deformity, inspection of footwear).

PREVENTION OF ONSET AND PROGRESSION OF CHRONIC KIDNEY DISEASE:

- Optimal glycaemic control
- Angiotensin-converting enzyme inhibitor for persistent albuminuria

PREVENTION OF ONSET AND PROGRESSION OF DIABETIC RETINOPATHY:

- Screening for diabetic retinopathy and referral for laser treatment if indicated
- Optimal glycaemic control and blood pressure control

PREVENTION OF ONSET AND PROGRESSION OF NEUROPATHY:

- Optimal glycaemic control



See following pages for detailed management of type 2 diabetes

TREATMENT GOAL

- HbA1c < 7% is generally considered to be adequate glycaemic control
- If HbA1c is not available, fasting plasma glucose (FPG < 7.0 mmol/L or < 126 mg/dl)

PHARMACOLOGICAL

- **Metformin** is recommended as the first-line medicine in the treatment of diabetes. **Sulfonylurea (e.g. gliclazide)** is recommended as the second-line treatment, and **human insulin** as the third-line treatment.
- **Patients may require two or three medicines.** Although there are other medicine classes usually used as second- and third-line treatment, including thiazolidinediones (TZDs), DPP-4 inhibitors, SGLT2 inhibitors, and GLP-1 receptor agonists, these medicines tend to be more costly than metformin, sulfonylurea and insulin, with currently limited evidence of superior effectiveness. They may, however, be considered in the rare cases when treatment with metformin, sulfonylurea, and insulin is not possible. Insulin treatment should be introduced and monitored according to national practices.

NOTE: Hypertension treatment is indicated when SBP ≥ 130 and /or DBP ≥ 80. Statins are recommended for all people with type 2 diabetes older than 40 years, but only if this does not negatively impact access to glucose-lowering and blood pressure-lowering medication.

NON-PHARMACOLOGICAL

- Patients should receive counselling and support on lifestyle change including diet, physical activity and smoking cessation at the time of diagnosis, then annually and whenever changes in treatment occur.
- Group education is effective and less costly than individual programmes

CHRONIC RESPIRATORY DISEASES

PATIENT PRESENTS WITH
cough, difficult breathing, tight chest and/or wheezing

ASSESS

CHRONIC RESPIRATORY DISEASES

Chronic respiratory diseases (CRDs) are chronic diseases of the airways and other structures of the lung.

WHO PEN focuses particularly on bronchial asthma and chronic obstructive pulmonary disease (COPD), which are major public health problems accounting for a significant burden of morbidity and mortality in low- and middle-income countries.



 **IMPLEMENTATION TOOLS:**
**PACKAGE OF ESSENTIAL NONCOMMUNICABLE (PEN)
DISEASE INTERVENTIONS FOR PRIMARY
HEALTH CARE IN LOW-RESOURCE SETTINGS**
https://apps.who.int/iris/bitstream/handle/10665/133525/9789241506557_eng.pdf?sequence=1

- Previous diagnosis of asthma
- Symptoms since childhood or early adulthood
- History of hayfever, eczema and/or allergies
- Intermittent symptoms with asymptomatic periods in between
- Symptoms worse at night or early morning
- Symptoms triggered by respiratory infection, exercise, weather changes or stress
- Symptoms respond to salbutamol

DIAGNOSIS OF ASTHMA LIKELY



- Previous diagnosis of COPD
- History of heavy smoking, i.e. > 20 cigarettes per day for > 15 years
- History of heavy and prolonged exposure to burning fossil fuels in an enclosed space, or high exposure to dust in an occupational setting
- Symptoms started in middle age or later (after age 40)
- Symptoms worsened slowly over a long period of time
- Long history of daily or frequent cough and sputum production starting before shortness of breath
- Symptoms that are persistent with little day-to-day variation

DIAGNOSIS OF COPD LIKELY



CANCER

EARLY DIAGNOSIS



ASSESS FOR

common cancer signs and symptoms

Cancer symptoms can be non-specific, yet it is important that any “red flag” symptoms are recognized by providers and investigated further.

CANCER



EARLY DIAGNOSIS

- Identify presenting features of cancer and refer to next level for confirmation of diagnosis

- Guide to cancer early diagnosis

https://www.who.int/cancer/publications/cancer_early_diagnosis/en/

CERVICAL CANCER

Cervical cancer is the fourth most frequent cancer among women. Primary prevention through vaccination against HPV, effective screening and early diagnosis, and timely, quality treatment of invasive cancers can reduce incidence and mortality rates.

- Comprehensive cervical cancer control: A guide to essential practice

<http://www.who.int/reproductivehealth/publications/cancers/cervical-cancer-guide/en/>

BREAST CANCER

Breast cancer is the most frequent cancer among women. There are two early detection strategies for breast cancer: early diagnosis and screening.

- Mammography position paper

https://www.who.int/cancer/publications/mammography_screenin

SITE OF CANCER

COMMON SYMPTOMS*

Breast	Lump in the breast, asymmetry, skin retraction, recent nipple retraction, blood stained nipple discharge, eczematous changes in areola
Cervix	Post-coital bleeding, excessive vaginal discharge
Colon, rectum	Change in bowel habits, unexplained weight loss, anaemia, blood in the stool (rectal cancer)
Oral cavity	White lesions (leukoplakia) or red lesions (erythroplakia), growth or ulceration in mouth
Naso-pharynx	Nosebleed, permanent blocked nose, deafness, nodes in upper part of the neck
Larynx	Persistent hoarseness of voice

SITE OF CANCER

COMMON SYMPTOMS*

Stomach	Upper abdominal pain, recent onset of indigestion, weight loss
Skin melanoma	Brown lesion that is growing with irregular borders or areas of patchy colouration that may itch or bleed
Other skin cancers	Lesion or sore on skin that does not heal
Urinary bladder	Pain, frequent and uneasy urination, blood in urine
Prostate	Difficulty (long time) in urination, frequent nocturnal urination
Retinoblastoma	White spot in the pupil, convergent strabismus (in a child)
Testis	Swelling of one testicle (asymmetry)

* Common symptoms and signs that may be due to cancer. These common symptoms may be due to cancer or due to a different medical condition. People with these symptoms should seek medical attention without delay.



