Lao People's Democratic Republic

Peace Independence Democracy Unity and Prosperity

National Multisectoral Action Plan for the Prevention and Control of Noncommunicable Diseases 2014-2020 (LAOSMAP-NCD)

Ministry of Health

September 2014

Contents

Lao People's Democratic Republic

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Ministry of Health

No. 1595/MoH
Vientiane Capital, 22 Sep 2009

Decree of Minister of Health
On the Appointment of the Responsible Committee for Drafting National Policy on Noncommunicable Diseases (NCDs)

- Pursuant to the decree of the Prime Minister No. 114/PM, dated 04July 2008, on the structure and administration of Ministry of Health.
- Pursuant to proposal of Department of Health Care No. 768/DHC, dated 05Aug 2009.
- Pursuant to the consideration and proposal of Department of Health Personnel.

Minister of Health agreed:

Article 1: Appointment of responsible committee for drafting National Policy on Noncommunicable Diseases (NCDs) as follow:

1) General supervision committee:
   1. Prof. Dr. Eksavang Vongvichit, Vice Minister of Health, Chief.
   2. Prof. Dr. Sommone Phounsavath, Director General, Department of Health Care, Deputy Chief.
   3. Prof. Dr. Chanpheng Thammavong, Director of Mahosot Hospital, Committee.

2) Technical taskforce team:
   1. Assoc. Prof. Dr. Chanphomma Vongsamphanh, Chief.
   2. Assoc. Prof. Dr. Vanliem Boualavong, Director of Mittaphab Hostpital, Deputy Chief.
   3. Assoc. Prof. Dr. Bounkong Syhavong, Deputy Director of Mahosot Hospital, Committee.
   4. Assoc. Prof. Dr. Khampé Phongsavath, Director of Sethathirath Hospital, Committee.
   5. Assoc. Prof. Dr. Vang Chu, Head of Cardiovascular Division, Mahosot Hostpital, Committee.
   6. Assoc. Prof. Dr. Bouavanh Rashchack, Head of IPD II, Mahosot Hostpital, Committee.
   7. Dr. Phisith Phoutsavath, Head of Hospital Management Division, DHC, Committee.

8. Dr. Phengdy Inthaphanith, Head of Nurse Division, Department of Health Care, Committee.
9. Dr. Chanhphet Phothilath, Acting Head Technical support Unit, Committee.
10. Dr. Snong Thongsna, Head of Cardiovascular Division, Mittaphab Hospital, Committee.
11. Dr. Somchanh Soudalay, Head of Nurse Division, Sethathirath Hospital, Committee.

Roles and responsibilities: research, analysis and planning to develop draft national policy on NCD to propose the result of the development to the meeting; report the progress of work to the high level committee of Minister to be informed and to coordinate and work with WHO consultants.

3) Coordination and secretariat team:
1. Dr. Bounthanh Chaleunsouk, Head of Administrative Division, DHC. Chief.
2. Dr. Sisouphanh Luanglath, Deputy Head of Administrative Division, DHC. Deputy Chief.
3. Dr. Sommana Rattana, Technical Support on Hospital Management, DHC. Committee
4. Dr. Hongthong Sivilay, Technical Support Staff, DHC, Committee.
5. Ms. Vongdeaun Savansack, Technical Support Staff on Drug Control, DHC. Committee.

Roles and Responsibilities: to coordinate with other concerned parties, facilitate on management and other services in organizing the meeting, note-taking, writing summary report to submit to high level committee of minister to inform.

Article 2:
WHO provide financial support for the development of the national NCD policy, amount 57,000,000 LAK (fifty-five million Lao Kip).

Article 3:
MoH Cabinet, Department of Health Personnel, Department of Health Care, all concerned persons that were appointed and other concerned parties are together implementing this decree as the roles and responsibilities individually.

Article 4: This decree is effectively used on the signature.

Minister of Health

(Signed and stamped)

Dr. Ponmek Dalaloy
Minister of Health, Lao PDR

Deliver places:
- MoH cabinet 1 copy
- Department of Health Care 1 copy
- Concerned sectors 1 copy
- Concerned people 1 copy
- Filing 1 copy

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Ministry of Health

No. 474/MoH
Vientiane Capital, 12 Feb 2014

Decree of Minister of Health

On the Appointment of the Responsible persons and Coordination Committee of Noncommunicable Diseases (NCDs)

- Pursuant to the decree of the Prime Minister No. 178/PM, dated 05 April 2012, on the structure and administration of Ministry of Health.
- Pursuant to proposal of Department of Health Care No. 139/DHC, dated 04 Feb 2014.
- Pursuant to the consideration and proposal of Department of Health Personnel.

Minister of Health agreed:

Article 1: Appointment of responsible persons and coordination committee for noncommunicable diseases as follow:

1) General Leaders:

1. Assoc. Prof. Dr. Bounkong Syhavong, Vice Minister of Health.
2. Assoc. Prof. Dr. Chanphomma Vongsamphanh, Director General, Department of Health Care.

2) Coordination and Taskforce Team:

1. Dr Phisith Phoutsavath, Deputy Director General, Department of Health Care.
2. Dr Snong Thongsna, Deputy Director, Mittaphab Hospital.
3. Prof. Dr Vang Chu, Director of Cardiology Institute, Mahosot Hospital.
4. Dr Bouavanh Southivong, Deputy Head, Division of Central Hospital and Health Care Center.
5. Dr Sommana Rattana, Deputy Head, Division of Local Hospital.

This team has a leading role to guide the general leaders for implementing, facilitating, coordinating with higher levels and international organizations in order to achieve the implementation plan of NCDs in Lao PDR and also do the progress report of work to General Leaders at each stage.

Article 2: MoH Cabinet, Department of Health Personnel, Department of Health Care, concerned sectors and other parties are together to implement this decree.

Article 3: This decree is effectively used on the signature.

Minister of Health

Deliver places:

- MoH cabinet 1 copy
- Concerned sectors 1 copy
- Concerned people 1 copy
- Filing 1 copy

(Signed and stamped)

Prof. Dr Eksavang Vongvichit
Minister of Health, Lao PDR

Lao People's Democratic Republic

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Ministry of Health

No. 2423/MoH

Vientiane Capital, 16 Sep 2014

Decree of Minister of Health

- Pursuant to the decree of the Prime Minister No. 178/PM, dated 05 April 2012, on the structure and administration of Ministry of Health.
- Pursuant to the decree of the Minister of Health No. 1640/MoH, dated 08 July 2014 on the endorsement and implementation of National Policy on the prevention and control of Noncommunicable Diseases (NCDs) in Lao PDR.
- Pursuant to the consideration and proposal of Department of Health Care.

Minister of Health agreed:

Article 1: approval and announcement of using Multisectoral action plan for the prevention and control of Noncommunicable Diseases (NCDs) in Lao PDR.

Article 2: dedicated to the Department of Health Care to coordinate with concerned parties at central and grassroots level to extend the implementation of this national policy with field action and report back to ministerial committee at different stage of implementation.

Article 3: MoH Cabinet, concerned Departments, Institutions, Hospitals, Health Centres, Provincial Health Departments, Vientiane Capital and other concerned parties to be aware, provide support andcollaborate to implement this decree with good results and achievement.

Article 4: This decree is effectively used on the signature.

Signed for **Minister of Health**

(Signed and stamped)
Assoc. Prof. Dr Bounkong Syhavong
Vice Minister of Health

Name lists of the research and development team
For the development of MSA plan

No	Name and surname	Organization
I	**Ministry of Health**	
1	Dr Phisith Phoutsavath	Department of Health Care
2	Prof. Dr. Vang Chu	Mahosot Hospital
3	Dr. Snong Thongsna	Mittaphab Hospital
4	Dr. Bouavanh Southivong	Department of Health Care
5	Dr. Sommana Rattana	Department of Health Care
6	Dr Daovone Thepsouvanh	Mittaphab Hospital
7	Dr. Phetsamone Alounelangsi	Mittaphab Hospital
8	Dr. Sisouphang Vidamaly	Mahosot Hospital
9	Dr. Xaysana Sombandith	Mahosot Hospital
10	Dr. Bounmy Sisamouth	Sethathirath Hospital
11	Dr. VassanaVongvandy	Mahosot Hospital
12	Dr. Naly Norsackpaseuth	Mittaphab Hospital
13	Dr. Keoketthong Phongsavanh	Sethathirath Hospital
II	**WHO**	
1	Dr Liu Yunguo	WHO representative to Lao PDR.
2	Dr Cherian Varghese	Senior technical officer, NCD unit, WPRO.
3	Dr. Ko Eunyoung	Technical Officer, Project team leader for MCD/NCD/TFI, WHO, Lao PDR.
4	Mr. Phonesavanh Keomanysone	National Professional Officer, NCD unit, WHO, Lao PDR.

Preface

One of the current priorities of the Government of Lao PDR is on disease prevention; which calls to strengthen health promotion, improve the quality of health with the aim to make Lao people healthy. Particular focus has been placed on maternal and child health, poverty-stricken people and those living in remote, hard to reach areas. The Ministry of Health has issued the health care policy to ensure equity, quality of care and safe health care practices.

Noncommunicable diseases (NCDs) are on the rise to become one of the major cause of morbidity and mortality of the people in Lao PDR. The morbidity from NCD has a direct impact to health problems as well as national socio-economic development.

With the increased prevalence of NCD, it is important to have a policy specifically targeted for the prevention and control of NCDs. The Ministry of Health has issued this policy by actively engaging the participation of technical groups from MoH cabinet, macro departments, institutions, universities, hospitals, and concerned health care centers under the Ministry of Health and the ownership has been assigned to the Department of Health Care.

International organizations, in particularly WHO Regional Office for Western Pacific Region and the WHO Lao Country Office has supported and contributed to the efforts by providing both technical and financial assistance for the prevention and control of NCDs initiative in Lao PDR.

The issuing of this policy tie in to the health care reform plan, the need to strengthen capacity on health promotion and health education, early detection of diseases, diagnosis, medical action, resuscitation, rehabilitation, and high quality prevention in line with the international and regional recommended standards.

On behalf of the Ministry of Health, I would like to express my sincerest thanks to all concerned parties for their invaluable contributions in developing this policy. I believe that this policy will become an important tool to improve the quality of health care service with a focus on better health services delivery to support the achievement of the goals in the health sector development plan andat the same time, contributing to the poverty reduction plan of the Government of Lao PDR.

Vientiane Capital, 12 May 2014

[Signed and stamped]
Prof. Dr. Eksavang Vongvichit
Minister of Health

I. Introduction

Noncommunicable diseases (NCDs) comprise mainly cardiovascular diseases, cancers, diabetes, heart diseases, stroke and chronic lung diseases. NCDs to a large extent, is the result of four main behavioural risk factors namely tobacco use, unhealthy diet, insufficient physical activity and the harmful use of alcohol, which are all related to the economic transition, rapid urbanization and 21st century lifestyles.

Premature morbidity and mortality from NCDs impact on the health and development of a country. In addition to loss of productive workforce, families go in to poverty if one of the family members suffers from NCDs. There is also inequity in NCDs, poor people tend to succumb to NCDs and they may not get adequate and optimal treatment.

WHO introduced the global and regional action plans for the prevention and management of NCDs with voluntary targets and specific indicators which are now ready for use at the national level. The global goal is a relative reduction in premature mortality (30 to 70 years) by 2025. This goal focuses on an achievable level of prevention depending on the current state of the epidemic in the country.

The battle against NCDs needs a 'whole-of-society' approach with a 'whole-of-government' response. All ministries and sectors have a role to play. Creating an enabling environment where healthier choices are easier choices should be our aim. A national multisectoral NCD policy supported by strong commitment from ministries of health, including establishment of a dedicated unit, is needed to address this emerging public health challenge. The plan must be integrated so it cuts across diseases and can focus on the common risk factors.

A multisectoral action plan for the prevention and control of NCDs is required. NCDs are not just a health problem – they are a national development problem. The NCD epidemic will damage the national economy and deepen poverty for households. Most of the causes of the NCD epidemic lie outside the control of the health sector. Some of the most effective interventions for NCDs fall under the responsibility areas of other sectors and government departments. Tobacco and alcohol taxation requires leadership from the Ministries of Finance and Trade. The Ministry of Industry and

Commerce has a key role in reducing the salt consumption. The Ministry of Education needs to be involved in promoting healthy diets in schools along with other healthy behaviours. Urban planning departments can facilitate public transport and infrastructure to support physical activity.

II. Global and regional updates

The Western Pacific Regional Action Plan for the Prevention and control of Noncommunicable Diseases 2014-2020 has been endorsed by the Regional committee in October 2013. The regional plan was developed in full alignment of the global NCD action plan and provides a menu of policy options and cost-effective interventions for the prevention and control of major NCDs (Annex 1). A set of very cost-effective interventions are presented in Table 1

Table 1.Very cost-effective interventions for prevention and control of NCDs[1]

Risk factor / Disease	Policy options / Interventions
Tobacco use	• Reduce affordability of tobacco products by increasing tobacco excise taxes Create by law completely smoke-free environments in all indoor workplaces, public places and public transport • Warn people of the dangers of tobacco and tobacco smoke through effective health warnings and mass media campaigns • Ban all forms of tobacco advertising, promotion and sponsorship
Harmful use of alcohol	• Regulating commercial and public availability of alcohol • Restricting or banning alcohol advertising and promotions • Using pricing policies such as excise taxes on alcoholic beverages
Unhealthy diet	• Reduce salt intake[2] • Replace trans fats with unsaturated fats • Implement public awareness programmes on diet
Physical inactivity	• Implement public awareness activities to promote the benefits of a physically active lifestyle.
CVD and diabetes	• Drug therapy (including glycaemic control for diabetes mellitus and control of hypertension using a total risk approach) to individuals who have had a heart attack or stroke and to persons with high risk (≥ 30%) of a fatal and nonfatal cardiovascular event in the next 10 years • Acetylsalicylic acid for acute myocardial infarction

[1] Global Action Plan for the Prevention and Control of Noncommunicable Diseases (2013-2020) Appendix 3/Corr.1
[2] And adjust the iodine content of iodized salt, when relevant.

Cancer	• Prevention of liver cancer through hepatitis B immunization • Prevention of cervical cancer through screening (visual inspection with acetic acid [VIA] (or Pap smear (cervical cytology), if very cost effective) linked with timely treatment of pre-cancerous lesions

Accelerated implementation of the WHO Framework Convention on Tobacco Control, WHO Global Strategy to reduce harmful use of alcohol, WHO Global Strategy on Diet, Physical Activity and Health, WHO recommendations on the marketing of food and non-alcoholic beverages to children and the WHO Global Strategy for infant and young child feeding can significantly contribute to the prevention and control of NCDs.

As outlined in the Political Declaration of the High Level Meeting of the General Assembly on the Prevention and Control of NCDs,[3] prevention and control of NCDs can be included within sexual and reproductive health and maternal and child health programmes, especially at the primary health-care level, as well as other programmes, as appropriate, and also integrate interventions in these areas into NCD prevention programmes.

III. Burden of Noncommunicable diseases in Lao PDR

According to the Global Status Report on NCDs, published by the World Health Organization in 2010, deaths due to NCD were 12100 in men and 11700 in women in Lao PDR in 2008. Of these, 38.6% in men and 32.6% in women were under the age of 60 years indicating a heavy premature burden from NCDs. The national NCD risk factor survey (STEPS) conducted in 2013 provides the prevalence of risk factors and some information on NCD mortality from the global status report (Table 2).

