Ministry of Health

National Strategic Plan for the Prevention and Control of Noncommunicable Diseases

Cardiovascular Disease, Cancer, Chronic Respiratory Disease and Diabetes

2013-2020

Supported by

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List of acronyms/abbreviations

AOP	Annual Operational Plan
CBHI	Community-based health insurance
CENAT	National Center of Tuberculosis and Leprosy Control, MOH
CMDG	Cambodian Millennium Development Goals
CPA	Complementary Packages of Activity
CVD	Cardiovascular disease
DALY	Disability-Adjusted-Life-Year (equivalent to one year of healthy life)
DPM	Department of Preventive Medicine, Ministry of Health
DSF	Douleur Sans Frontiers
ETS	Environmental Tobacco Smoke
FAO	Food and Agriculture Organization of the United Nations
FCTC	Framework Convention on Tobacco Control
GAVI	Global Alliance for Vaccines and Immunization
GDP	Gross Domestic Product
HEF	Health Equity Fund
HepB	Hepatitis B
HIS	Health Information System
HPV	Human Papillomavirus
HSP2	Health Strategic Plan 2008-2015
HSSP2	Health Sector Support Programme 2
ICD	International Classification of Disease
IMC	Inter-ministerial committee
KSFH	Khmer Soviet Friendship Hospital
MCH	National Maternal and Child Health Centre, MOH
MIME	Ministry of Industry, Mines & Energy
MoEYS	Ministry of Education, Youth and Sport
MEF	Ministry of Economics and Finance
MOH	Ministry of Health
MPA	Minimum Packages of Activity
MSA	Multisectoral action
NATSC	National Adult Tobacco Survey of Cambodia
NCD	Noncommunicable disease
NCHADS	National Center for HIV/AIDs, Dermatology and STDs, MOH
NCHP	National Centre for Health Promotion, Ministry of Health
NCSSF	National Civil Servants Security Fund
NGO	Non-governmental organization
NIP	National Immunisation Programme, Ministry of Health
NSSF	National Social Security Fund (social insurance for formal sector workers)
OD	Operational District
PHD	Provincial Health Department
PPC	Phnom Penh City
PPHD	Phnom Penh Health Department
SOA	Specialised Operational Agency
STEPS	WHO STEPwise approach to Surveillance
UHS	University of Health Sciences
VHSG	Village Health Support Group
VIA	Visual inspection with acetic acid
WHO PEN	WHO Package of Essential Noncommunicable Disease Interventions for Primary Care

Foreword

This National Strategic Plan for the Prevention and Control of Noncommunicable Diseases (2013-2020) outlines the Royal Government of Cambodia's response to the growing challenge of heart disease, cancer, diabetes, and chronic respiratory disease facing Cambodia. Already, these four noncommunicable diseases cause almost half the deaths in the country, and this figure is projected to rise further as a consequence of our changing lifestyles and environments.

This strategy demonstrates that the Royal Government of Cambodia is taking the issue of noncommunicable diseases seriously, and is acting quickly to re-orient the efforts of our health system to deal with the new challenges posed by noncommunicable diseases.

Noncommunicable diseases threaten to exacerbate poverty and exert an enormous cost on the national economy. It is encouraging to remember that 80% of noncommunicable diseases can be prevented, by addressing just four risk factors: tobacco use, harmful use of alcohol, unhealthy diet and physical inactivity. This strategy outlines clear actions to address each of these risk factors, in addition to early detection and treatment to ensure those who do develop a noncommunicable disease can remain productive members of their families and communities. Together, these approaches will reduce the overall burden of noncommunicable disease in Cambodia.

The epidemic of noncommunicable disease facing Cambodia cannot be solved by the Ministry of Health alone. Many of the underlying causes of noncommunicable diseases lie outside the health sector, in the foods that are available, and the environments we live in. This strategy outlines areas where collaboration between ministries is required. The Ministry of Health urges all relevant ministries and development partners to make noncommunicable diseases a priority, and to work together to implement the actions to reduce the burden of these preventable and costly diseases in Cambodia.