Unhealthy Diet



Physical Inactivity

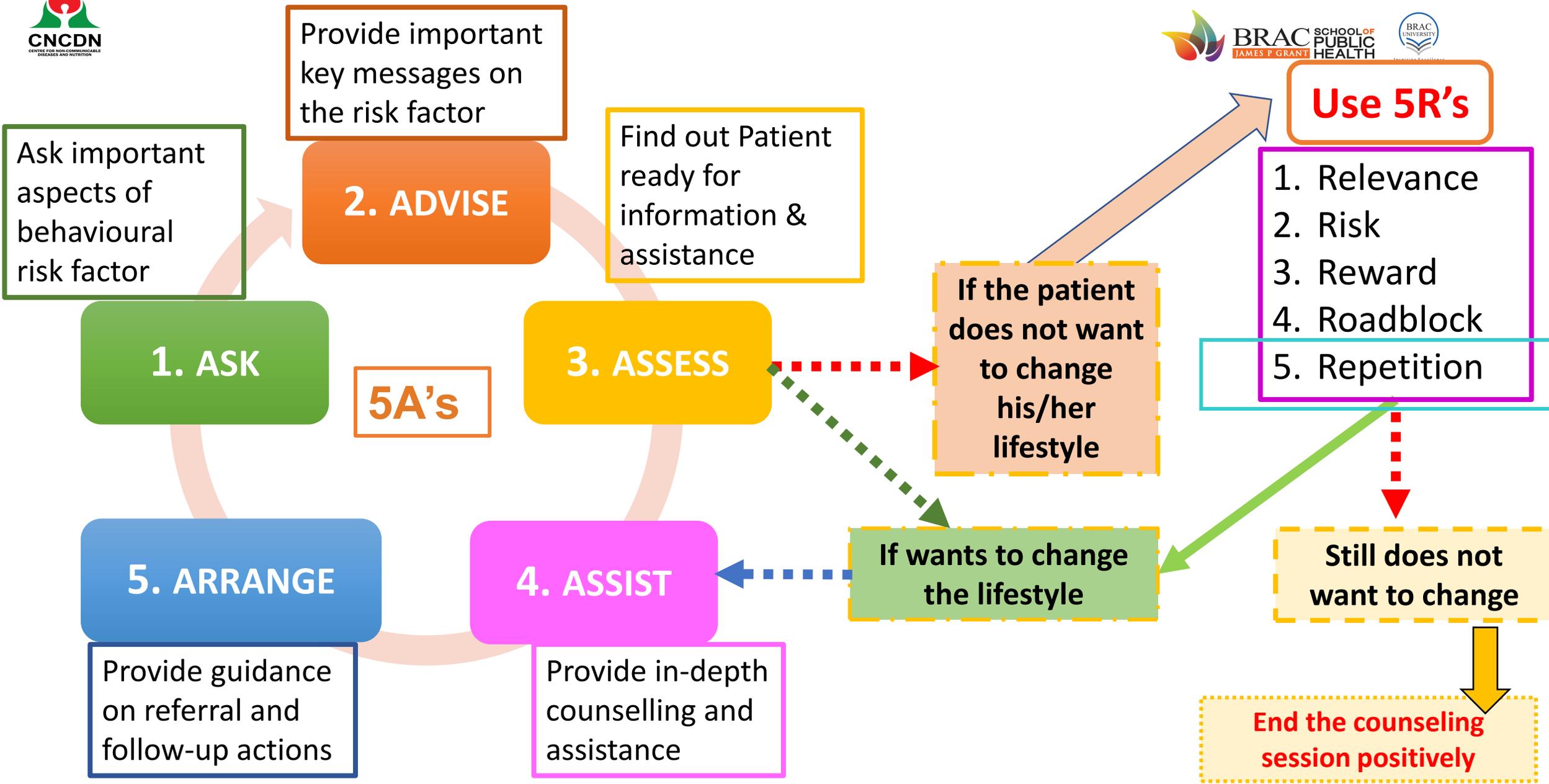


Tobacco Use



Harmful Use Of Alcohol

LIFESTYLE COUNSELING



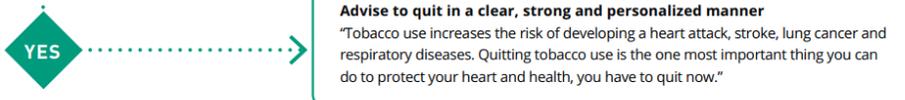
HEALTHY LIFESTYLE COUNSELING

COUNSELLING ON CESSATION OF TOBACCO USE (5 As)

1. ASK



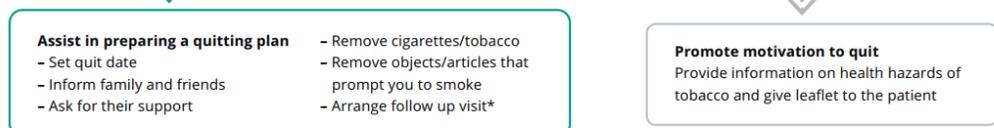
2. ADVISE



3. ASSESS



4. ASSIST



5. ARRANGE



* Ideally a second follow-up visit is recommended within the same month and every month thereafter for 4 months and evaluation after 1 year. If not feasible, reinforce counseling whenever the patient is seen.