[3]United Nations General Assembly resolution 66/2 (http://www.who.int/nmh/events/un_ncd_summit2011/political_declaration.pdf)

Table 2. Burden of NCDs and prevalence of NCD risk factors in Lao PDR

	Male (%)	Female (%)	Total (%)
NCD MORTALITY*			
Total NCD deaths (000s)	12.1	11.7	
NCD deaths under age 60 (percent of all NCD deaths)	38.6	32.6	
Age-standardized death rate per 100 000			
All NCDs	894.4	689.0	
Cancers	145.4	111.1	
Chronic respiratory diseases	122.8	103.4	
Cardiovascular diseases and diabetes	467.9	392.8	
BEHAVIOURAL RISK FACTORS**			
Current daily tobacco smoking	47.8	8.3	24.6
Current alcohol consumption	65.5	33.7	
Percentage who ate less than 5 servings of fruit and/or vegetables on average per day	94.7	95.3	94.2
Physical inactivity	6.2	17.7	13.1
METABOLIC RISK FACTORS**			
Raised blood pressure (including those on medication)	17.1	19.8	18.7
Raised blood glucose	7.4	5.8	8.5
Overweight	25.6	21.4	24.5
Obesity	5.7	3.5	4.3
Raised cholesterol	23.3	15.4	28.6

** WHO Global Status Report on Noncommunicable Diseases 2013*

*** STEPS 2013*

IV. Status of NCD prevention and control

Lao PDR has many programmes which will impact NCDs. Tobacco law is available and many measures concerning to tobacco control have been carried out to as recommended by WHO FCTC such as tobacco advertisement ban, workplaces and public places smoke free area policy, etc.

Vientiane Healthy City program aims to stimulate multisectoral action on NCD prevention and control under local government leadership. Several laws have been developed such as law on health promotion, diseases prevention and control, environment protection law, food law and nutritional law. Current legislations, year of enactment and reference is given in Table 3. These legislations and their implementation will have an impact on controlling NCDs.

Table 3. Legislations relevant for NCD policy in Lao PDR

Name of the legislation	Year of enactment	Reference (number)	Status of implementation
Health care law	09/11/2005 9 /12/2005	09/NA 739/PR	Implemented
Law on hygiene, prevention and health promotion	21/12/2011 16 /01/ 2012	024/NA 051/PR	Implemented
Food law	24/7/ 2013 20/8/2013	06/NA 172/PR	Implemented
Law on medicines and medical equipment	21/12/2011 16 /01/2012	023/NA 050/PR	Implemented
Law on environment protection	18/12/2012 17/01/2013	041/NA 026/PR	Implemented
Law on tobacco control	26/11/2009 16/12/2009	199/NA 160/PR	Implemented
National law on nutrition	Not yet	Not yet	Being planned
Alcohol law	Not yet	Not yet	To be submitted to Lao National Parliament in 2014

The main challenges for Lao PDR in NCD prevention and control activities are in the field of capacity building with insufficient healthcare staff dedicated for this purpose. In addition, conflict

of interest with tobacco and alcohol companies is another issue to effectively implement NCD prevention and control measures.

WHO has carried out NCD country capacity survey in 2004, 2010 and 2013.Progress in national capacity in different domains were assessed and the status of Lao PDR is presented in Table 4.

Table 4. Capacity for NCD prevention and control: 2014, 2010 and 2013

	2004	2010	2013
INFRASTRUCTURE			
Unit/branch/department in the Ministry of Health or equivalent with responsibility for NCDs	No	Yes	Yes
NCDs or their key risk factors addressed by any other government ministry or department	NA	NA	Yes
Fiscal interventions			
Alcohol	NA	NA	No
Tobacco	NA	NA	Yes
Formal multisectoral mechanism established to coordinate NCD policies	NA	NA	No
Partnerships / collaborations for implementing key activities related to NCDs	NA	No	No
POLICY			
National NCD policy, strategy or action plan which integrates several NCDs and their risk factors	No	Yes	No
Multisectoral	NA	NA	No
Reduce the impact on children of marketing of foods and non-alcoholic beverages high in saturated fats, trans-fatty acids, free sugars, or salt	NA	Yes	No
Promote population salt consumption reduction	NA	NA	No
SURVEILLANCE			
System for generating mortality by cause of death on a routine basis	NA	NA	No
Cancer registry	NA	No	No
HEALTH SYSTEM CAPACITY			
Full implementation of recognized / government approved evidence-based national guidelines/protocols/ standards for			
Hypertension	Yes	Yes	NA
Diabetes	Yes	Yes	Yes
Cancer	Yes	NA	Don't Know
General availability of tests and procedures at the primary health care level			
Measuring of weight		Yes	Yes
Measuring of height		Yes	Yes
Cervical cytology		Yes	Yes
Acetic acid visualization		DK	Yes
Blood glucose measurement		Yes	Yes
HbA1c test		Yes	No
Blood pressure measurement		Yes	Yes

Total cholesterol measurement		Yes	Yes
Urine strips for albumin assay		NA	Yes
General availability of medicines in the public health sector			
Insulin		Yes	Yes
Aspirin (100mg)		Yes	Yes
Metformin		Yes	Yes
Thiazide diuretics		Yes	Yes
ACE Inhibitors		Don't Know	Yes
Statins		Don't Know	Yes
Oral morphine		Don't Know	No
Availability of community/home care for people with advanced/end stages of NCDs		No	No

V. Strategic approaches

5.1 Tobacco

There is very strong global evidence on cost-effective interventions to reduce tobacco consumption. All of these measures are included in the WHO FCTC, which Lao PDR has ratified and is working towards implementing. By far and above the most effective strategy is increasing taxation to raise the price of tobacco. This increases smoking cessation and reduces young people taking up the habit. Other cost-effective strategies include creating smoke-free environments, warning people about the dangers of smoking, restricting the sale of tobacco, banning alcohol advertising, sponsorship and promotion, and offering assistance for smokers to quit.

5.2 Harmful use of alcohol

There is good evidence for the cost-effectiveness of a number of alcohol harm reduction measures. The most cost-effective interventions include raising alcohol taxes, restricting alcohol advertising and restricting the availability of alcohol. Measures to restrict alcohol availability include setting a minimum purchase age, limiting the density of alcohol outlets, and restricting the days, hours or when alcohol can be sold. Unlike tobacco, education and awareness raising campaigns about alcohol-related harms do not reduce alcohol harm, and should not be implemented.

5.3 Unhealthy diet & physical inactivity

A number of factors related to diet contribute strongly to NCDs:

- Excess consumption of sodium
- Excess consumption of fats, especially trans-fatty acids and saturated fats
- Excess consumption of free sugars (including from white rice, white bread and sugary drinks)
- Low consumption vegetables and fruits
- An excess of total energy consumed for the level of physical activity

There is evidence that multiple interventions work better than single strategies. Integrated communication and information campaigns promoting a healthy diet are cost-effective. There is strong evidence for the effectiveness of reducing salt consumption. Strategies to reduce salt consumption include working with the food industry to encourage reformulation, using regulations to mandate lower salt content, labelling and public education. In countries, such as Lao PDR, where iodised salt has been promoted to prevent iodine deficiency, this may inadvertently have encouraged household to use more salt. Communication on the use of iodized salt is needed to take into account the high prevalence of hypertension. Substitution of trans-fat for polyunsaturated fat is a cost-effective strategy. Many countries are now using taxation and subsidies to make healthy foods more affordable, and make unhealthy foods less affordable. Restricting the advertising and sale of unhealthy food and beverages to children is also a cost-effective strategy. Breastfeeding for infants reduces the development of hypertension, obesity and diabetes later in life. Raising public awareness of healthy diet and physical activity through the mass media is an effective strategy, and one of the WHO "best buys" for cost-effective NCD prevention and control.

5.4 Cardiovascular disease and diabetes

WHO package of essential NCD interventions presents a set of cost-effective and feasible interventions in resource limited settings. Adaptation of this package will help to provide effective management of NCDs. Infrastructure, drugs and technology along with trained health personnel are needed enhancing management of NCDs.

5.5 Cancer

A large number of cancers can be reduced by the interventions listed above. For example, tobacco control measures will prevent 80% of lung cancers, as well as breast, liver, cervical and stomach cancer. Alcohol control will reduce liver and breast cancers. Reducing salt consumption will reduce stomach cancers, and promoting a healthier diet/reducing obesity will reduce breast cancers.

In the short to medium-term, the most cost-effective interventions for cancer in Lao PDR are prevention and palliative care. It is not feasible to cure the majority of cancers in the Laos in the short-medium term, but it is feasible to reduce the numbers of Lao people with cancer who live in pain. The successful models of palliative care in low and middle income countries rely on community-based programmes and home-based care. For most cancers, improving screening and access to treatment can only be achieved in the long term. Screening/early detection should be scaled up only in conjunction with capacity to treat. The most urgent priority for this is cervical cancer, where it is possible to use a "see and treat" approach with early detection and treatment being offered in a single visit. A key strategic priority will be to intensify the national screening and early treatment of pre-cancerous lesions through a single-visit approach in women 35-49 years.

The WHO package of essential NCD interventions can be adapted in health services. A defined set of services can be provided through the different service delivery mechanisms once they are fully equipped and with a good referral system. **Error! Reference source not found.**Table 5 presents an approach to strengthen NCD prevention and control in the health services.

Table 5. Approach for strengthening NCD management

Activities	Primary Health Care (Health centre & district)	Secondary care (Provincial hospitals)	Tertiary care (Central hospitals National Institute National Centres)
NCD tasks	**NCD staff**	**NCD staff/unit**	**NCD Unit**
NCD Screening	+++	++	+
Counselling	+++	+++	+++
Investigation facility	+	++	+++
NCD treatment	+	++	+++
NCD Follow up	+++	++	+
Medical equipment	+	++	+++
Medicine	+	++	+++
Expertise	++ **FaMed/GP & nurses**	+++ **GP & Specialist**	++++ **(specialist)**
Referral upstream	+++	++	
Referral downstream		++	+++
Monitoring / Audit/evaluation	+	++	+++
Health education	+++	++	+
Research	+	++	+++
CME	+	++	+++
NCD meeting (evaluation)	+	++	+++

VI Multisectoral action plan for the prevention and control of Noncommunicable Diseases 2014-2020

6.1 Framework

Vision	Noncommunicable diseases are effectively and equitably prevented and controlled for people in Lao PDR, and the burden of noncommunicable diseases on households and society is minimised.			
Mission	In line with the 8th five-year Health sector Development Plane 2016-2020, this strategy is guided by the National Committee commitment to support Lao PDR to achieve their highest level of health and wellbeing. Integral to this is a responsibility to ensure: 1. That interventions and resources are allocated equitably across the population 2. The cost-effective use of resources (human and financial) to achieve the greatest population health gain A learning system – involving a cycle of piloting, evaluating, modifying, implementing, monitoring and review.			
Goal	To reduce premature deaths and disability from Laos' four main noncommunicable diseases: cardiovascular disease, cancer, chronic respiratory disease and diabetes, and reduce the prevalence of four of their shared causes: tobacco, unhealthy diet, alcohol and physical inactivity.			
Objectives				
1. To reduce the population prevalence of common factors for NCDs	2. To enhance coverage and quality of cost-effective interventions for early detection, treatment and palliative care	3. To monitor trends of NCDs and their risk factors and to evaluate the progress in NCD prevention and control	4. To strengthen governance, accountability and resources for NCD prevention and control	5. NCD prevention and control through healthy cities and settings
Priority actions				
1.1. Accelerate tobacco control 1.2. Scale up alcohol control 1.3. Promote healthy diets & physical activity 1.4. Immunise against cancer causing infections	2.1 Provide integrated management of NCDs through primary care 2.2 Provide screening and early treatment for cervical cancer 2.3 Increase access to palliative care (central & local) 2.4 Increase access to rehabilitation, including assistive devices.	3.1 Establish hospital-based cancer registry 3.2 Improve data collection on NCD care 3.3 Monitor risk factors through consistent national surveys at regular intervals	4.1 Strengthen NCD coordination across MOH 4.2 Develop a national multi-sectoral action plan for NCD prevention and control, and establish a whole-of government mechanism to oversee implementation 4.3 Establish dedicated fund for NCD prevention and control from tobacco and alcohol taxation	5.1 NCD interventions by different sectors in Vientiane capital 5.2 Health promoting schools 5.3 Healthy workplace

National targets for 2020

	2013	2014	2015	2016	2017	2018	2019	2020
Percentage who engage in heavy episodic drinking (male)	67.0	66.4	65.9	65.3	64.8	64.2	63.7	63.1
Physical inactivity	10.4	10.3	10.2	10.1	10.1	10.0	9.9	9.8
Current tobacco smoking (both sexes)	33.8	33.0	32.1	31.3	30.4	29.6	28.7	27.9
Current tobacco smoking (male)	65.0	63.4	61.8	60.1	58.5	56.9	55.3	53.6
Current tobacco smoking (female)	11.5	11.2	10.9	10.6	10.4	10.1	9.8	9.5
Raised BP/Hypertension	18.3	17.9	17.5	17.2	16.8	16.4	16.0	15.6
Obesity	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
Diabetes	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8

6.2 Vision

Noncommunicable diseases are effectively and equitably prevented and controlled for people in Lao PDR, and the burden of noncommunicable diseases on households and society is minimised.

6.3 Mission

In line with the 8th five-year Health sector Development Plan 2016-2020, this strategy is guided by the National Committee commitment to support Lao PDR to achieve their highest level of health and wellbeing. Integral to this is a responsibility to ensure:

a. That interventions and resources are allocated equitably across the population
b. The cost-effective use of resources (human and financial) to achieve the greatest population health gain
c. A learning system – involving a cycle of piloting, evaluating, modifying, implementing, monitoring and review.

6.4 Goal

To reduce premature deaths and disability from Laos' four main noncommunicable diseases: cardiovascular disease, cancer, chronic respiratory disease and diabetes, and reduce the prevalence of four of their shared causes: tobacco, unhealthy diet, alcohol and physical inactivity.

6.5 Principle, Objectives and recommended actions

6.5.1 Principles

The selection of priority strategies for action is based on the following principles:

1. Priorities based on **burden of disease**
2. Step-wise approach based on **feasibility** (short-term, medium-term, long-term)
3. Prioritise **cost-effective** & **equitable** interventions
4. A **whole-of government** response is required to address NCD

6.5.2 Objectives

1. **To reduce the population prevalence of common factors for NCDs**
    1.1. Accelerate tobacco control
    1.2. Scale up alcohol control
    1.3. Promote healthy diets & physical activity
    1.4. Immunise against cancer causing infections
2. **Pursue cost-effective detection, treatment, rehabilitation and palliative care**
    2.1. Provide integrated management of NCDs through primary care
    2.2. Provide screening and early treatment for cervical cancer
    2.3. Increase access to palliative care (central & local)
    2.4. Increase access to rehabilitation, including assistive devices.
3. **Enhance NCD surveillance**
    3.1. Establish hospital-based cancer registry
    3.2. Improve data collection on NCD care
    3.3. Monitor risk factors through consistent national surveys at regular intervals
4. **Strengthen governance & resourcing for NCD**
    4.1. Strengthen NCD coordination across MOH
    4.2. Develop a national multi-sectoral action plan for NCD prevention and control, and establish a whole-of government mechanism to oversee implementation
    4.3. Establish dedicated fund for NCD prevention and control from tobacco and alcohol taxation
5. **NCD prevention and control through healthy cities and settings**
    5.1. NCD interventions by different sectors in Vientiane capital
    5.2. Health promoting schools
    5.3. Healthy workplaces

6.5.3 Recommended actions for Ministry of Health, other ministries and stakeholders

Actions under each objective are proposed for the period 2014-2020. Implementation will be considered in a phased manner with 2014-15 as the short term, 2016-2018 as the medium term and 2019-2020 falling under the long term scope. National steering committee and technical working groups will guide the implementation of these actions through appropriate ministries, departments and sectors.