Phnom Penh, 7 November 2013

For Minister of Health

Prof. ENG HUOT
SECRETARY OF STATE

1 Introduction

1.1 Noncommunicable diseases are a major threat to development in Cambodia

1.1.1 The burden of disease is high and rising

Noncommunicable diseases (NCDs), namely cardiovascular disease, cancer, chronic respiratory disease and diabetes, are a large and growing problem in Cambodia. In 2008these four diseases caused 46% of deaths in Cambodia[1], and this figure is projected to rise. Cardiovascular disease is the most common NCD in Cambodia, causing 21% of all deaths. Cancer causes 7% of deaths, respiratory diseases cause 5% and diabetes directly causes 3% of deaths in Cambodia [1]. The most common type of cancer occurring in Cambodia is cervical cancer, followed by liver, lung, breast and stomach[2]. In terms of deaths, liver and lung cancers cause the largest numbers of cancer deaths each year [2]. Importantly, these NCDs are killing Cambodians in their productive years – over half the men and over a third of women dying from NCDs are younger than 60 years[3].

1.1.2 Behavioural and environmental NCD risk factors are common across Cambodia

These four main NCDs share common risk factors: tobacco use, harmful use of alcohol, unhealthy diet, indoor air pollution and physical inactivity. In addition, three of the most common types of cancer in Cambodia are caused by preventable infections: Hepatitis B& C, Human Papilloma virus (HPV) and Helicobacter Pylori. Indoor air pollution from solid fuel use is a major contributor to chronic respiratory disease and lung cancer in women, as well as deaths from respiratory infections in children.

Exposure to all of these risk factors is widespread across Cambodia. Currently 2 million Cambodians use tobacco, with 42.5% of adult males smoking cigarettes [4]. Over half the population are exposed to environmental tobacco smoke (ETS) at home or work [5], and 47% of children live in homes with people who smoke in their presence [6]. Nine out of 10 Cambodians rely on solid fuels for cooking [7], and over 8 in 10 do not eat enough fruit and vegetables to protect them from NCDs [5]. Already 1 in 5 Cambodian adults have high cholesterol and 1 in 10 have high blood pressure, indicating a diet that is too high in saturated fats and salt [5]. With continued economic growth, the environment is increasingly promoting the development of NCD. Between 2003 and 2008, the importation of soft-drink and candy into Cambodia rose by 5041%, and 24,334% respectively [8].Cigarette prices are the lowest in the region[9] .

1.1.3 NCDs exacerbate poverty and threaten Cambodia's other development goals

NCDs have a disproportionate impact on the poor, worsen household poverty, and undermine poverty reduction efforts. Previously NCDs were considered to be the diseases of the wealthy, but this trend has been reversed – in many countries NCDs are now more common and more fatal amongst the poor[10]. In Cambodia, a number of NCD risk factors are more common in the predominantly poor rural population compared to urban dwellers – including tobacco use, solid fuel use, insufficient fruit and vegetable consumption and harmful use of alcohol [5]. Under-nutrition in-utero and during childhood increases the risk of developing cardiovascular disease and diabetes later in life. The high rates of child and maternal under nutrition, mean that many Cambodians are born with a higher risk of NCD, especially the poor.

NCDs threaten the achievement of Cambodia's millennium development goals (CMDGs), including child nutrition, education, gender equity, environmental sustainability and economic development. Households that spend money on tobacco and alcohol, spend less money on food, healthcare for women and children, and education, especially for girl children. In Cambodia, households spend on average 4% of their total budget on tobacco, and spend less on education, clothing and food [11]. Many

of Cambodia's poorest citizens are spending >10% of their income on cigarettes [4]. This undermines CMDG2 to achieve universal education, CMDG3 to promote gender equity, and CMDGs 4 & 5 to reduce maternal and infant mortality. Similarly, alcohol use results in increased domestic violence, workplace accidents and road deaths. Tobacco and betel quid use in pregnancy increases infant mortality. Solid fuel use is not just a major contributor to respiratory disease deaths in Cambodian women and children, but is also a major contributor to climate change, undermining Cambodia's CMDG7 to ensure environmental sustainability.