EDUCATE YOUR PATIENT TO:

- Be physically active
- Eat a "heart healthy" diet
- Stop tobacco and avoid harmful use of alcohol
- Adhere to treatment

BE PHYSICALLY ACTIVE

- Progressively increase physical activity to moderate levels (such as brisk walking) at least 30 minutes per day on 5 days of the week
- Control body weight and avoid overweight by reducing high-calorie food and taking adequate physical activity

EAT A HEART HEALTHY DIET

- Salt (sodium chloride)**
 - Restrict to less than 5 grams (1 teaspoon) per day
 - Reduce salt when cooking, limit processed and fast foods
- Fruits and vegetables**
 - 5 servings (400-500 g) of fruits and vegetable per day
 - 1 serving is equivalent to 1 orange, apple, mango, banana or 3 tablespoons of cooked vegetables
- Fatty food**
 - Limit fatty meat, dairy fat and cooking oil (less than two tablespoons per day)
 - Replace palm and coconut oil with olive, soya, corn, rapeseed or safflower oil
 - Replace other meat with chicken (without skin)
- Fish**
 - Eat fish at least 3 times per week, preferably oily fish such as tuna, mackerel, salmon

STOP TOBACCO AND AVOID HARMFUL USE OF ALCOHOL

- Encourage all non-smokers not to start smoking
- Strongly advise all smokers to stop smoking and support them in their efforts
- Individuals who use other forms of tobacco should be advised to quit
- Alcohol abstinence should be reinforced.
- People should not be advised to start taking alcohol for health reasons
- Advise patients not to use alcohol when additional risks are present, such as:
 - driving or operating machinery
 - pregnant or breast feeding
 - taking medications that interact with alcohol
 - medical conditions made worse by alcohol
 - difficulties in controlling drinking

ADHERE TO TREATMENT

- If the patient is prescribed medication:
 - teach the patient how to take it at home
 - explain the difference between medicines for long-term control (e.g. blood pressure) and medicines for quick relief (e.g. for wheezing)
 - tell the patient the reason for prescribing the medication
- Show the patient the appropriate dose
- Explain how many times a day to take the medication
- Label and package the tablets
- Check the patient's understanding before the patient leaves the health centre
- Explain the importance of:
 - keeping an adequate supply of the medication
 - the need to take the medication regularly as advised even if there are no symptoms

SELF CARE

CONDITION-SPECIFIC RECOMMENDATIONS ON SELF-CARE

SELF-CARE

AMONG PATIENTS WITH CARDIOVASCULAR DISEASE, DIABETES OR RESPIRATORY DISEASE

- All patients with NCDs perform some level of self-care. Health workers can work to strengthen self-care strategies among these patients by following this protocol
- Counselling patients on self-care can be integrated into existing care structures
- All interactions with patients can be seen as opportunities to understand and improve patients' self-care strategies
- Strategies to improve adherence should form part of self-care for NCDs.
- Promoting self-care among patients with NCDs should take into account patients' beliefs and concerns about medicines and their effects on adherence
- No single strategy to improve overall adherence is recommended over another. Health workers should use their skills, resources, and patient preferences to devise plans to improve adherence
- Group education programmes, rather than individual education, may offer a cost-effective strategy to deliver education in low- and middle-income countries

FIRST VISIT

- Identify opportunities to improve self-care
- Provide written or visual educational materials and training in self-care
- For self-care recommendations that require an action plan, agree on and provide a written or visual action plan

FOLLOWING VISITS

- Check the patient's progress
- If necessary and the patient wishes it, repeat the steps from the first visit

CARDIOVASCULAR DISEASES

- Raised blood pressure
 - Self-measurement to monitor blood pressure is recommended for the management of hypertension in appropriate patients where the affordability of the technology has been established.
- Heart failure
 - Appropriate patients could benefit from being educated on the benefits of cardiac rehabilitation, and can be encouraged to undertake rehabilitation exercise in the home setting.
- Need for anticoagulation
 - Self-monitoring of blood coagulation and self-adjustment of dosage in patients receiving oral anticoagulation agents is recommended if affordable and according to an agreed action plan with a health professional.

DIABETES

- Diabetes Type 1 and 2
 - People with type 1 and type 2 diabetes on insulin should be offered self-monitoring of blood glucose based on individual clinical need.
- Diabetes Type 1
 - Self-monitoring and self-adjustment of dosage is recommended in type 1 diabetes according to an agreed action plan with a health professional.

RESPIRATORY DISEASES

- Asthma and chronic obstructive pulmonary disease
 - Self-monitoring in asthma and COPD and self-adjustment of dosage is recommended according to an agreed action plan with a health professional.
- Chronic obstructive pulmonary disease
 - Appropriate patients may benefit from being educated on the benefits of chronic obstructive pulmonary disease rehabilitation, and encouraged to undertake rehabilitation exercise.

PALLIATIVE CARE

PALLIATIVE CARE



🔗 **PLANNING AND IMPLEMENTING PALLIATIVE CARE SERVICES: A GUIDE FOR PROGRAMME MANAGERS.**
<https://apps.who.int/iris/bitstream/handle/10665/250584/9789241565417-eng.pdf?sequence=1>

WHAT IS PALLIATIVE CARE

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

WHO Definition of Palliative Care
<https://www.who.int/cancer/palliative/definition/en/>

ESTABLISHING PALLIATIVE CARE

Palliative care services can be established or expanded in a number of ways, depending on the local situation. For instance, a country may decide to begin by:

- Setting up a palliative *home-care service* or integrating palliative home care into existing homecare services
- Setting up a *community-based* palliative care service
- Setting up a *hospital-based* palliative care service

PRACTICE POINTS FOR PALLIATIVE CARE

TREAT AND REFER WHEN NECESSARY FOR:

PHYSICAL CARE NEEDS

- Pain (all types)
- Respiratory problems (dyspnoea, cough)
- Gastrointestinal problems (constipation, nausea, vomiting, dry mouth, mucositis, diarrhoea)
- Delirium
- Wounds, ulcers, skin rash and skin lesions
- Insomnia
- Fatigue
- Anorexia
- Anaemia
- Drowsiness or sedation
- Sweating

PSYCHOLOGICAL, EMOTIONAL, AND SPIRITUAL CARE NEEDS

- Psychological distress
- Anxiety
- Suffering of family or caregivers
- Spiritual needs and existential distress
- Depression
- Bereavement support for family/caregivers

🔗 **Integrating palliative care and symptom relief into primary health care: a WHO guide for planners, implementers and managers**
<https://apps.who.int/iris/bitstream/handle/10665/274559/9789241514477-eng.pdf?sequence=1&isAllowed=y>

CONSIDER AND MANAGE

CARE PLANNING AND COORDINATION

- Identify support and resources available; develop and implement care plan based on patient's needs
- Provide care in the last weeks/days of life
- Facilitate the availability and access to medications (especially opioids)
- Identify the psychosocial/spiritual needs of professionals providing care (including self-care)

COMMUNICATION ISSUES

- Communicate with patient, family and caregivers about diagnosis, prognosis, treatment, symptoms and their management, and issues relating to care in the last days/weeks of life
- Identify and set priorities with patient and family/caregivers
- Provide information and guidance to patients and caregivers according to available resources

CORE LIST OF TECHNOLOGIES, TOOLS, MEDICINES

TECHNOLOGIES

- Thermometer
- Stethoscope
- Blood pressure measurement device*
- Measurement tape
- Weighing machine
- Peak flow meter**
- Spacers for inhalers
- Glucometer
- Blood glucose test strips
- Semmes-Weinstein 10 g monofilament
- Urine protein test strips
- Urine ketones test strips

Add when resources permit:

- Nebulizer
- Pulse oximeter
- Blood cholesterol assay
- Lipid profile
- Serum creatinine assay
- Troponin test strips
- Urine microalbuminuria test strips
- Tuning fork
- Electrocardiograph (if training to read and interpret electrocardiograms is available)
- Defibrillator

TOOLS

- WHO CVD risk prediction charts
- Evidence-based clinical protocols
- Flow charts with referral criteria
- Patient clinical record
- Medical information register
- Audit tools

Medicine

- Amoxicillin
- Angiotensin inhibitor (enalapril)
- Aspirin
- Beclomethasone
- Beta-blocker (atenolol)
- Calcium channel blocker (amlodipine)
- Codeine
- Dextrose infusion
- Diazepam
- Epinephrine
- Erythromycin
- Furosemide
- Glibenclamide
- Glucose injectable solution
- Glyceryl trinitrate
- Heparin
- Hydrocortisone
- Ibuprofen
- Insulin
- Isosorbide dinitrate
- Magnesium sulphate
- Metformin
- Morphine
- Oxygen
- Paracetamol
- Prednisolone
- Promethazine
- Salbutamol
- Senna
- Sodium chloride infusion
- Spironolactone
- Statin
- Thiazide diuretic

EVIDENCE FROM PUBLISHED LITERATURE...1

Country (year)	Setting	Key findings
South Korea (2017)	2 poly clinics	<ul style="list-style-type: none"> • Significant decline in behavioral risk factors • Significant decline in risk factors such as 10 year CVD risk, FBG >7 mmol/L, blood cholesterol >6.6 mmol/L, Blood pressure >140/90 mm of Hg, BMI>23 kg/m², waist circumference, urine albumin
Bhutan (2014)	2 district hospitals and 7 health units	<ul style="list-style-type: none"> • CVD risk score, alcohol and smoking consumption, proportion with high blood pressure and urine albumin declined • Medication adherence to antihypertensives and anti-diabetics improved
Myanmar (2020)	20 townships	<ul style="list-style-type: none"> • Reduction of CVD risk score, blood sugar and systolic blood pressure was seen in 26%, 60% and 31% of cases
Palestine (2019)	One clinic	<ul style="list-style-type: none"> • No statistical difference between pre- and post-intervention parameters for systolic and diastolic blood pressure, waist circumference, weight, BMI, cholesterol, tobacco use and 10-year CVD risk, but FBS was significantly lower

EVIDENCE FROM PUBLISHED LITERATURE...2

Country (year)	Setting	Key findings
Palestine (2017)	14 primary care clinics	<ul style="list-style-type: none"> • Staff generally followed PEN protocols • CVD risk miscalculation in 1/3 cases, urine testing not regularly done for 96% diabetic patients, too frequent cholesterol test, no referral to higher centers, in 10% cases doctors did not take appropriate actions
Philippines (2015)	All PHCs in 6 provinces	<ul style="list-style-type: none"> • 100% of PHCs had PEN trained manpower and complete sets of essential equipment • 44% of PHCs implemented PEN, 19% had complete sets of essential medicines
Moldova (2020)	20 PHCs	<ul style="list-style-type: none"> • Improvements were seen in recording smoking status, measurement of HbA1c among diabetes patients and achieving control in HT treatment.
Kyrgyzstan (2017)	22 PHCs	<ul style="list-style-type: none"> • Detection rate of CVD risk factors and diseases did not change • Some changes in blood pressure control

EVIDENCE FROM PUBLISHED LITERATURE...3

Country (year)	Setting	Key findings
Indonesia (2016)	PHCs	<ul style="list-style-type: none"> • PEN program is more cost-effective than a base case of no program in place • Can be further improved through a targeted screening policy of high-risk groups of population aged 40 and above
Bhutan (2014)	PHCs	<ul style="list-style-type: none"> • Both the current PEN program and universal screening had lower lifetime costs and higher health gains than no screening • Cost effective if the prevalence of hypertension and diabetes is >3/10000 people
Jordan (2017)	2 MSF clinics	<ul style="list-style-type: none"> • Correct CCVD risk estimation in 60% of cases • 48% of people eligible for lipid lowering agents received them • Providers favored lifestyle interventions over drug treatment
Samoa (2019)	Community	<ul style="list-style-type: none"> • More than 90% of target population has been screened for NCDs and nearly half of the screened had NCD risk factors