Objective 1. To reduce the population prevalence of common factors for NCDs

	Short-term	Medium-term	Long-term
1.1 Accelerate tobacco control	1. Raise taxes on tobacco 2. Expand & enforce smoke-free environments 3. Finalise Tobacco Control Law 4. Enforce tobacco warnings & ban on advertising	1. Implement regular tobacco tax increases 2. Restrict sale of tobacco & regulate vendors 3. Introduce pictorial warning labels 4. Dedicate % of tobacco taxation to NCD prevention & control	1. Continue to implement regular taxation increases 2. Continue to enforce provisions of Tobacco Control Law & sub-decrees
1.2 Scale up alcohol control	1. Raise taxes on alcohol 2. Restrict alcohol advertising, promotion & sponsorship 3. Expand breath-testing to enforce drink driving laws	1. Restrict alcohol availability (e.g. minimum purchasing age, number of retail outlets) 2. Dedicate % of alcohol taxation to NCD prevention & control 3. Expand alcohol advertising restrictions	1. Offer counselling for hazardous drinking in primary care 2. Enforce restrictions on alcohol sale and advertising
1.3 Promote healthy diets & physical activity	1. Investigate salt consumption & pilot salt reduction interventions 2. Promote healthy eating & physical activity through Vientiane Healthy City 3. Promote healthy eating & physical activity in schools 4. Raise public awareness of healthy diet and physical activity through mass media	1. Implement national salt reduction action plan 2. Provide health education in low income worksites	1. Restrict marketing of food & beverages to children 2. Manage food taxes &subsidies 3. Replace trans-fat with polyunsaturated fat
1.4 Immunize against cancer causing infections	1. Improve delivery of birth dose of Hepatitis B immunization within 24 hours of birth	1. Undertake demonstration project to provide HPV vaccination to girls	1. Provide HPV vaccination to pre-adolescent girls

Objective 2. To enhance coverage and quality of cost-effective interventions for early detection, treatment, rehabilitation and palliative care

	Short-term	Medium-term	Long-term
2.1. Provide integrated management of NCDs through primary care	1. Pilot implementation of package of essential NCD interventions in primary care (PEN) 2. Maintain peer educator networks for patients with hypertension and diabetes	1. Progressively expand PEN in primary care 2. Expand specialist NCD clinics in all provincial referral hospitals 3. Expand peer educator networks, and progressively integrate into public health system	1. Provide PEN in all health facilities 2. Consider expanding range of interventions included in PEN
2.2. Enhance screening and early treatment for cervical cancer	1. Pilot initiative to deliver high coverage of VIA cervical screening & treatment to women aged 35-49 years	1. Expand pilot screening & treatment programme	1. Provide cervical cancer screening (VIA) for all women aged 35-49 (once) and treatment of pre-cancerous cervical lesions
2.3. Increase access to palliative care (central & local)	1. Establish national steering committee on palliative care 2. Pilot community-based palliative care 3. Improve drug availability for palliative medicines & opioid analgesics 4. Include pain management in measures of hospital quality	1. Develop national palliative care action plan 2. Jointly deliver palliative care for patients with HIV/AIDS &NCD	1. Expand provision of community-based palliative care 2. Include palliative care in pre-service training curricula for health professionals (including physicians, nurses, pharmacists and physiotherapists) 3. Enhance capacity for all hospitals to deliver palliative care

2.4 Increase access to rehabilitation services including assistive devices.	Develop national action plan for rehabilitation. Develop Rehabilitation care pathways for common NCD-related disabilities, including referral pathways. Develop rehabilitation and service director to disseminate amongst primary health care workers.	Expand rehabilitation centre based hubs across the country. Centrally collate service data from rehabilitation hubs on NCD-related disabilities. .	Expand rehabilitation workforce, both numbers of physiotherapists and diversity in rehabilitation workface., Train Primary health care in basic disability concepts and Community-based rehabilitation approaches

Objective 3. Monitor trends of NCDs and their risk factors and to evaluate the progress in NCD prevention and control

	Short-term	Medium-term	Long-term
3.1 Re-establish hospital-based cancer registry	Establish hospital cancer registry at Main Hospital at central level	Accurate and complete causes-of death and diagnosis data	Population-based cancer register
3.2 Improve data collection on NCD care			Integrate standalone NCD databases into HIS (diabetes clinics, peer educator database)
3.3 Monitor risk factors through consistent national surveys at regular intervals		Repeat STEPS survey 2019 (with salt consumption module) Repeat NATs survey 2015	Repeat STEPS survey 2024
3.4 Mortality	Improve coverage of mortality registration and strengthen ICD coding and certification of deaths		

6.5.4 Surveillance plan 2013-2025

A surveillance plan, with a long term vision, will help to plan national surveys and to avoid duplication. Table 6 presents the current status and proposed national surveys for adults and children in Lao PDR.

Table 6. Surveillance plan 2014-2025

	INDICATORS	BASELINE		14	15	16	17	18	19	2020	21	22	23	24	2025
		2010	2013												
MORTALITY															
Premature mortality from NCDs	Unconditional probability of dying between ages of 30 and 70 from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases			*Continuous improvement in coverage, death certification, ICD coding and reporting*											
NCD RISK FACTORS															
Harmful use of alcohol	Age-standardized prevalence of heavy episodic drinking among adolescents and adults, as appropriate, within the national context	6.99 (APC)	M: 67.0% F: 29.2%	***GSH***				***STE***	***GSH***	M: 63.1% F: 27.5% (6% RR)			***STE***	***GSH***	M: 60.3% F: 26.3% (10% RR)
Physical inactivity	Prevalence of insufficiently physically active adolescents, defined as less than 60 minutes of moderate to vigorous intensity activity daily			***S***				***PS***	***S***				***PS***	***S***	
	Age-standardized prevalence of insufficiently physically active persons aged 18+ years (defined as less than 150 minutes of moderate-intensity activity per week, or equivalent)	17.6%	10.4%							9.8% (6% RR)					9.4% (10% RR)
Salt/sodium intake	Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years														
Tobacco use	Prevalence of current tobacco use among adolescents														
	Age-standardized prevalence of current tobacco use among persons aged 18+ years	21.6% (current daily)	33.8%							27.9% (18% RR)					23.7% (30% RR)
Raised blood pressure	Age-standardized prevalence of raised blood pressure among persons aged 18+ years (defined as systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg) and mean systolic blood pressure	32.1%	18.3%							15.6% (15% RR)					13.7% (25% RR)
Diabetes	Age-standardized prevalence of raised blood glucose/diabetes among persons aged 18+ years (defined as fasting plasma glucose concentration ≥ 7.0 mmol/l (126 mg/dl) or on medication for raised blood glucose)		6.8%							No increase					No increase
Obesity	Prevalence of overweight and obesity in adolescents (defined according to the WHO growth reference for school-aged children and adolescents, overweight – one standard deviation body mass index for age and sex, and obese – two standard deviations body mass index for age and sex)														
	Age-standardized prevalence of overweight and obesity in persons aged 18+ years (defined as body mass index ≥ 25 kg/m² for overweight and body mass index ≥ 30 kg/m² for obesity)	14.8%	24.5%							No increase					No increase
NATIONAL SYSTEMS RESPONSE															
Drug therapy to prevent heart attacks and strokes	Proportion of eligible persons (defined as aged 40 years and older with a 10-year cardiovascular risk ≥30%, including those with existing cardiovascular disease) receiving drug therapy and counseling (including glycaemic control) to prevent heart attacks														

	INDICATORS	BASELINE		14	15	16	17	18	19	2020	21	22	23	24	2025
		2010	2013												
	and strokes														
Essential NCD medicines and basic technologies to treat major NCDs	Availability and affordability of quality, safe and efficacious essential noncommunicable disease medicines, including generics, and basic technologies in both public and private facilities				***S A R A***				***S A R A***					***S A R A***	

Objective 4. To strengthen governance, accountability and resources for NCD prevention and control

	Short-term	Medium-term	Long-term
4.1 Improve coordination on NCD	1. Strengthen NCD taskforce & provincial NCD network	1. Establish National Cancer Control Programme in MOH 2. Better integrate NCD with other health sector programmes – MCH, HSD, HIV, TB	
4.2 Develop MSA plan and accountability mechanism	1. Develop National MSA plan for NCD, with clear responsibilities and accountabilities for different Ministries		
4.3 Establish dedicated NCD fund from tobacco and alcohol taxation		1. Establish dedicated fund for NCD prevention & control from tobacco and alcohol taxation	
4.4 Financing	1. Work with HSD, CBHI& health insurance scheme to include more equitable access to chronic care for patients with NCD	1. Explore financing mechanisms to incentivise preventive health strategies at OD and provincial level.	
4.5 Human resource development	1. Develop and deliver training for health personnel directly involved in implementing one of the 3 priority demonstration projects: • WHO PEN • Single visit cervical screening • Palliative care	1. Deliver training for health staff directly involved in implementing one of the 3 priority demonstration projects: • WHO PEN • Single visit cervical screening • Palliative care	1. Ensure NCD prevention, control and palliative care is included in the pre-service training curricula for all health professionals
	2. Deliver training on NCDs, population health needs assessment, surveillance, and population-based prevention to provincial NCD focal points.	2. Ensure NCD questions are included in the national exit exam for health professionals	

Objective 5. NCD prevention and control through healthy cities and settings

	Short-term	Medium-term	Long-term
5.1. NCD interventions in Vientiane capital	**MoH** 1. Model of healthy village 2. Ensure on food safety 3. Safe water 4. WASH 5. Health check-up / blood test **MoES:** 1. Integrate PHC on NCDs risk factors into curriculum 2. Advocacy to students **MoPWT** 1. Urban planning 2. Public transportation, public parks, path way, path for PWD 3. Physical activity space 4. Planting tree **MoICT** 1. Advocacy & campaign, public awareness, media campaign **MoPS** 1. Awareness raising campaign on the restriction and respect to legislations esp. road traffic regulation 2. Restriction and re-enforcement of law with punishment (fine) **MoEM** 1. Increase lighting in urban and public area **MoNE** 1. Establish environmental protection regulation for urban and rural spheres 2. Wasted management 3. Recycle process of wasted 4. Awareness raising to people on environment protection		
5. 2 Health promoting schools	1. Schools to be smoke free places 2. Ban sugar sweetened beverages and unhealthy foods in schools 3. Provide healthier foods and local fruits 4. Physical activity to be a regular part of school 5. include risk and protective behaviours as part of school curriculum 6. Conduct periodic school based student health survey 7. Offer school health services	Continue and expand.	
5. 3 Healthy workplaces	1. Smoke free work places 2. Healthier foods low in salt, sugar and fat to be made available in work place cafeteria 3. Provision of physical activity infrastructure in work places and allow workers to engage in physical activity 4. Offer health check up including BMI, waist hip ratio, blood pressure and blood sugar in workplaces 5. Expand occupational health and safety programmes to include NCD prevention and control	Continue and expand.	

Recommended actions for stakeholders

Stakeholders	Objective 1 *To reduce the population prevalence of common factors for NCDs*	Objective 2 *To enhance coverage and quality of cost-effective interventions for early detection, treatment and palliative care*	Objective 3 *To monitor trends of NCDs and their risk factors and to evaluate the progress in NCD prevention and control*	Objective 4 *To strengthen governance, accountability and resources for NCD prevention and control*	Objective 5 *NCD prevention and control through healthy cities and settings*
Government-linked and private companies	Support implementation of tobacco and alcohol control legislations. Provide 100% tobacco free work places. Offer healthier dietary options to workers and promote physical activity.	Consider offering services for identifying and managing NCDs through work sites.	Generate data on their employees and contribute to national efforts for surveillance.	Support policies on NCDs and their risk factors. Implement the policies and report on the effectiveness of implementation.	Support NCD interventions in Cities and settings such as schools and workplaces.
Private health care facilities, health centres and general practitioners	Enquire about NCD risk factor and provide counseling for NCD risk reduction Offer tobacco cessation services and promote compliance to NCD management.	Provide NCD services based on cost-effective package of interventions,	To provide data on the coverage of NCD interventions.	Support policies on NCDs and their risk factors. Implement the policies and report on the effectiveness of implementation.	Provide health services for schools and work places
Higher education institutions	Include NCD prevention and control especially public health interventions in appropriate courses.	Promote healthy behaviours in students and teachers	Support human resource development in the area of epidemiology, biostatistics and operational research	Support operational research, provide evidence and support implementation of policies.	Adapt health settings approach
Civil Society Organizations	Create awareness and advocate for action against NCD risk factors. Support the implementation of tobacco and alcohol control programmes.	Initiate patient support groups for NCDs. Support community based palliative care programmes.	Help to disseminate the results of NCD surveillance to general public and advocate for action.	Act as civil society watchdog for monitoring policy implementation.	Advocate for healthy cities and setting. Bring in the force of citizens for healthier changes.

6.6 Monitoring and evaluation

Goal	Benchmarks	Method of measurement	Reporting progress
Reduce premature deaths and disability	Established reliable mortality data with ICD coding	Mortality data by cause available	Reporting 6 monthly to the NCD steering committee and yearly to national multisectoral committee. Technical working groups to meet once in 3 months to review progress and to define benchmarks.
Objective			
1. To reduce the population prevalence of common factors for NCDs	Legislations/regulations for tobacco, alcohol, salt reduction, control of marketing of foods to children		
2. To enhance coverage and quality of cost-effective interventions for early detection, treatment and palliative care	A package of services for NCDs adapted from WHO PEN are implemented in a progressive manner.	Technical working group reports on capacity of health systems to manage NCDs and	
3. To monitor trends of NCDs and their risk factors and to evaluate the progress in NCD prevention and control	Reporting of NCD targets and indicator status as per global requirements.	NCD surveillance calendar adopted and technical working group providing periodic data.	
4. To strengthen governance, accountability and resources for NCD prevention and control	National multisectoral committee and NCD steering group established with technical working groups providing guidance.	Decree establishing the committees. Reports and minutes of meeting of committees.	
5. NCD prevention and control through healthy cities and settings	Vientiane city multisectoral committee strengthened and NCD risk factor reduction implemented	Framework and guidance for healthy cities, health promoting schools and healthy workplaces available	

ANNEXES

Annex 1- Menu of policy options

Menu of policy options and cost-effective interventions for prevention and control of major noncommunicable diseases, to assist Member States in implementing, as appropriate, for national context, (without prejudice to the sovereign rights of nations to determine taxation among other policies), actions to achieve the nine voluntary global targets (*Note: This appendix needs to be updated as evidence and cost-effectiveness of interventions evolve with time)*.

The list is not exhaustive but is intended to provide information and guidance on effectiveness and cost-effectiveness of interventions based on current evidence,[4,5,6] and to act as the basis for future work to develop and expand the evidence base on policy measures and individual interventions. According to WHO estimates, policy interventions in objective 3 and individual interventions to be implemented in primary care settings in objective 4, listed in bold, are very cost-effective[7] and affordable for all countries.[1,2,3] However, they have not been assessed for specific contexts of individual countries. When selecting interventions for prevention and control of noncommunicable diseases, consideration should be given to effectiveness, cost–effectiveness, affordability, implementation capacity, feasibility, according to national circumstances, and impact on health equity of interventions, and to the need to implement a combination of population-wide policy interventions and individual interventions.

Menu of policy options	Voluntary global targets	WHO tools
Objective 1 • Raise public and political awareness, understanding and practice about prevention and control of NCDs • Integrate NCDs into the social and development agenda and poverty alleviation strategies • Strengthen international cooperation for resource mobilization, capacity-building, health workforce training and exchange of	Contribute to all 9 voluntary global targets	– WHO global status report on NCDs 2010 – WHO fact sheets – Global atlas on cardiovascular disease prevention and control

[4] Scaling up action against noncommunicable diseases: How much will it cost?" (http://whqlibdoc.who.int/publications/2011/9789241502313_eng.pdf).