NCDs pose a major threat to CMDG1, to eradicate extreme poverty and hunger. NCDs are expensive for governments and are expensive for households, reducing economic development. Through health system costs and lost productivity, NCDs are estimated to cost low income countries US$25 per person per year [12]. Each 10% rise in NCDs is associated with 0.5% lower rates of annual economic growth [13]. Another analysis in 2010 found NCDs cost developing countries between 0.02-6.77% of GDP – an economic burden greater than malaria in the 1960s or HIV/AIDS in the 1990s [13]. The high cost of long-term health care and medicines for NCD, along with loss of income, pushes many Cambodian families deeper into poverty. In 2010 over 1 in 4 households had to borrow money or sell assets to pay for health care[7]. Where care is not affordable, or comes too late, premature NCD deaths rob households of their main financial providers.

1.1.4 NCDs threaten to overwhelm the Cambodian health system

Even the richest health systems in the world are facing crippling challenges in responding to the rising demand for NCD treatment. No country can afford to treat its way out of the NCD epidemic. The Cambodian health system is already swamped by more NCD patients than it is able to treat. The occupancy rate at the only cancer hospital in the country is frequently 300%. Based on the current high level of risk factors in the population, and the rapid increase in unhealthy diets and alcohol consumption, NCD deaths in Cambodia is projected to rise. Globally, NCD deaths are projected to increase by 15% between 2010 and 2020 (to 44 million deaths), with the highest numbers predicted in the Western Pacific Region (12.3 million deaths) [14]. If this trend continues unabated, Cambodia is facing a tsunami of additional NCD patients in the coming years that the health system will simply be unable to treat. To avoid this, prevention and early detection policies must be urgently implemented.

1.1.5 Most NCDs can be prevented

The good news is that 80% of NCDs are preventable and a range of highly cost-effective interventions exist[13].Even people who do develop NCDs can usually remain well, productive members of their families and society, through a mixture of primary health care and supported self-management. Most of the reduction in NCD deaths comes from reducing risk factors, with a smaller gain coming from secondary prevention/treatment. A cost-effective package consists of population wide policy measures together with individual interventions for people at high risk. The cost of implementing population-based measures (to control alcohol and tobacco, and reduce salt and fat in food) is estimated to cost less than US$0.40 per person each year in low income countries[12]. Investing in a package of individual interventions (including basic drugs for cardiovascular disease and diabetes, and early detection of cervical cancer) costs less than $1 per person per year[12]. In comparison, NCDs are estimated to cost low income countries US$25 per person per year[12].

1.2 Cambodia's progress on NCD so far

Cambodia has recognized the serious threat posed by NCD, and taken a number of steps to respond. In the second *Health Strategic Plan 2008-2015* (HSP2), NCDs have been identified as one of the four

priority areas. Cambodia's first *National Strategy for the Prevention and Control of Noncommunicable Disease (2007-2010)* is now due for revision. This *National Strategic Plan for the Prevention and Control of Noncommunicable Diseases (2013-2020)* builds upon the key achievements made so far, and outlines a path to consolidate and expand upon these gains between 2013 and 2020. A *National Strategic Plan on Education and Reduction of Tobacco Use 2011-2015*has also been developed. Cambodia ratified the WHO Framework Convention on Tobacco Control (FCTC) in 2005, and is working towards meeting the provisions of this treaty. Draft national action plans are currently being finalised for alcohol control and cancer.