CONTRIBUTION OF WHO PEN TO HEALTH SYSTEM BUILDING BLOCKS

Leadership/ Governance

- ✓ Assess needs and gaps and facilitate the use of available resources for the prevention and control of NCDs efficiently and equitably
- ✓ Support government efforts to drive the agenda toward universal coverage

Financing

- ✓ Prioritize NCD interventions to support raising of adequate funds for universal coverage
- ✓ Facilitate phased-out provision of financial protection for NCDs

Medical products and technologies

- ✓ Define prerequisites for integrating a core set of essential NCD interventions into primary care
- ✓ Develop an affordable list of essential medicines and appropriate Technologies
- ✓ Improve access to essential medicines

Health information system

- ✓ Provide templates to gather reliable health information of people

Health workforce

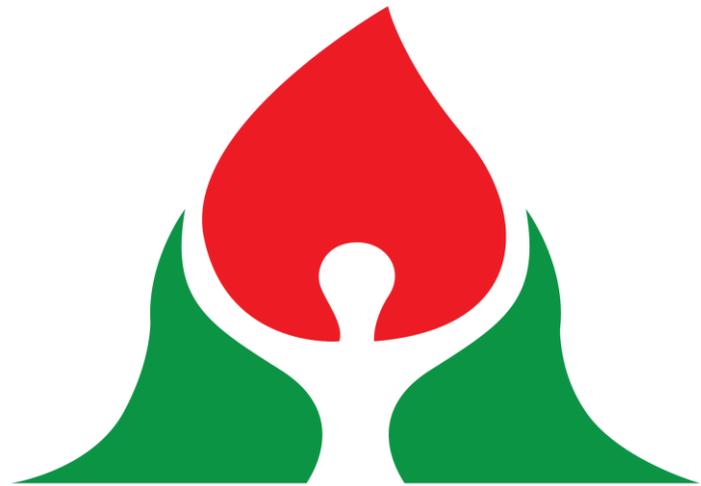
- ✓ Provide training material to enhance knowledge and skills for NCDs prevention and control
- ✓ Audit performance

Service delivery

- ✓ Improve access to essential preventive and curative NCD interventions
- ✓ Provide equitable opportunities for early detection
- ✓ Define a core set of cost-effective NCD interventions
- ✓ Provide tools for their implementation
- ✓ Improve the quality of care
- ✓ Improve the gate-keeper function of primary care
- ✓ Reduce costs due to hospital admissions and complications

People

- ✓ Develop tools for community engagement and empowerment of people for self-care
- ✓ Improve health outcomes



CNCNDN

**CENTRE FOR NON-COMMUNICABLE
DISEASES AND NUTRITION**

PEN ACTIVITIES OF CNCNDN

CNCNDN AT A GLANCE

- **Year of Establishment:** 2017
- **Funded by:** National Institute for Health and Care Research, UK
- **Supported by:** Global Health Research Unit (GHRU), Imperial College London, UK

FOUNDING PARTNERS



জাতীয় হৃদরোগ ইনস্টিটিউট



Inspiring Excellence



AIM OF THE CENTER

To prevent and control non-communicable diseases and malnutrition in Bangladesh and Global South



OBJECTIVES

- 1 Research:** Conduct and facilitate discovery, development and delivery research on NCD and nutrition
- 2 Education and training:** Strengthen capacity of students, researchers, health care providers, policy makers, program personnel, media representatives and general population on prevention and control of NCDs and malnutrition
- 3 Guidelines and quality standards:** Develop and facilitate development of guidelines and quality standards for the prevention, treatment and control of NCD and malnutrition

OBJECTIVES

- 4 Evidence-based policy and programmes:** Carry out advocacy and provide technical support for evidence-based policy-making, programme design and implementation aimed at prevention and control of NCDs and malnutrition
- 5 Partnership and networking:** Foster effective partnership among government organizations, non-government organizations and development partners working for prevention and control of NCDs and malnutrition

PEN TRAINING ACTIVITIES..1

- Training on the World Health Organization (WHO) Package of Essential Non-communicable Diseases (PEN) Interventions for Primary Health Care Workers
- In 2019, in the 1st phase, the training was provided to 102 primary health care providers (Doctors, Nurses, and Paramedics) and 305 community health team participants (Supervisors of Community Health Workers, Community Health Workers) [407 total]
- In 2020, in the 2nd phase, PEN training was provided to 157 PHC providers and 127 community health team members
- In 2021, in the 3rd phase, PEN training was provided to 154 PHC providers along with supportive supervision visits
- In 2022, in the 4th phase, PEN training is being provided to 150 PHC providers and supportive supervision training is being provided to 193 community health care providers



PEN TRAINING ACTIVITIES..2

Developed/contributed to the development of training materials

- Training manual for i. Physicians, Nurses, Medical Assistants; ii. CHCP and HAs; and iii. Community Health Workers
- Participant workbook and health records for all training
- Flipchart for training Community Health Workers