[5] WHO-CHOICE (http://www.who.int/choice/en/).

[6] Disease control priorities in developing countries (http://www.dcp2.org/pubs/DCP).

[7] Very cost-effective i.e. generate an extra year of healthy life for a cost that falls below the average annual income or gross domestic product per person.

Menu of policy options	Voluntary global targets	WHO tools
information on lessons learnt and best practices • Engage and mobilize civil society and the private sector as appropriate and strengthen international cooperation to support implementation of the action plan at global, regional and national levels • Implement other policy options in objective 1 (see paragraph 21)		2011 – IARC GLOBOCAN 2008 – Existing regional and national tools – Other relevant tools on WHO web site including resolutions and documents of WHO governing bodies and regional committees
Objective 2 • Prioritize and increase, as needed, budgetary allocations for prevention and control of NCDs, without prejudice to the sovereign right of nations to determine taxation and other policies • Assess national capacity for prevention and control of NCDs • Develop and implement a national multisectoral policy and plan for the prevention and control of NCDs through multistakeholder engagement • Implement other policy options in objective 2 (see paragraph 30) to strengthen national capacity including human and institutional capacity, leadership, governance, multisectoral action and partnerships for prevention and control of noncommunicable diseases	Contribute to all 9 voluntary global targets	– UN Secretary-General's Note A/67/373 – NCD country capacity survey tool – NCCP Core Capacity Assessment tool – Existing regional and national tools – Other relevant tools on WHO web site including resolutions and documents of WHO governing bodies and regional committees

Objective 3[8]		
Tobacco use[9] • Implement WHO FCTC (see paragraph 36). Parties to the WHO FCTC are required to implement all obligations under the treaty in full; all Member States that are not Parties are encouraged to look to the WHO FCTC as the foundational instrument in global tobacco control • Reduce affordability of tobacco products by increasing tobacco excise taxes[10] • Create by law completely smoke-free environments in all indoor workplaces, public places and public transport[3] • Warn people of the dangers of tobacco and tobacco smoke through effective health warnings and mass media campaigns[3] • Ban all forms of tobacco advertising, promotion and sponsorship[3]	A 30% relative reduction in prevalence of current tobacco use in persons aged 15+ years A 25% relative reduction in overall mortality from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases	– The WHO FCTC and its guidelines – MPOWER capacity-building modules to reduce demand for tobacco, in line with the WHO FCTC – WHO reports on the global tobacco epidemic – Recommendations on the marketing of foods and non-alcoholic beverages to children (WHA63.14) – Global strategy on diet, physical activity and health, (WHA57.17)
Harmful use of alcohol • Implement the WHO global strategy to reduce harmful use of alcohol (see objective 3, paragraphs 42, 43) through actions in the recommended target areas including: • Strengthening awareness of alcohol-attributable burden; leadership and political commitment to reduce the harmful use of alcohol • Providing prevention and treatment interventions for those at risk of or affected by alcohol use disorders and associated conditions • Supporting communities in adopting effective approaches and interventions to prevent and reduce the harmful use of alcohol • Implementing effective drink–driving policies and countermeasures	At least a 10% relative reduction in the harmful use of alcohol, as appropriate, within the national context A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure according to	– Global recommendations on physical activity for health – Global strategy to reduce the harmful use of alcohol (WHA63.13) – WHO global status reports on alcohol and health 2011, 2013 – WHO guidance on dietary salt and potassium

[8] In addressing each risk factor, Member States should not rely on one single intervention, but should have a comprehensive approach to achieve desired results.

[9] Tobacco use: Each of these measures reflects one or more provisions of the WHO Framework Convention on Tobacco Control (WHO FCTC). The measures included in this Appendix are not intended to suggest a prioritization of obligations under the WHO FCTC. Rather, these measures have been proven to be feasible, affordable and cost-effective and are intended to fulfil the criteria established in the chapeau paragraph of Appendix 3 for assisting countries to meet the agreed targets as quickly as possible. The WHO FCTC includes a number of other important provisions, including supply-reduction measures and those to support multisectoral action, which are part of any comprehensive tobacco control programme.
Some interventions for management of noncommunicable diseases that are cost-effective in high-income settings, which assume a cost-effective infrastructure for diagnosis and referral and an adequate volume of cases, are not listed under objective 4, e.g. pacemaker implants for atrioventricular heart block, defibrillators in emergency vehicles, coronary revascularization procedures, and carotid endarterectomy.

[10] Very cost-effective i.e. generate an extra year of healthy life for a cost that falls below the average annual income or gross domestic product per person.

• Regulating commercial and public availability of alcohol[11] • Restricting or banning alcohol advertising and promotions[1] • Using pricing policies such as excise tax increases on alcoholic beverages[1] • Reducing the negative consequences of drinking and alcohol intoxication, including by regulating the drinking context and providing consumer information • Reducing the public health impact of illicit alcohol and informally produced alcohol by implementing efficient control and enforcement systems • Developing sustainable national monitoring and surveillance systems using indicators, definitions and data collection procedures compatible with WHO's global and regional information systems on alcohol and health	national circumstances A 25% relative reduction in overall mortality from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases	– Existing regional and national tools – Other relevant tools on WHO web site including resolutions and documents of WHO governing bodies and regional committees
Unhealthy diet and physical inactivity • Implement the WHO Global Strategy on Diet, Physical Activity and Health (see objective 3, paragraphs 40–41) • Increase consumption of fruit and vegetables • To provide more convenient, safe and health-oriented environments for physical activity • Implement recommendations on the marketing of foods and non-alcoholic beverages to children (see objective 3, paragraph 38–39) • Implement the WHO global strategy for infant and young child feeding • Reduce salt intake[12,13] • Replace trans fats with unsaturated fats[1] • Implement public awareness programmes on diet and physical activity[1] • Replace saturated fat with unsaturated fat • Manage food taxes and subsidies to promote healthy diet • Implement other policy options listed in objective 3 for addressing unhealthy diet and physical inactivity	A 10% relative reduction in prevalence of insufficient physical activity A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure according to national circumstances Halt the rise in diabetes and obesity A 25% relative reduction in overall mortality from cardiovascular diseases, cancer,	

[11] Very cost-effective i.e. generate an extra year of healthy life for a cost that falls below the average annual income or gross domestic product per person.

[12] Very cost-effective i.e. generate an extra year of healthy life for a cost that falls below the average annual income or gross domestic product per person.

[13] And adjust the iodine content of iodized salt, when relevant.

	diabetes or chronic respiratory diseases A 30% relative reduction in mean population intake of salt/sodium intake	
Objective 4 • Integrate very cost-effective noncommunicable disease interventions into the basic primary health care package with referral systems to all levels of care to advance the universal health coverage agenda • Explore viable health financing mechanisms and innovative economic tools supported by evidence • Scale up early detection and coverage, prioritizing very cost-effective high-impact interventions including cost-effective interventions to address behavioural risk factors • Train health workforce and strengthen capacity of health system particularly at primary care level to address the prevention and control of noncommunicable diseases • Improve availability of affordable basic technologies and essential medicines, including generics, required to treat major noncommunicable diseases, in both public and private facilities • Implement other cost-effective interventions and policy options in objective 4 (see paragraph 48) to strengthen and orient health systems to address noncommunicable diseases and risk factors through people-centred primary health care and universal health coverage • Develop and implement a palliative care policy using cost-effective treatment modalities, including opioids analgesics for pain relief and training health workers **Cardiovascular disease and diabetes**[14] • Drug therapy (including glycaemic control for diabetes mellitus and control of hypertension using a total risk approach) and counselling to individuals who have had a heart attack or stroke and to persons with high risk (≥ 30%) **of** a fatal and nonfatal cardiovascular event in the next 10 years[15] • Acetylsalicylic acid for acute myocardial infarction[2]	An 80% availability of the affordable basic technologies and essential medicines, including generics, required to treat major noncommunicable diseases in both public and private facilities A 25% relative reduction in overall mortality from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases At least 50% of eligible people receive drug therapy and counselling	– WHO World health reports 2010, 2011 – Prevention and control of noncommunicable diseases: Guidelines for primary health care in low-resource settings; diagnosis and management of type 2 diabetes and Management of asthma and chronic obstructive pulmonary disease 2012 – Guideline for cervical cancer: Use of cryotherapy for cervical intraepithelial neoplasia – Guideline for pharmacological treatment of persisting pain in children with medical illnesses – Scaling up NCD interventions, WHO 2011 – WHO CHOICE database – WHO Package of essential noncommunicable (PEN) disease interventions for primary health care

[14] Policy actions for prevention of major noncommunicable diseases are listed under objective 3.

[15] Very cost-effective i.e. generate an extra year of healthy life for a cost that falls below the average annual income or gross domestic product per person.

• Drug therapy (including glycaemic control for diabetes mellitus and control of hypertension using a total risk approach) and counselling to individuals who have had a heart attack or stroke, and to persons with moderate risk (≥ 20%) of a fatal and nonfatal cardiovascular event in the next 10 years • Detection, treatment and control of hypertension and diabetes, using a total risk approach • Secondary prevention of rheumatic fever and rheumatic heart disease • Acetylsalicylic acid, atenolol and thrombolytic therapy (streptokinase) for acute myocardial infarction • Treatment of congestive cardiac failure with ACE inhibitor, beta-blocker and diuretic • Cardiac rehabilitation post myocardial infarction • Anticoagulation for medium- and high-risk non-valvular atrial fibrillation and for mitral stenosis with atrial fibrillation • Low-dose acetylsalicylic acid for ischemic stroke	(including glycaemic control) to prevent heart attacks and strokes A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure, according to national circumstances	including costing tool 2011 – Prevention of cardiovascular disease. Guidelines for assessment and management of cardiovascular risk 2007 – Integrated clinical protocols for primary health care and WHO ISH cardiovascular risk prediction charts 2012 – Affordable technology: Blood pressure measurement devices for low-resource settings 2007 Indoor air quality guidelines WHO air quality guidelines for particular matter, ozone, nitrogen, dioxide and sulphur dioxide, 2005 – Cancer control: Modules on prevention and palliative care – Essential Medicines List (2011) – OneHealth tool – Enhancing nursing and midwifery capacity to contribute to the prevention, treatment and management of noncommunicable diseases – Existing regional and national tools – Other relevant tools on WHO web site including resolutions and
Diabetes[1] • Lifestyle interventions for preventing type 2 diabetes • Influenza vaccination for patients with diabetes • Preconception care among women of reproductive age including patient education and intensive glucose management • Detection of diabetic retinopathy by dilated eye examination followed by appropriate laser photocoagulation therapy to prevent blindness • Effective angiotensin-converting enzyme inhibitor drug therapy to prevent progression of renal disease • Care of acute stroke and rehabilitation in stroke units • Interventions for foot care: educational programmes, access to appropriate footwear; multidisciplinary clinics		
Cancer[16] • Prevention of liver cancer through hepatitis B immunization[17] • Prevention of cervical cancer through screening (visual inspection with acetic acid [VIA] (or Pap smear (cervical		

[16] Policy actions for prevention of major noncommunicable diseases are listed under objective 3.

[17] Very cost-effective i.e. generate an extra year of healthy life for a cost that falls below the average annual income or gross domestic product per person.

cytology), if very cost-effective),[2] linked with timely treatment of pre-cancerous lesions[2] • Vaccination against human papillomavirus, as appropriate if cost-effective and affordable, according to national programmes and policies • Population-based cervical cancer screening linked with timely treatment[18] • Population-based breast cancer and mammography screening (50–70 years) linked with timely treatment[3] • Population-based colorectal cancer screening, including through a fecal occult blood test, as appropriate, at age >50, linked with timely treatment[3] • Oral cancer screening in high-risk groups (e.g. tobacco users, betel-nut chewers) linked with timely treatment[3] **Chronic respiratory disease[1]** • Access to improved stoves and cleaner fuels to reduce indoor air pollution • Cost-effective interventions to prevent occupational lung diseases, e.g. from exposure to silica, asbestos • Treatment of asthma based on WHO guidelines • Influenza vaccination for patients with chronic obstructive pulmonary disease		documents of WHO governing bodies and regional committees
Objective 5 • Develop and implement a prioritized national research agenda for noncommunicable diseases • Prioritize budgetary allocation for research on noncommunicable disease prevention and control • Strengthen human resources and institutional capacity for research • Strengthen research capacity through cooperation with foreign and domestic research institutes • Implement other policy options in objective 5 (see paragraph 53) to promote and support national capacity for high-quality research, development and innovation	Contribute to all 9 voluntary global targets	– Prioritized research agenda for the prevention and control of noncommunicable diseases 2011 – World Health Report 2013 – Global strategy and plan of action on public health, innovation and intellectual property (WHA61.21) – Existing regional and national tools – Other relevant tools on WHO web site including resolutions and

[18] Screening is meaningful only if associated with capacity for diagnosis, referral and treatment.

		documents of WHO governing bodies and regional committees
Objective 6 • Develop national targets and indicators based on global monitoring framework and linked with a multisectoral policy and plan • Strengthen human resources and institutional capacity for surveillance and monitoring and evaluation • Establish and/or strengthen a comprehensive noncommunicable disease surveillance system, including reliable registration of deaths by cause, cancer registration, periodic data collection on risk factors, and monitoring national response • Integrate noncommunicable disease surveillance and monitoring into national health information systems • Implement other policy options in objective 6 (see paragraph 59) to monitor trends and determinants of noncommunicable diseases and evaluate progress in their prevention and control	Contribute to all 9 voluntary global targets	– Global monitoring framework – Verbal autopsy instrument – STEPwise approach to surveillance – Global Tobacco Surveillance System – Global Information System on Alcohol and Health – Global school-based student health survey, ICD-10 training tool – Service Availability and Readiness (SARA) assessment tool – IARC GLOBOCAN 2008 – Existing regional and national tools – Other relevant tools on WHO web site including resolutions and documents of WHO governing bodies and regional committees

Annex 2- Targets and indicators (monitoring framework) for NCD prevention and control

Comprehensive global monitoring framework, including 25 indicators, and a set of nine voluntary global targets for the prevention and control of noncommunicable diseases

Framework element	Target	Indicator
Mortality and morbidity		
Premature mortality from noncommunicable disease	(1) A 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases	(1) Unconditional probability of dying between ages of 30 and 70 from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases
Additional indicator		(2) Cancer incidence, by type of cancer, per 100 000 population
Risk factors		
Behavioural risk factors		
Harmful use of alcohol[19]	(2) At least 10% relative reduction in the harmful use of alcohol,[20] as appropriate, within the national context	(3) Total (recorded and unrecorded) alcohol per capita (aged 15+ years old) consumption within a calendar year in litres of pure alcohol, as appropriate, within the national context (4) Age-standardized prevalence of heavy episodic drinking among adolescents and adults, as appropriate, within the national context (5) Alcohol-related morbidity and mortality among adolescents and adults, as appropriate, within the national context
Physical inactivity	(3) A 10% relative reduction in prevalence of insufficient physical	(6) Prevalence of insufficiently physically active adolescents, defined as less than 60 minutes of moderate to vigorous intensity

[19] Countries will select indicator(s) of harmful use as appropriate to national context and in line with WHO's global strategy to reduce the harmful use of alcohol and that may include prevalence of heavy episodic drinking, total alcohol per capita consumption, and alcohol-related morbidity and mortality, among others.

[20] In WHO's global strategy to reduce the harmful use of alcohol the concept of the harmful use of alcohol encompasses the drinking that causes detrimental health and social consequences for the drinker, the people around the drinker and society at large, as well as the patterns of drinking that are associated with increased risk of adverse health outcomes.