Participant Workbook and Personal Health Record

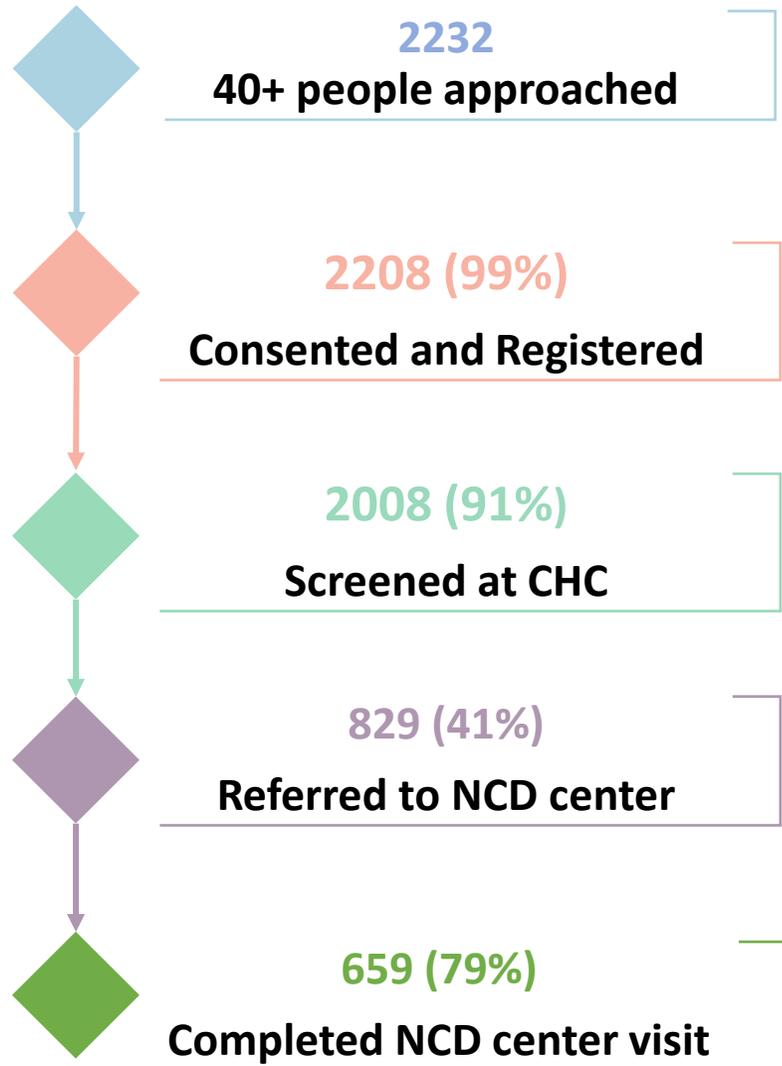


PEN TRAINING ACTIVITIES..3

- CNCNDN provided resource persons for “Training on NCD Management Based on WHO PEN Package” organized by DGHS, JICA, and WHO
 - The training was provided to 48 persons (Physicians, nurses and SACMO)
- CNCNDN staff members provided training to 629 government staff of 6 sub-districts in Cox’s Bazar and Narsinghdi



REGISTRATION, SCREENING AND ENROLLMENT POC PILOT PROJECT IN PARBATIPUR

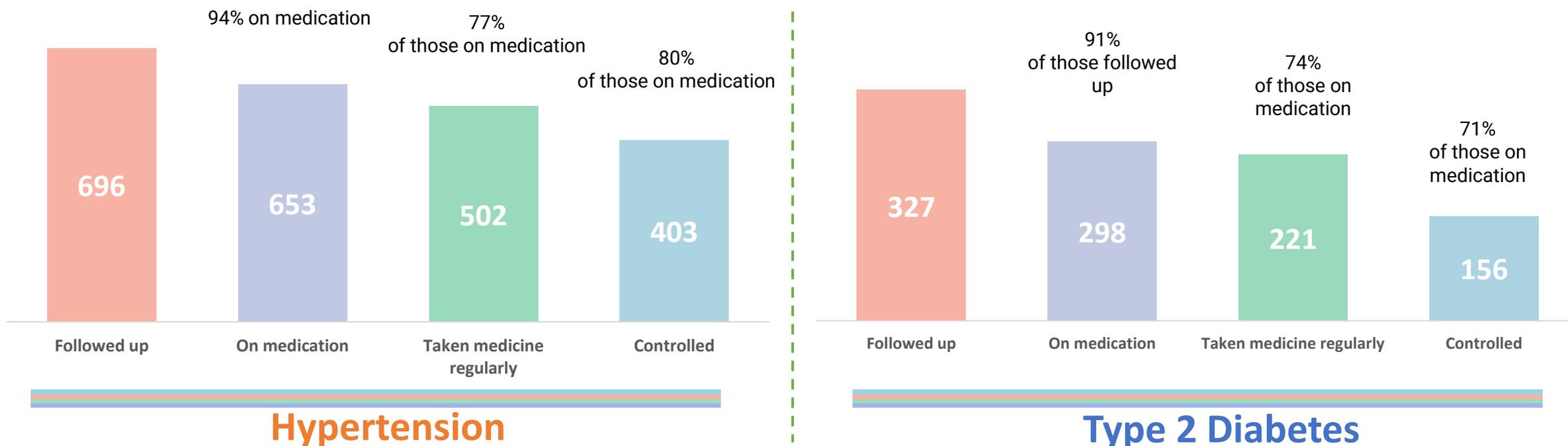


Domain	Number of participant	Percentage
Diagnosed with NCD	639	97% of referred
Diagnosed with hypertension	552	84% of diagnosed
Diagnosed with Diabetes	222	35% of diagnosed

COUNSELING OUTCOME

- 30% of those who wanted to quit tobacco could quit (163/542)
- 65% of those who wanted to reduce salt intake could reduce (150/230)
- 68% of those who wanted to increase physical activity could increase (84/123)
- 42% of those who wanted to increase fruits and vegetable intake could (90/213)

Follow up visit: Completion and outcome



CHALLENGES AND SOLUTIONS: DEMAND SIDE

Domain	Challenges	Ways to overcome
Adherence and follow-up	<ul style="list-style-type: none"> Lack of adherence to medication Reluctance for follow-up visits 	<ul style="list-style-type: none"> Regular supply of medicines Counseling on drug adherence and follow-up
Self-care	<ul style="list-style-type: none"> No awareness of self-care 	<ul style="list-style-type: none"> Training of health care providers on self-care and counseling of the patients
Medicine shopping	<ul style="list-style-type: none"> Patients come to health centers just to collect medicines 	<ul style="list-style-type: none"> Digital recording and use of NID
High waiting time, transport cost	<ul style="list-style-type: none"> Long wait, facilities are far away 	<ul style="list-style-type: none"> Point of care tests at the NCD service delivery point, community-based services
Involvement of non-medically trained providers (NMTP)	<ul style="list-style-type: none"> Patients frequently visit NMTP NMTP advise against regular medications and overmedicate 	<ul style="list-style-type: none"> Involve medically trained providers Awareness raising and counseling
Counseling	<ul style="list-style-type: none"> Individual counseling is time consuming 	<ul style="list-style-type: none"> Brief intervention (5A-5R approach) Health education using audio-visual aids Use of posters/flip charts, community services

CHALLENGES AND SOLUTION: SUPPLY SIDE

Domain	Challenges	Ways to overcome
Human resources	<ul style="list-style-type: none"> Shortage or acute shortage of trained HR Turn over, frequent transfer or no transfer 	<ul style="list-style-type: none"> At least one physician, one nurse/SACMO and one dedicated person for counseling in the PHC, fixed staff for PHC, Training and refresher training
Drugs, supplies and equipment	<ul style="list-style-type: none"> Irregular supply/oversupply/lack of supply/with close expiry dates 	<ul style="list-style-type: none"> Regular supply based on the need of the facilities Local level coordination Digital BP machines, digital weighing scales and regular calibration
Service delivery	<ul style="list-style-type: none"> Overload Lack of time for counseling Lack of home visits 	<ul style="list-style-type: none"> Decentralization of services (screening, medicine refilling) Involve lower level facilities, one stop services from the NCD service delivery point, options for home visits
MIS and record keeping	<ul style="list-style-type: none"> Paper-based record, too many forms No use of data for local decisions Data not reported to national MIS 	<ul style="list-style-type: none"> Digital record keeping and use of data for decision making Reporting of NCD services regularly and inclusion of more NCD indicators in DHIS2/NCD display board/Registers and SS log
Financing and sustainability	<ul style="list-style-type: none"> Inadequate and NCD services are not prioritized Lack of resources 	<ul style="list-style-type: none"> Adequate evidence-based financing and prioritization of NCD services Local level financing for drugs and supplies Health insurance, effective use of out-of-pocket expenses
Governance	<ul style="list-style-type: none"> Irregular supervision of NCD services 	<ul style="list-style-type: none"> Implementation of regular supportive supervision Local level NCD prevention and control coordination committee



WHO PACKAGE
OF ESSENTIAL
NONCOMMUNICABLE (PEN)
DISEASE INTERVENTIONS
FOR PRIMARY HEALTH CARE



ADAPTING WHO PEN

ADAPTING WHO PEN

- A stepwise approach to the implementation of WHO PEN is presented in the subsequent slides.
- The key advantage of a stepwise approach, whether to prevention, surveillance, or management, is that it offers a framework to help countries get started and to focus on what is practical, taking into account the available human, financial and other resources.

ADAPTING WHO PEN...STEPS

01

ENGAGE STAKEHOLDERS



04

CAPACITY BUILDING



02

ASSESS CURRENT STATUS OF NCDs



05

MONITORING AND EVALUATION



03

DEVELOP A SERVICE DELIVERY MODEL FOR PHC



06

REVIEW AND PLAN FOR SCALE UP



STEP 1

1 ENGAGE STAKEHOLDERS

■ Identify key stakeholders invested in the current NCD health service delivery system to invite to the consultation. This is to build consensus and garner broad-based support.

- National-level: Ministry of Health, Ministry of Finance, Ministry of Social Welfare, political leaders at state or division-levels
- Local/Community-level: Local political leaders, community leaders, public sector health providers, private sector health providers
- Other sectors: NCD specialists, media, research groups or academic institutions, civic groups or health-oriented nongovernmental organizations (NGOs)

■ Obtain an agreement to adapt WHO PEN and strengthen NCD management in primary care

■ Establish technical working group

- Composition: Public health and clinical staff members (including medical, nursing and pharmaceutical)
- Role: To provide overall direction, leadership and supervision to the local adaptation of the WHO PEN and to national rollout; advise on the number of additional personnel needed, the required competencies, skills and their roles and responsibilities; and provide specific technical advice or support for the adaptation or development of the protocols

■ Identify demonstration site

- The recommended criteria for selection of site:
 - Geographic access and communication
 - Health centres with a referral care facility
 - Agreement from local government
 - Support from professional associations and civil society groups
- List all primary health care centres
- Select a sample of facilities – usually 10% of the total number of facilities in the selected site
- Establish an agreement with demonstration site (e.g provincial agreement or district agreement) and include operational structure

■ Conduct facility assessment

- First create a map of the sample of health facilities at demonstration site and the referral linkages
- Conduct a facility assessment (Annex 4.1)
- Analyse the information collected and identify gaps in training, equipment, drugs, record keeping, and management practices
- Determine minimum requirements of skilled staff, equipment, devices and medicines needed for implementing the package

STEP 2

2 ASSESS CURRENT STATUS OF NCD

- Desktop review of all related strategies, policies (including public policy measures on tobacco, alcohol, diet and physical activity) and guidelines relating to NCDs in primary health care
- Using the template to the right determine the current PHC infrastructure
- Map the current patient pathway for NCD service delivery
- Conduct a SWOT analysis of the country's NCD service delivery system using the template below



GOVERNANCE AND LEADERSHIP

- Is NCD risk management in primary health care included in the: national/district health strategy; national NCD strategy; national operational plans; basic package of services?
- Is management of CVD /Hypertension /diabetes /CRD/ cancer included in national clinical guidelines for primary health care?
- Do national clinical guidelines for primary health care include evidence-based protocols for risk-based CVD management?
- Are there standardized systems/tools for mentoring and supervision of primary health-care staff?
- What is the frequency of district management meetings? Who attends?