Framework element	Target	Indicator
	activity	activity daily (7) Age-standardized prevalence of insufficiently physically active persons aged 18+ years (defined as less than 150 minutes of moderate-intensity activity per week, or equivalent)
Salt/sodium intake	(4) A 30% relative reduction in mean population intake of salt/sodium [21]	(8) Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years
Tobacco use	(5) A 30% relative reduction in prevalence of current tobacco use in persons aged 15+ years	(9) Prevalence of current tobacco use among adolescents (10) Age-standardized prevalence of current tobacco use among persons aged 18+ years
Biological risk factors		
Raised blood pressure	(6) A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure, according to national circumstances	(11) Age-standardized prevalence of raised blood pressure among persons aged 18+ years (defined as systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg) and mean systolic blood pressure
Diabetes and obesity[22]	(7) Halt the rise in diabetes and obesity	(12) Age-standardized prevalence of raised blood glucose/diabetes among persons aged 18+ years (defined as fasting plasma glucose concentration ≥ 7.0 mmol/l (126 mg/dl) or on medication for raised blood glucose) (13) Prevalence of overweight and obesity in adolescents (defined according to the WHO growth reference for school-aged children and adolescents, overweight – one standard deviation body mass index for age and sex, and obese – two standard deviations body mass index for age and sex) (14) Age-standardized prevalence of overweight and obesity in persons aged 18+ years (defined as body mass index ≥ 25

[21] WHO's recommendation is less than 5 grams of salt or 2 grams of sodium per person per day.

[22] Countries will select indicator(s) appropriate to national context.

Framework element	Target	Indicator
		kg/m² for overweight and body mass index ≥ 30 kg/m² for obesity)
Additional indicators		(15) Age-standardized mean proportion of total energy intake from saturated fatty acids in persons aged 18+ years[23] (16) Age-standardized prevalence of persons (aged 18+ years) consuming less than five total servings (400 grams) of fruit and vegetables per day (17) Age-standardized prevalence of raised total cholesterol among persons aged 18+ years (defined as total cholesterol ≥5.0 mmol/l or 190 mg/dl); and mean total cholesterol concentration
National systems response		
Drug therapy to prevent heart attacks and strokes	(8) At least 50% of eligible people receive drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes	(18) Proportion of eligible persons (defined as aged 40 years and older with a 10-year cardiovascular risk ≥30%, including those with existing cardiovascular disease) receiving drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes
Essential noncommunicable disease medicines and basic technologies to treat major noncommunicable diseases	(9) An 80% availability of the affordable basic technologies and essential medicines, including generics, required to treat major noncommunicable diseases in both public and private facilities	(19) Availability and affordability of quality, safe and efficacious essential noncommunicable disease medicines, including generics, and basic technologies in both public and private facilities
Additional indicators		(20) Access to palliative care assessed by morphine-equivalent consumption of strong opioid analgesics (excluding methadone) per death from cancer (21) Adoption of national policies that limit saturated fatty acids and virtually eliminate partially hydrogenated vegetable oils in the food supply, as appropriate, within the

[23] Individual fatty acids within the broad classification of saturated fatty acids have unique biological properties and health effects that can have relevance in developing dietary recommendations.

Framework element	Target	Indicator
		national context and national programmes (22) Availability, as appropriate, if cost-effective and affordable, of vaccines against human papillomavirus, according to national programmes and policies (23) Policies to reduce the impact on children of marketing of foods and non-alcoholic beverages high in saturated fats, trans fatty acids, free sugars, or salt (24) Vaccination coverage against hepatitis B virus monitored by number of third doses of Hep-B vaccine (HepB3) administered to infants (25) Proportion of women between the ages of 30–49 screened for cervical cancer at least once, or more often, and for lower or higher age groups according to national programmes or policies

Annex 3 – WHO PEN protocols

Package of essential noncommunicable (PEN) disease interventions for primary health care in low-resource settings

WHO PEN Protocol 1
Prevention of Heart Attacks, Strokes and Kidney Disease through Integrated Management of Diabetes and Hypertension

When could this Protocol be used?

- The protocol is for assessment and management of cardiovascular risk using hypertension, diabetes mellitus (DM) and tobacco use as entry points
- It could be used for routine management of hypertension and DM and for screening, targeting the following categories of people:
  - age > 40 years
  - smokers
  - waist circumference (≥ 90 cm in women ≥100 cm in men)
  - known hypertension
  - known DM
  - history of premature CVD in first degree relatives
  - history of DM or kidney disease in first degree relatives

Follow instructions given in Action 1 to Action 4, step by step

FIRST VISIT

Action 1. Ask about:

- Diagnosed heart disease, stroke, TIA, DM, kidney disease
- Angina, breathlessness on exertion and lying flat, numbness or weakness of limbs, loss of weight, increased thirst, polyuria, puffiness of face, swelling of feet, passing blood in urine etc
- Medicines that the patient is taking
- Current tobacco use (yes/no) (answer yes if tobacco use during the last 12 months)
- Alcohol consumption (yes/no) (if `Yes`, frequency and amount)
- Occupation (sedentary or active)
- Engaged in more than 30 minutes of physical activity at least 5 days a week (yes/no)
- Family history of premature heart disease or stroke in first degree relatives

FIRST VISIT

Action 2. Assess (physical exam and blood and urine tests):

- Waist circumference
- Measure blood pressure, look for pitting odema
- Palpate apex beat for haeving and displacement
- Auscultate heart (rhythm and murmurs)
- Auscultate lungs (bilateral basal crepitations)
- Examine abdomen (tender liver)
- In DM patients examine feet; sensations, pulses, and ulcers

- Urine ketones (in newly diagnosed DM) and protein
- Total cholesterol
- Fasting or random blood sugar (diabetes= fasting blood sugar≥7 mmol/l (126 mg/dl)) or random blood sugar ≥11.i mmol/l (200 mg/dl))

(Point of care devices can be used for testing blood sugar if laboratory facilities are not available)

Action 3. Estimate cardiovascular risk (in those not referred):

- Use the WHO/ISH risk charts relevant to the WHO subregion (Annex and CD)
- Use age, gender, smoking status, systolic blood pressure, DM (and plasma cholesterol if available)
- If age 50-59 years select age group box 50, if 60-69 years select age group box 60 etc., for people age < 40 years select age group box 40
- If cholesterol assay cannot be done use the mean cholesterol level of the population or a value of 5.2 mmol/l to calculate the cardiovascular risk)

- If the person is already on treatment, use pretreatment levels of risk factors (if information is available to assess and record the pretreatment risk. Also assess the current risk using current levels of risk factors)
- Risk charts underestimate the risk in those with family history of premature vascular disease, obesity, raised triglyceride levels

Action 4: Referral criteria for all visits:

- BP >200/>120 mm Hg (urgent referral)
- BP ≥140 or ≥ 90 mmHg in people < 40 yrs (to exclude secondary hypertension)
- Known heart disease, stroke, transient ischemic attack, DM, kidney disease (for assessment, if this has not been done)
- New chest pain or change in severity of angina or symptoms of transient ischemic attack or stroke
- Target organ damage (e.g. angina, claudication, haeving apex, cardiac failure)
- Cardiac murmurs
- Raised BP ≥140/90 (in DM above 130/80mmHg) while on treatment with 2 or 3 agents
- Any proteinuria
- Newly diagnosed DM with urine ketones 2+ or in lean persons of <30 years
- Total cholesterol >8mmol/l
- DM with poor control despite maximal metformin with or without sulphonylurea
- DM with severe infection and/or foot ulcers
- DM with recent deterioration of vision or no eye exam in 2 years
- High cardiovascular risk

If referral criteria are not present go to Action 5

Action 5. Counsel all and treat as shown below

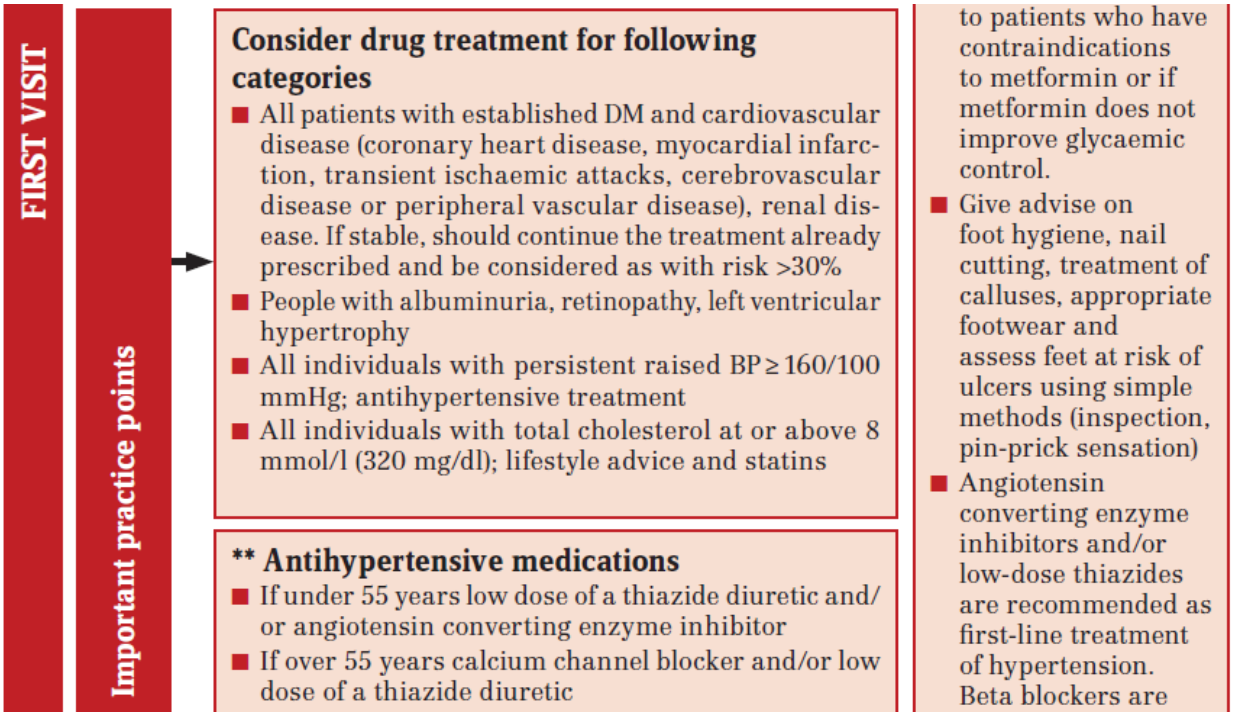
Risk < 20% →
- Counsel on diet, physical activity, smoking cessation and avoiding harmful use of alcohol
- If risk < 10% follow up in 12 months
- If risk 10 - < 20% follow up every 3 months until targets are met, then 6-9 months thereafter

Risk 20 to <30% →
- Counsel on diet, physical activity, smoking cessation and avoiding harmful use of alcohol
- Persistent BP ≥ 140/90 mm Hg consider drugs (see below ** Antihypertensive medications)
- Follow-up every 3-6 months

Risk > 30% →
- Counsel on diet, physical activity, smoking cessation and avoiding harmful use of alcohol
- Persistent BP ≥ 130/80 consider drugs (see below ** Antihypertensive medications)
- Give a statin
- Follow-up every 3 months, if there is no reduction in cardiovascular risk after six months of follow up refer to next level

Additional actions for individuals with DM:

- Give an antihypertensive for those with BP ≥ 130/80 mmHg
- Give a statin to all with type 2 DM aged ≥ 40 years
- Give Metformin for type 2 DM if not controlled by diet only (FBS>7mmol/l), and if there is no renal insufficiency, liver disease or hypoxia.
- Titrate metformin to target glucose value
- Give a sulfonylurea


FIRST VISIT
Important practice points
Consider drug treatment for following categories
All patients with established DM and cardiovascular disease (coronary heart disease, myocardial infarction, transient ischaemic attacks, cerebrovascular disease or peripheral vascular disease), renal disease. If stable, should continue the treatment already prescribed and be considered as with risk >30%
People with albuminuria, retinopathy, left ventricular hypertrophy
All individuals with persistent raised BP ≥ 160/100 mmHg; antihypertensive treatment
All individuals with total cholesterol at or above 8 mmol/l (320 mg/dl); lifestyle advice and statins
** Antihypertensive medications
If under 55 years low dose of a thiazide diuretic and/or angiotensin converting enzyme inhibitor
If over 55 years calcium channel blocker and/or low dose of a thiazide diuretic
to patients who have contraindications to metformin or if metformin does not improve glycaemic control.
Give advise on foot hygiene, nail cutting, treatment of calluses, appropriate footwear and assess feet at risk of ulcers using simple methods (inspection, pin-prick sensation)
Angiotensin converting enzyme inhibitors and/or low-dose thiazides are recommended as first-line treatment of hypertension. Beta blockers are
If intolerant to angiotensin converting enzyme inhibitor or for women in child bearing age consider a beta blocker
Thiazide diuretics and/or long-acting calcium channel blockers are more appropriate as initial treatment for certain ethnic groups. Medications for compelling indications should be prescribed, regardless of race/ethnicity
Test serum creatinine and potassium before prescribing an angiotensin converting enzyme inhibitor
not recommended for initial management but can be used if thiazides or angiotensin converting enzyme inhibitors are contraindicated.
Follow up every 3 months

FIRST VISIT

Advice to patients and family

- Avoid table salt and reduce salty foods such as pickles, salty fish, fast food, processed food, canned food and stock cubes
- Have your blood glucose level, blood pressure and urine checked regularly

Advice specific for DM

- Advise overweight patients to reduce weight by reducing their food intake.
- Advise all patients to give preference to low glycaemic-index foods (e.g.beans, lentils, oats and unsweetened fruit) as the source of carbohydrates in their diet
- If you are on any DM medication that may cause your blood glucose to go down too low carry sugar or sweets with you
- If you have DM, eyes should be screened for eye disease (diabetic retinopathy) by an ophthalmologist at the time of diagnosis and every two years thereafter, or as recommended by the ophthalmologist
- Avoid walking barefoot or without socks
- Wash feet in lukewarm water and dry well especially between the toes
- Do not cut calluses or corns, and do not use chemical agents on them
- Look at your feet every day and if you see a problem or an injury, go to your health worker

SECOND VISIT

Repeat

- Ask about: new symptoms, adherence to advise on tobacco and alcohol use, physical activity, healthy diet, medications etc
- Action 2 Assess (Physical exam)
- Action 3 Estimate cardiovascular risk
- Action 4 Refer if necessary
- Action 5 Counsel all and treat as shown in protocol

References:

Prevention and control of noncommunicable diseases; Guidelines for primary health care, World Health Organization, 2012

Scaling up action against noncommunicable diseases. How much will it cost?, World Health Organization, 2011

Prevention of cardiovascular diseases; Pocket guidelines for assessment and management of cardiovascular risk, World Health Organization, 2008

WHO PEN Protocol 2
Health Education and Counseling on Healthy Behaviours
(to be applied to ALL)

Educate your patient to

- Take regular physical activity
- Eat a "heart healthy" diet
- Stop tobacco and avoid harmful use of alcohol
- Attend regular medical follow-up

Take regular physical activity

- 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 grams) 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