HEALTH FINANCING

- Is there a specific NCD budget within health financing? If yes, what is it?
- In those systems with health insurance, are NCD services and medicines included in benefit packages?

ACCESS TO ESSENTIAL MEDICINES AND TECHNOLOGIES

- Are the minimum essential medicines (Annex 4.2) for NCDs included in the national essential medicines list and the minimum primary health care medicines list?
- Are the essential NCD technologies and tools (Annex 4.3) included in minimum standards for primary health care facilities?
- Describe the national medicines supply management system (selection, quantification, procurement, storage, distribution).

HEALTH WORKFORCE

- Are there dedicated management staff for NCD management at national and district levels?
- Which staff cadres have authority to prescribe and/or authorize medication refills?
- Have task-sharing approaches in primary health care been adopted or considered?
- Do in-service training packages exist for management of CVD, hypertension or diabetes in primary health care?
- Has any in-service training on NCD risk management occurred in last 2 years? If yes, who delivered it?

HEALTH INFORMATION SYSTEMS

- Are there mechanisms for data feedback from national, to subnational, to facility level?
- Are there dedicated staff to collect data at district level?
- Describe the district-level database for routine health management information system and other facility data.
- Are NCD management indicators included in a national minimum indicator set?
- Describe the type of individual patient record format used in public primary health-care facilities.
- An sample clinical record is given (Annex 4.4)

ORGANIZATION OF SERVICE DELIVERY

- Describe the facility levels within the public health system.
- Describe NCD management services available at each level of care including a healthy lifestyle counselling component.
- Are catchment populations defined for primary health care?
- What is the current service delivery model(s) in public primary health-care facilities? For example, general outpatient services where patients see any available provider; disease specific clinics. Are there established national and/or district-level quality improvement systems for primary health care?

STEPS 3-5

3 DEVELOP A SERVICE DELIVERY PACKAGE FOR PHC

- **Develop a service delivery package relevant to the local context by adapting WHO PEN.**
 - Elements to consider when developing a service delivery package:
 - Health facility should be equipped to provide basic promotive, preventive and some curative services along with referrals and follow up
 - A matrix can be developed to map the various units of service and details under each unit as services, infrastructure, equipment and personnel
 - Once each unit matrix is ready then the final matrix can be developed by matching the matrices for common items
 - Consider urban vs rural service delivery models
 - Decide on appropriate WHO PEN protocols for implementation
 - Decide which protocol to implement based on community and health systems capacity assessments, and consideration of health priorities and the availability of human and technical resources. Adapt management protocols as required to reflect country context, availability of drugs etc

4 CAPACITY BUILDING

- **As per service model, conduct appropriate training to primary care workers to deliver integrated NCD care – to assess, diagnose, manage and refer patients appropriately. Primary care workers should be able to:**
 - Apply relevant WHO PEN protocols and tools and interpret the results
 - Understand referral thresholds
 - Be familiar with the system and information to record and track to monitor WHO PEN implementation
 - Deliver preventive health interventions and empower patients
 - Plan for improving patient adherence to follow-up visits
 - Consider incorporating the WHO PEN training into medical, nursing and allied health course curriculum, and providing continuing education courses for primary care health workers

5 MONITORING AND EVALUATION

- **Health facilities should have a system for collection of data. Sample clinical record is provided in Annexe 4.4. Data collation and analysis may be done at appropriate levels. Indicators for hypertension and diabetes are provided in Annex 4.5. They can serve as tracers for assessing the services.**
- **Establish monitoring process:**
 - Second-level facility (e.g. national, provincial or district health office) to conduct visits to first-level health facilities at least once every three months
 - Conduct periodic audits of facilities providing the services

6 REVIEW AND PLAN FOR SCALE UP

■ Review and evaluate demonstration phase

- Conduct an external assessment and audit of clinical practice.
- Analyse the findings to assess the model and make necessary refinements.

■ Finalize service delivery model and requirements

- Agree on the service delivery model based on the feasibility and sustainability.
- Finalize the national protocols, referral criteria, and the equipment, drugs and consumables required.
- Agree on the human resources needed, their roles and responsibilities, and the training curriculum.
- Finalize the requirements of the health information system and clinical recording system.
- Agree on the monitoring and evaluation system, and the tools for auditing.

■ Develop a multi-year plan to expand services nationwide

- Estimate the cost for the national expansion plan. Utilize cost information from the demonstration phase and from the costing study.
- Have a plan to ensure most cost-effective procurement and distribution of drugs and consumables. E.g. include core NCD drugs and technologies in the essential drug list; ensure transparency in the tender process; purchase cheaper quality generics and consider removing taxes and duties on essential drugs and technologies.
- Strengthen demand forecasting and supply chain mechanisms; strengthen health information system and analyse ordering cycle at the health centre.
- Obtain administrative order to expand services nationwide. Detail service model, roles and responsibilities, national protocols, and plan of action.
- Secure allocation in national health budget.
- Mobilize development partners, private sector, academia and the community to contribute to strengthening NCD management in primary health care.
- Conduct periodic monitoring and regular evaluation. Repeat annually for short-term indicators (e.g. impact indicators) and every 3–5 years for medium-term progress indicators (e.g. outcome indicators).

THANKS!

Q&A

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