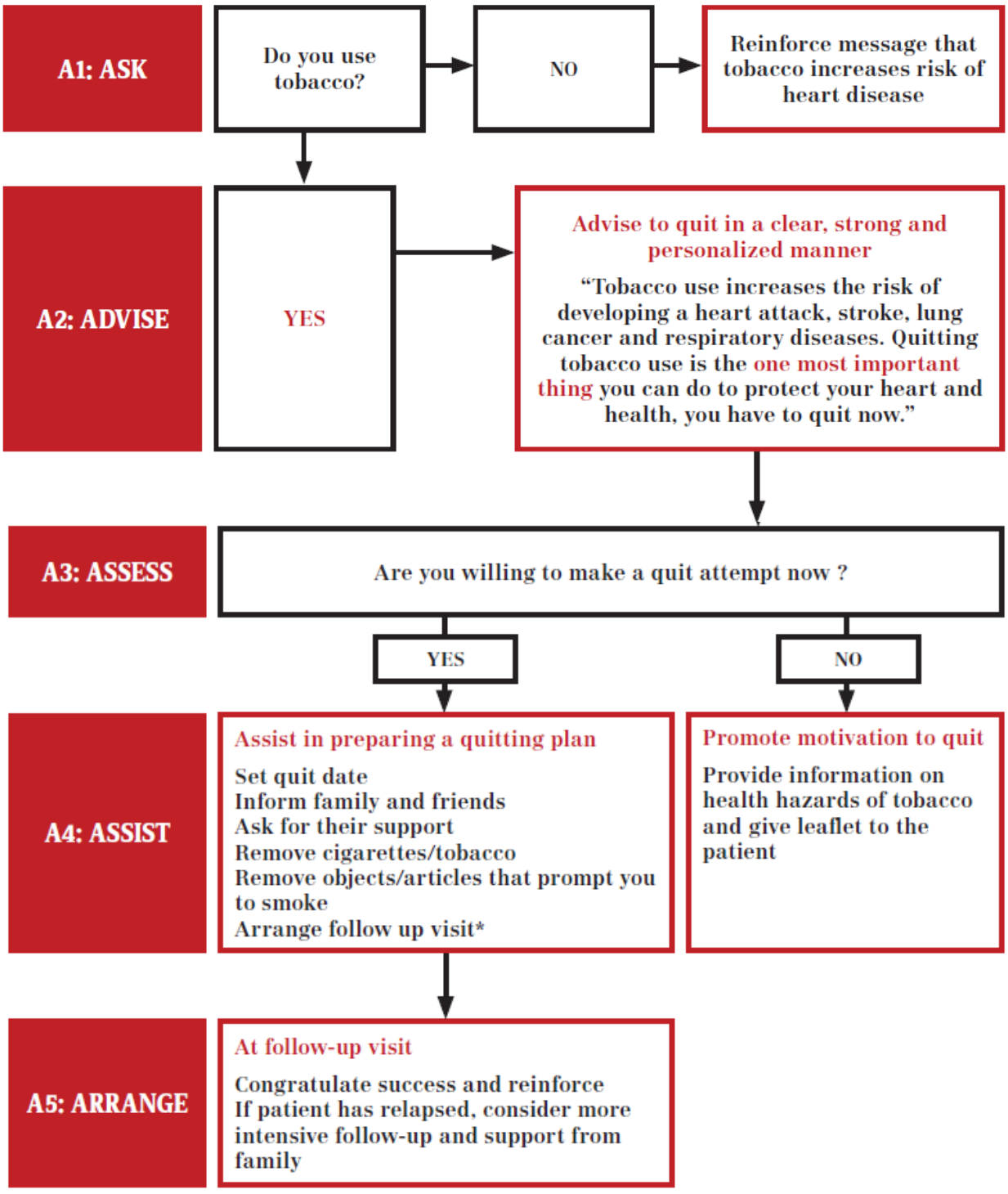
- Eat fish at least 3 times per week, preferably oily fish such as tuna, mackerel, salmon

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
  - having medical conditions made worse by alcohol
  - having difficulties in controlling drinking

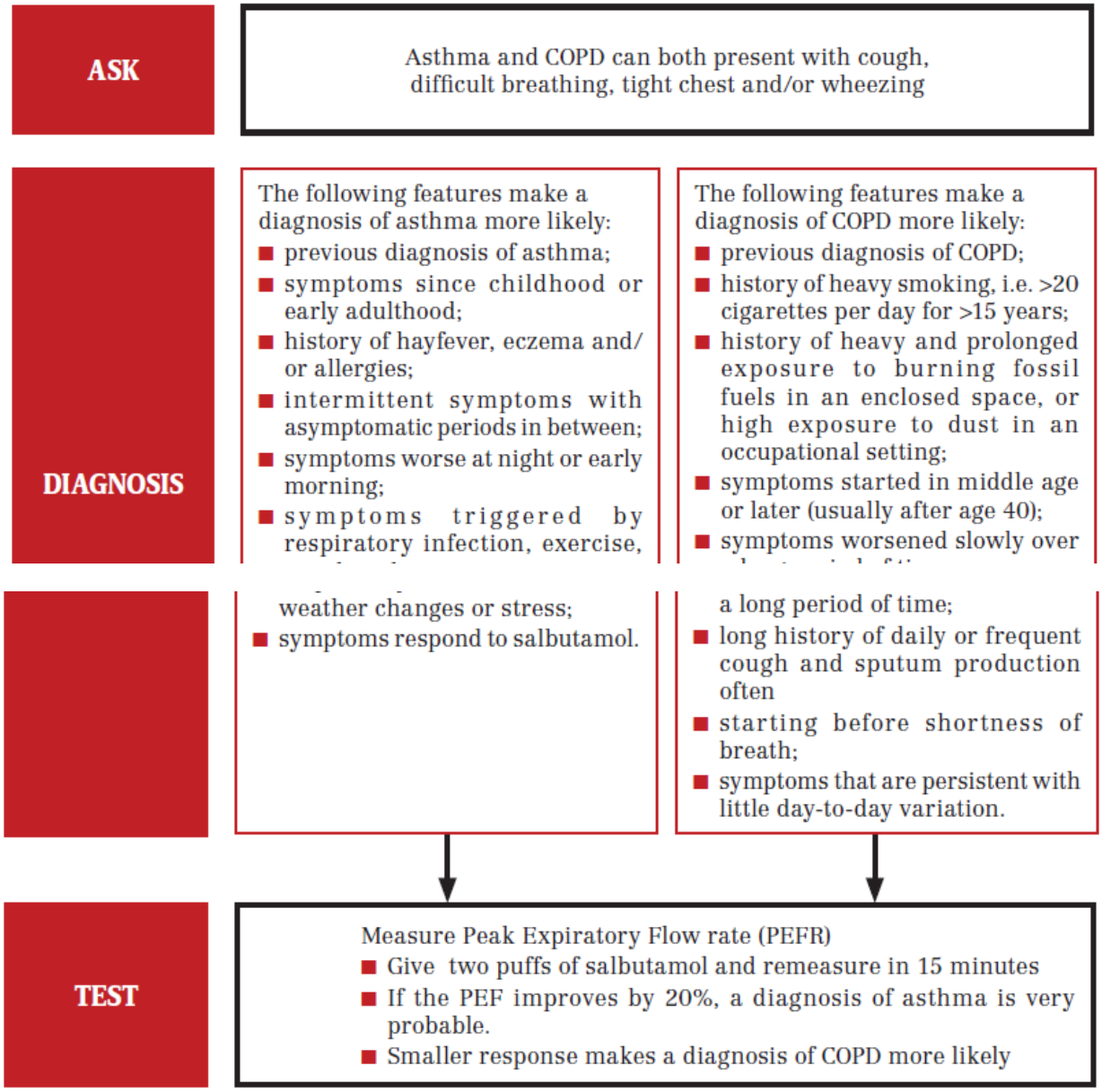
Adherence to treatment

- If the patient is prescribed a medicine/s:
  - 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 medicine/s
- Show the patient the appropriate dose
- Explain how many times a day to take the medicine
- 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 medications
  - the need to take the medicines regularly as advised even if there are no symptoms



* Ideally 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 for blood pressure monitoring.

WHO PEN Protocol 3
3.1 Management of Asthma
3.2 Management of Chronic Obstructive Pulmonary Disease (COPD)



Reference: *Guidelines for primary health care in low resource settings Management of asthma and chronic obstructive pulmonary disease.* World Health Organization, 2012

WHO PEN Protocol 3.1
Management of Asthma

ASK

Is asthma well controlled or uncontrolled?

Asthma is considered to be well controlled if the patient has:

- daytime asthma symptoms and uses a beta agonist two or fewer times per week;
- night time asthma symptoms two or fewer times per month;
- no or minimal limitation of daily activities;
- no severe exacerbation (i.e. requiring oral steroids or admission to hospital) within a month;
- a PEFR, if available, above 80% predicted.

If any of these markers are exceeded, the patient is considered to have uncontrolled asthma.

TREAT

Increase or decrease treatment according to how well asthma is controlled using a stepwise approach

Step 1. Inhaled salbutamol prn
Step 2. Inhaled salbutamol prn plus low-dose inhaled beclometasone, starting with 100 µg twice daily for adults and 100 µg once or twice daily for children
Step 3. Same as step 2, but give higher doses of inhaled beclometasone, 200 µg or 400 µg twice daily
Step 4. Add low-dose oral theophylline to Step 3 treatment (assuming long-acting beta agonists and leukotriene antagonists are not available)
Step 5. Add oral prednisolone, but in the lowest dose possible to control symptoms (nearly always less than 10mg daily)

At each step, check the patient's adherence to treatment and observe their inhaler technique.

REFER

Review asthma control every 3-6 months and more frequently when treatment has been changed or asthma is not well controlled.

Referral for specialist:

- when asthma remains poorly controlled;
- when the diagnosis of asthma is uncertain;
- when regular oral prednisolone is required to maintain control.

WHO PEN Protocol 3.1
Management of exacerbation of Asthma

ASSESS

Assess severity

Severe

- PEFR 33-50% best or predicted.
- Respiratory rate more than 25 breaths/minute (adult).
- Heart rate ≥110 beats/minute (adult).
- Inability to complete sentences in one breath.

Very severe

altered conscious level, exhaustion, arrhythmia, hypotension, cyanosis, silent chest, poor respiratory effort.

- SpO2 <92%

TREAT

First-line treatment

- prednisolone 30–40mg for five days for adults and 1mg per kg for three days for children, or longer, if necessary, until they have recovered;
- salbutamol in high doses by metered dose inhaler and spacer (e.g. four puffs every 20 minutes for one hour) or by nebulizer;
- oxygen, if available, and if oxygen saturation levels are low (below 90%).

Reassess at intervals depending on severity.

Second-line treatment to be considered if the patient is not responding to first-line treatment

- Increase frequency of dosing via an metered dose inhaler and spacer or by nebulizer, or give salbutamol by continuous nebulization at 5–10mg per hour, if appropriate nebulizer available;
- for children, nebulized ipratropium, if available, can be added to nebulized salbutamol.

ADVICE

Asthma - Advice to patients and families

Regarding prevention:

- avoid cigarette smoke and trigger factors for asthma, if known;
- avoid dusty and smoke-filled rooms;
- Avoid occupations that involve agents capable of causing occupational asthma
- reduce dust as far as possible by using damp cloths to clean furniture, sprinkling the floor with water before sweeping, cleaning blades of fans regularly and minimizing soft toys in the sleeping area;
- It may help to eliminate cockroaches from the house (when the patient is away) and shake and expose mattresses, pillows, blankets, etc. to sunlight.

Regarding treatment, ensure that the patient or parent:

- knows what to do if their asthma deteriorates;
- understands the benefit from using inhalers rather than tablets, and why adding a spacer is helpful;
- is aware that inhaled steroids take several days or even weeks to be fully effective.

WHO PEN Protocol 3.2
Management of Chronic Obstructive Pulmonary Disease

ASSESS

Assess severity

Moderate - if breathless with normal activity

Severe - if breathless at rest

Measure PEFR and oxygen saturation, if possible.

TREAT

- inhaled salbutamol, two puffs as required, up to four times daily;
- if symptoms are still troublesome, consider low-dose oral theophylline;
- if ipratropium inhalers are available, they can be used instead of, or added to, salbutamol, but they are more expensive.

ADVICE

COPD - Advice to patients and families

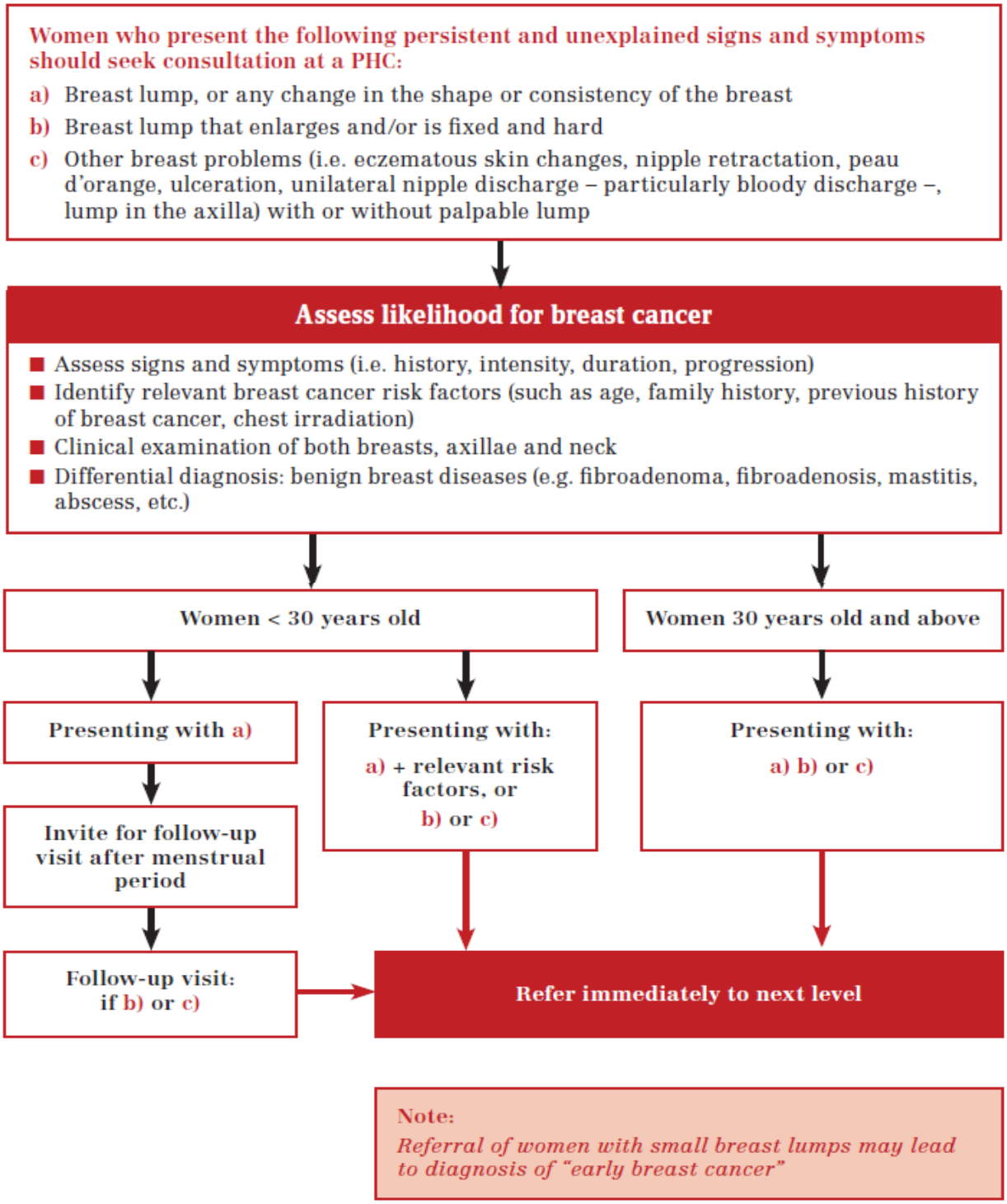
- ensure they understand that smoking and indoor air pollution are the major risk factors for COPD – therefore, patients with COPD must stop smoking and avoid dust and tobacco smoke;
- keep the area where meals are cooked well ventilated by opening windows and doors;
- cook with wood or carbon outside the house, if possible, or build an oven in the kitchen with a chimney that vents the smoke outside;
- stop working in areas with occupational dust or high air pollution – using a mask may help, but it needs to have an appropriate design and provide adequate respiratory protection.

Management of exacerbation of COPD

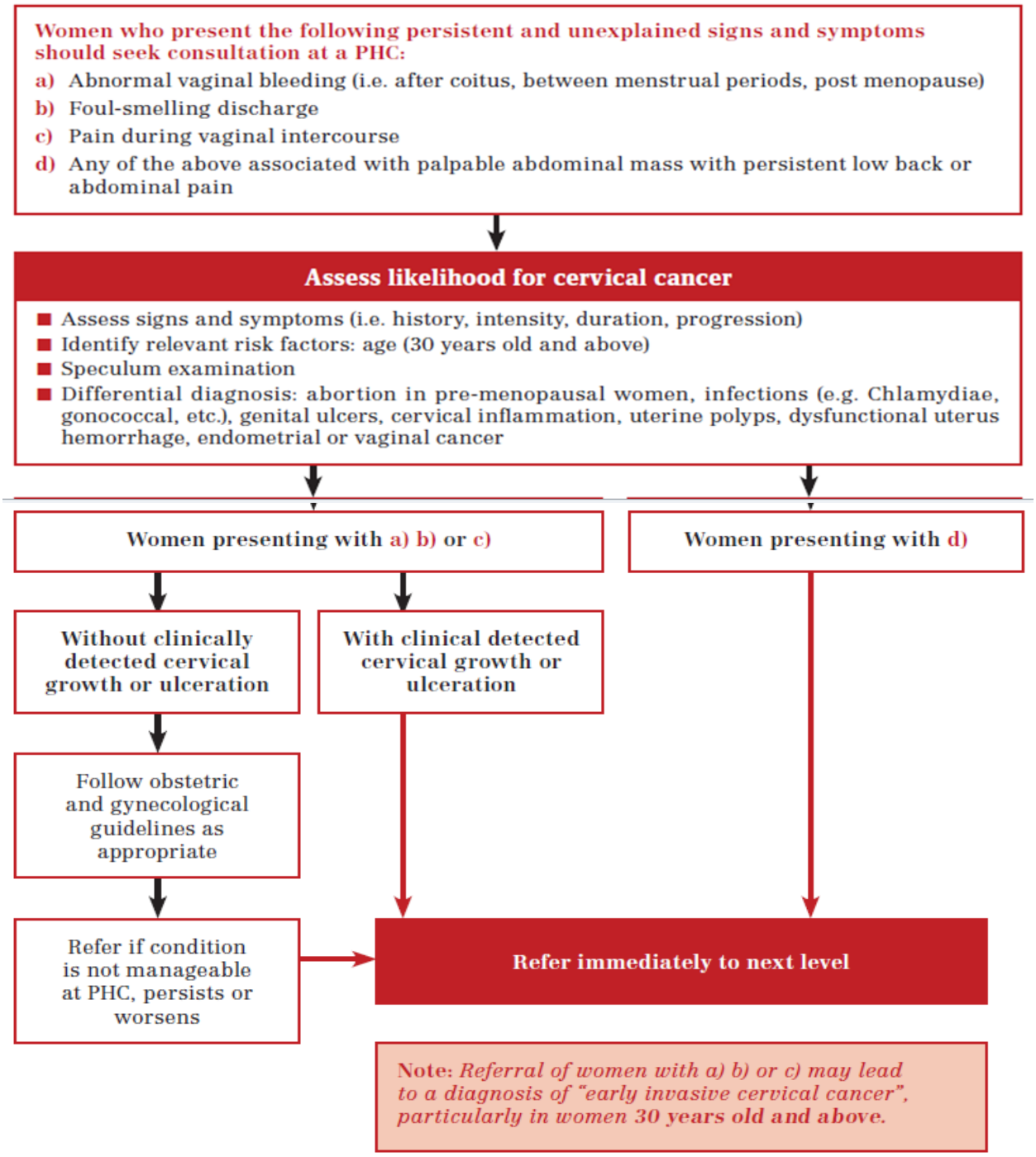
TREAT

- antibiotics should be given for all exacerbations;
- for severe exacerbations, give oral prednisolone 30–40mg for around seven days;
- give high doses of inhaled salbutamol by nebulizer or metered dose inhaler with spacer; (e.g. four puffs every 20 minutes for one hour) or by nebulizer;
- oxygen, if available, should be given by a mask that limits the concentration to 24% or 28%.

WHO PEN Protocol 4
4.1 Assessment and referral of women with suspected breast cancer at primary health care



WHO PEN Protocol 4
4.2 Assessment and referral of women with suspected cervical cancer at primary health care



Reference: *Guidelines for referral of suspected breast and cervical cancer at primary health care in low resource settings,* World Health Organization, 2013

Package of essential noncommunicable (PEN) disease interventions for primary health care in low-resource settings

Essential technologies and tools for implementing essential NCD interventions in primary care

Technologies	Tools
Thermometer Stethoscope Blood pressure measurement device* Measurement tape Weighing machine Peak flow meter** Spacers for inhalers Glucometer Blood glucose test strips Urine protein test strips Urine ketones test strips	WHO/ISH risk prediction charts Evidence based clinical protocols Flow charts with referral criteria Patient clinical record Medical information register Audit tools
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	

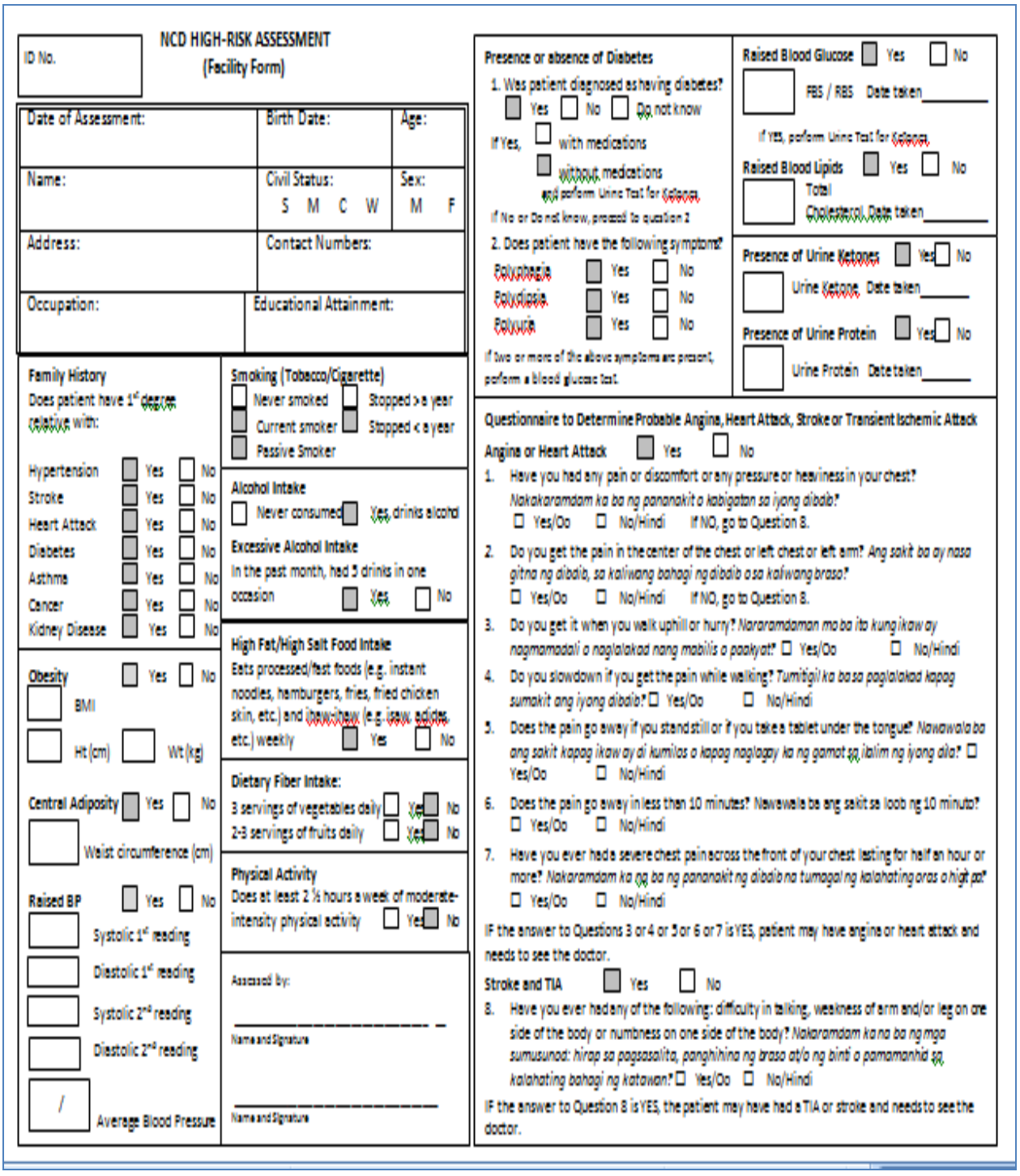
* For facilities with nonphysician health workers a validated blood pressure measurement device with digital reading is preferable for accurate measurement of blood pressure (28, 29)

** Disposable mouth pieces required. Peak flow meters with one-way flow preferable.

Reference:

Package of essential noncommunicable (PEN) disease interventions for primary health care in low-resource settings, World Health Organization, 2010.

NCD Risk Assessment Forms



ID No.

NCD HIGH-RISK ASSESSMENT
(Facility Form)

Date of Assessment:	Birth Date:	Age:
Name:	Civil Status: S M C W	Sex: M F
Address:	Contact Numbers:	
Occupation:	Educational Attainment:	

Family History
Does patient have 1st degree relative with:

- Hypertension ☐ Yes ☐ No
- Stroke ☐ Yes ☐ No
- Heart Attack ☐ Yes ☐ No
- Diabetes ☐ Yes ☐ No
- Asthma ☐ Yes ☐ No
- Cancer ☐ Yes ☐ No
- Kidney Disease ☐ Yes ☐ No

Obesity ☐ Yes ☐ No
☐ BMI
☐ Ht (cm) ☐ Wt (kg)

Central Adiposity ☐ Yes ☐ No
☐ Waist circumference (cm)

Raised BP ☐ Yes ☐ No
☐ Systolic 1st reading
☐ Diastolic 1st reading
☐ Systolic 2nd reading
☐ Diastolic 2nd reading
☐ / Average Blood Pressure

Smoking (Tobacco/Cigarette)
☐ Never smoked ☐ Stopped > a year
☐ Current smoker ☐ Stopped < a year
☐ Passive Smoker

Alcohol Intake
☐ Never consumed ☐ Yes, drinks alcohol

Excessive Alcohol Intake
In the past month, had 5 drinks in one occasion ☐ Yes ☐ No

High Fat/High Salt Food Intake
Eats processed/fast foods (e.g. instant noodles, hamburgers, fries, fried chicken skin, etc.) and chow-chow (e.g. isaw, adidas, etc.) weekly ☐ Yes ☐ No

Dietary Fiber Intake:
3 servings of vegetables daily ☐ Yes ☐ No
2-3 servings of fruits daily ☐ Yes ☐ No

Physical Activity
Does at least 2 ½ hours a week of moderate-intensity physical activity ☐ Yes ☐ No

Assessed by:

_____
Name and Signature

_____
Name and Signature

Presence or absence of Diabetes

1. Was patient diagnosed as having diabetes?
☐ Yes ☐ No ☐ Do not know
If Yes, ☐ with medications
☐ without medications
and perform Urine Test for Glucose.
If No or Do not know, proceed to question 2

2. Does patient have the following symptoms?
Polyphagia ☐ Yes ☐ No
Polydipsia ☐ Yes ☐ No
Polyuria ☐ Yes ☐ No
If two or more of the above symptoms are present, perform a blood glucose test.

Raised Blood Glucose ☐ Yes ☐ No
☐ FBS / RBS Date taken _____
If Yes, perform Urine Test for Ketones.

Raised Blood Lipids ☐ Yes ☐ No
☐ Total Cholesterol Date taken _____

Presence of Urine Ketones ☐ Yes ☐ No
☐ Urine Ketone Date taken _____

Presence of Urine Protein ☐ Yes ☐ No
☐ Urine Protein Date taken _____

Questionnaire to Determine Probable Angina, Heart Attack, Stroke or Transient Ischemic Attack

Angina or Heart Attack ☐ Yes ☐ No

1. Have you had any pain or discomfort or any pressure or heaviness in your chest? *Nakakaramdam ka ba ng pananakit o kabigatan sa iyong dibdib?* ☐ Yes/Oo ☐ No/Hindi If NO, go to Question 8.
2. Do you get the pain in the center of the chest or left chest or left arm? *Ang sakit ba ay nasa gitna ng dibdib, sa kaliwang bahagi ng dibdib o sa kaliwang braso?* ☐ Yes/Oo ☐ No/Hindi If NO, go to Question 8.
3. Do you get it when you walk uphill or hurry? *Nararamdaman mo ba ito kung ikaw ay nagmamadali o naglalakad nang mabilis o paakyat?* ☐ Yes/Oo ☐ No/Hindi
4. Do you slowdown if you get the pain while walking? *Tumitigil ka ba sa paglalakad kapag sumakit ang iyong dibdib?* ☐ Yes/Oo ☐ No/Hindi
5. Does the pain go away if you stand still or if you take a tablet under the tongue? *Nawawala ba ang sakit kapag ikaw ay ai kumilos o kapag naglagay ka ng gamot sa ilalim ng iyong dila?* ☐ Yes/Oo ☐ No/Hindi
6. Does the pain go away in less than 10 minutes? *Nawawala ba ang sakit sa loob ng 10 minuto?* ☐ Yes/Oo ☐ No/Hindi
7. Have you ever had a severe chest pain across the front of your chest lasting for half an hour or more? *Nakaramdam ka ng ba ng pananakit ng dibdib na tumagal ng kalahating oras o higit pa?* ☐ Yes/Oo ☐ No/Hindi

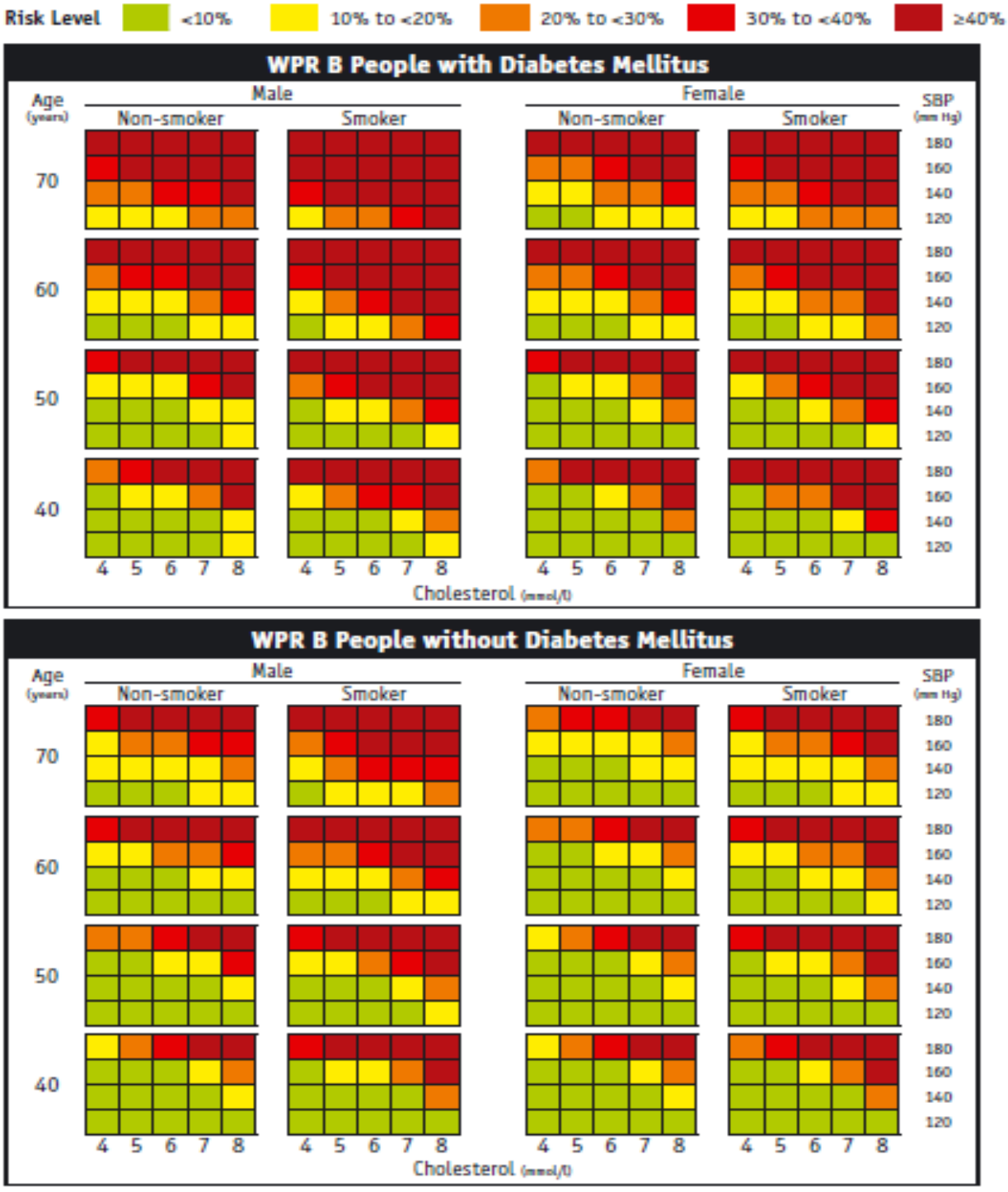
IF the answer to Questions 3 or 4 or 5 or 6 or 7 is YES, patient may have angina or heart attack and needs to see the doctor.

Stroke and TIA ☐ Yes ☐ No

8. Have you ever had any of the following: difficulty in talking, weakness of arm and/or leg on one side of the body or numbness on one side of the body? *Nakaramdam ka na ba ng mga sumusunod: hirap sa pagsasalita, panghihina ng braso at/o ng binti o pamamanhid sa kalahating bahagi ng katawan?* ☐ Yes/Oo ☐ No/Hindi

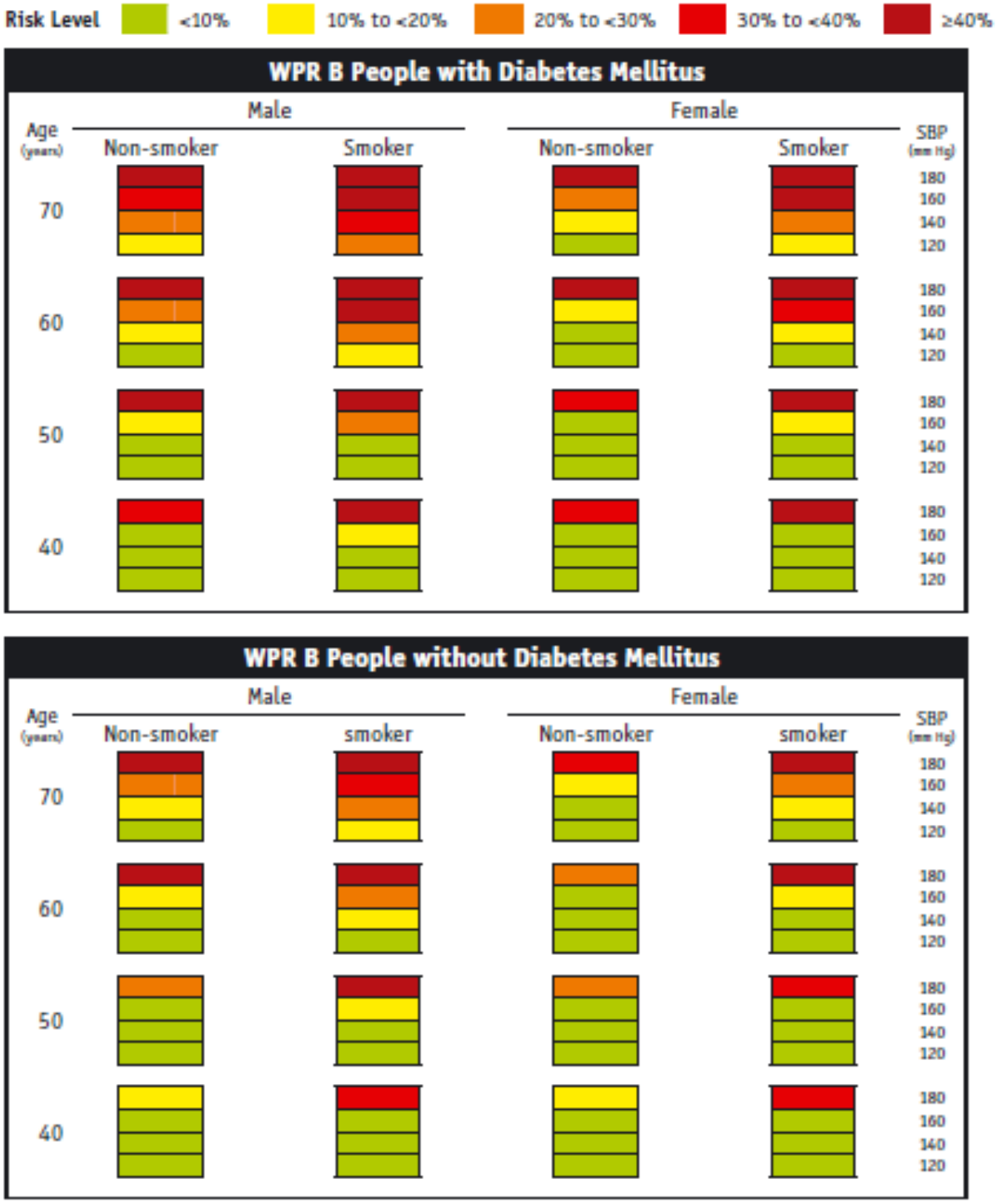
IF the answer to Question 8 is YES, the patient may have had a TIA or stroke and needs to see the doctor.

Figure 2. WHO/ISH risk prediction chart for WPR B. 10-year risk of a fatal or non-fatal cardiovascular event by gender, age, systolic blood pressure, total blood cholesterol, smoking status and presence or absence of diabetes mellitus.



This chart can only be used for countries of the WHO Region of Western Pacific, sub-region B, in settings where blood cholesterol can be measured (see Table 1)

Figure 4. WHO/ISH risk prediction chart for WPR B. 10-year risk of a fatal or non-fatal cardiovascular event by gender, age, systolic blood pressure, smoking status and presence or absence of diabetes mellitus.



This chart can only be used for countries of the WHO Region of Western Pacific, sub-region B, in settings where blood cholesterol CANNOT be measured (see Table 1).

Annex 4 – Lao Primary Health Care Center Minimum Requirements

A. Facilities/ Medical Equipment

1. Thermometer
2. Stethoscope
3. Blood pressure measurement device*
4. Measurement tape
5. Weighing machine
6. Peak flow meter**
7. Spacers for inhalers
8. Glucometer
9. Blood glucose test strips
10. Urine protein test strips
11. Urine ketones test strips

B Medications/ Lab Tests

1. Aspirin
2. Statin (simvastatin)
3. ACE inhibitor (enalapril 5 mg and 20 mg, Losartan 50 mg)
4. Beta-blocker (propranolol 40 mg, Atenolol 50 and 100 mg, cardvedilol 6.24 and 25 mg)
5. Calcium-channel blocker (amlodipine 5 and 10 mg)
6. Thiazide (hydrochlorothiazide 50 mg)
7. Metformin (500 and 850 mg)
8. a sulfonylurea (mini-diab, daonil)
9. SC insulin (long- and short-acting)

C Tools

1. WHO/ISH risk prediction charts
2. Patient's Clinical Record
3. Patient's NCD Passbook
4. PEN Protocol Action
5. Flow charts Secondary Clinic Referral Criteria
6. Medical information register
7. Audit tools

Annex 5 – WHO PEN Audit Forms

CHECKLIST ON COMPLIANCE WITH WHO PEN PROTOCOL
1 Integrated Management of Hypertension and Diabetes

Name of Health Worker : _____ Health Facility: _____

Date of Supervisory Visit: _____ Name of Supervisor: _____

ACTIONS	Write 'Yes' if complied and 'No' if did not comply with protocol				
	Client 1	Client 2	Client 3	Client 4	Client 5
1. Performed Risk Factor Assessment on patients aged 25 years old and above with no established cardiovascular disease, Cerebrovascular disease or peripheral vascular disease or have not undergone coronary revascularization or carotid endarterectomy					
2. Performed Risk Screening on patients with any of the following: • Age greater than 40 years • Diabetes • Tobacco/Cigarette Smoking • Family History of Hypertension, Stroke or Heart Attack • Central Adiposity • Family History of Diabetes or Kidney Disease • Raised Blood Pressure					
3. Referred patients with any of the following conditions to the next higher level facility: • Blood Pressure of ≥140 (systole) or ≥90 mmHg (diastole) in people below 40 years old (to exclude secondary hypertension) • Known heart disease, stroke, TIA, DM, kidney disease (for assessment as necessary) • Angina, claudication • Worsening heart failure • Raised Blood Pressure ≥140/90 (in DM above 130/80 mmHg) in spite of treatment with 2 or 3 agents • Any proteinuria • Newly diagnosed diabetes with urine ketones 2+ or in lean person of below 30 years old • DM with fasting blood glucose >14 mmol/l despite maximal metformin with or without sulphonylurea • DM with severe infection and/or foot ulcers					
4. Estimated the total cardiovascular risk of patients not referred to the next higher level facility					
5. Used the WHO/ISH Risk Prediction Charts accurately					
6. Discussed clearly and accurately with the patient his/her cardiovascular risk					

7.	Complied with the guidelines on the management of cardiovascular risk as to the following:					
	Antihypertensive drugs					
	Lipid-lowering drugs					
	Hypoglycemic Drugs					
	Anti-platelet Drugs					
	Smoking Cessation					
	Dietary Changes					
	Physical Activity					
	Weight Control					
	Alcohol Intake					
8.	Advised the patient on the return date based on guidelines					

OBSERVATION CHECKLIST ON MEASUREMENTS

Name of Health Worker: _____ Date: _____

Health Facility: _____Name of Supervisor: _____

PROCEDURES	Observed	Not observed
1. **Measuring height**		
• Made sure the height board is on level ground		
• Instructed the client to :		
✓ remove shoes, socks and hair ornaments		
✓ stand on the baseboard with feet slightly apart		
✓ keep the back of the head, shoulder blades, and buttocks to touch the vertical board		
✓ keep the legs straight and feet flat, with heels and calves touching the vertical board		
• Positioned the person's head so that a horizontal line from the ear canal to the lower border of the eye socket runs parallel to the base board		
• Read the measurement and recorded the height in centimeters to the last completed 0.1 cm		
2. Measuring weight		
• Made sure the weighing scale is placed on a flat, hard, even surface		
• Instructed the client to:		
✓ remove shoes and outer clothing (If it is socially unacceptable to undress the person, remove as much clothing as possible.)		
✓ stand still in the middle of the scale, feet slightly apart		
• Recorded the person's weight to the nearest 0.1 kg		
3. Measuring blood pressure		
• Made sure the client is relaxed and has rested for at least 5 minutes and should not have smoked or ingested caffeine within 30 minutes before BP measurement		
• Bared client's arm and applied cuff snuggly with no creases around the arm 2-3 cm above the brachial artery		
• Kept the client's arm level with his/her heart by placing it on a table or a chair arm or by supporting it with examiner's hand and kept the manometer at eye level		
• Palpated the brachial pulse slightly medial to the antecubital area and placed the earpieces of the stethoscope on his/her ears.		
• Placed the bell (or diaphragm for obese persons) of the stethoscope over the brachial pulse		
• While watching the manometer, inflated the cuff rapidly by pumping the bulb until the column or needle reaches 30 mmHg above the palpated SBP		
• Deflated the cuff slowly at a rate of 2-3 mmHg/beat		
• While the cuff was deflating, listened for pulse sounds (Korotkoff sounds)		
• Noted the appearance of the first clear tapping sound and recorded this as systolic BP		
• Noted the diastolic BP which is the disappearance of sounds and recorded this as diastolic BP		
• Fully deflated the cuff		
• Took the second blood pressure reading 2 minutes after the first and recorded this.		

• Determined the average systolic and diastolic reading and recorded the average BP		
4. Measuring waist circumference		
• Instructed the client to:		
✓ stand straight with the abdomen relaxed		
✓ lift his/her top to expose the waist area		
• Placed a non-extensible/non-stretchable tape measure around the waist (which is mid-way or between the last rib and the supra iliac) while positioned at the side and not behind/in front of the person being measured		
• Recorded the person's waist circumference to the nearest 0.1 cm		
5. Measuring blood glucose using the EasyTouch GCU Meter. (Procedure may vary depending on the device used.)		
• Explained the procedure to the client		
• Took one strip from the canister and closed the lid quickly and firmly		
• Inserted the test strip into the slot on the meter		
• Made sure the strip was compatible with the meter by comparing the numbers displayed on the meter's LCD and the code on the canister.		
• Cleaned the tip of the client's ring or middle finger with alcohol swab and allowed to dry		
• Loaded a fresh lancet in the fingerstick device and activated the barrel by sliding it		
• Held the fingerstick perpendicularly and firmly against the puncture site and released the barrel		
• Collected enough blood to cover the entire reaction zone of the test strip		
• Placed meter on a flat surface		
• Read the value displayed on the LCD after the prescribed time and recorded this.		
• Removed the used lancet from the fingerstick device and the glucose strip and discard these in a sharps container.		
6. Measuring blood cholesterol using the EasyTouch GCU Meter. (Procedures may vary depending on the device used.)		
• Explained the procedure to the client		
• Took one strip from the canister and closed the lid quickly and firmly		
• Inserted the test strip into the test strip slot on the meter		
• Made sure the strip was compatible with the meter by comparing the numbers displayed on the meter's LCD and the code on the canister.		
• Collected enough blood to cover the entire reaction zone of the test strip		
• Placed meter on a flat surface		
• Read the value displayed on the LCD after the prescribed time and recorded this.		
• Removed the used lancet from the fingerstick device and the cholesterol strip and discard these in a sharps container		
7. Measuring urine protein and ketones		
• Explained the procedure to the client		
• Made sure the specimen container was clean and dry.		
• Asked the client to fill the specimen container with fresh urine.		
• Took one urine strip from the canister and closed the lid quickly and firmly		

• Completely immersed the reagent area of the strip in the urine specimen and removed immediately		
• Ran the edge of the strip against the rim of the specimen container to remove the excess urine		
• Held the strip in a horizontal position and brought the edge of the strip into contact with an absorbent material (toilet paper)		
• Compared the reagent areas to the corresponding color blocks on the canister label.		
• Read the ketone result anytime within 40 seconds after dipping and record		
• Read the protein result anytime within 60 seconds after dipping and record		
• Discarded the specimen in the lavatory and the specimen container and used urine strip in the trash bin for hazardous wastes.		

Summary of Assessment: ……

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Recommendations: ……..

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Pictures of participants attended consultation workshops for the development of MSA plan