Since the first *National Strategy for the Prevention and Control of Noncommunicable Disease (2007-2010)* much progress has been made. Key achievements include:

- A WHO STEPS surveillance survey was completed in 2010 – the first national representative survey on NCD risk factors in Cambodia.
- A second National Adult Tobacco Survey of Cambodia was conducted in 2011 – using the same methodology as the survey conducted in 2006, allowing trends to be compared.
- Focal points for NCD have been identified in each provincial health department, and terms of reference for the provincial NCD network have been approved by MOH.
- As one of the four taskforces established to oversee the implementation of the HSP2, a NCD taskforce has been set-up to coordinate action on NCD, involving representatives across the MOH as well as key donors and NGO providers.
- Draft national guidelines for nutrition, physical activity, and the management of diabetes and hypertension have been developed.
- Diabetes outpatient clinics were piloted in 8 provincial referral hospitals, and this approach has been evaluated.
- Peer educator networks for diabetes and hypertension have been established in 10 operational districts (ODs) and this approach has been evaluated.
- Information, education and communication materials have been developed for breast cancer, the Cambodian food pyramid and diabetes.
- A national NCD training curriculum has been developed, and delivered to health professionals working in diabetes clinics.
- Staff at 10 health centres have been trained on NCD risk factors (although in the 2012 health facility assessment none were working on NCD prevention or education).
- National training program on prevention and control of breast cancer and cervical cancer provided to health officers working at referral hospitals and health centers.
- The Minimum Package of Activities (MPA) has been revised to allow health centre staff to treat patients with mild hypertension.

Keys areas outlined in the 2007-2010 plan where progress needs further strengthening are:

- Improved function and coordination within the MOH on NCD
- Inclusion of NCDs in Annual Operational Planning at a provincial level
- Provision of NCD prevention and patient education at provincial and health centre level
- Inter-ministerial collaboration on NCD prevention and control and development of a multi-sectoral strategy

2 Vision

This strategy works towards a vision where noncommunicable diseases are effectively and equitably prevented and controlled for people in Cambodia, and the burden of noncommunicable diseases on households and society is minimised.

3 Mission

In line with the Health Strategic Plan 2008-2015, this strategy is guided by the Royal Government of Cambodia's commitment to support Cambodians 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**
3. A **learning system**– involving a cycle of piloting, evaluating, modifying, implementing, monitoring and review.

4 Goals and objectives

The ultimate goal of this strategy is to reduce premature deaths and disability from Cambodia's 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.

To meet this goal, this strategy proposes four key objectives:

1. Reduce population exposure to common risk factors
2. Pursue cost-effective detection, treatment and palliative care
3. Enhance NCD surveillance
4. Strengthen governance & resourcing for NCD

The purpose of this strategy is to outline a coherent and integrated approach to addressing the NCD challenge in Cambodia. An integrated, comprehensive national strategy seeks to achieve a more balanced, efficient and equitable use of limited resources. The scale of the problem is vast. Interventions range from very cheap (eg prevention and palliative care) to very expensive (eg certain curative treatments), and from highly effective to ineffective. This national strategic plan is needed to ensure that the best mix of actions is pursued. A plan that considers the gradual implementation of a few, affordable, cost-effective and priority interventions will have a better chance of moving into effective action. This overarching strategy seeks to avoid the creation of multiple single disease strategies, which result in the duplication of efforts and conflicting priorities.

Responsibility for NCD cannot be confined neatly into one department or one Ministry. Actions are required at multiple levels in the health sector, and in other government sectors, including education, finance, industry and trade. This national strategy seeks to outline a common agenda for action, to ensure that Cambodia mounts a strategic, coordinated and purposeful response to the NCD crisis.

5 Strategy framework

5.1 Strategic analysis

5.1.1 What are the priorities?

To make the best use of limited resources, it is vital that the government focuses its attention on the major causes of NCD death and disability. By looking at which NCDs cause the most deaths and disability, and identifying the most common causes of those conditions, clear priorities for action can be identified.

5.1.1.1 Burden of disease

Based on the burden of disease estimates, the most important NCD in Cambodia is cardiovascular disease, followed by cancer, respiratory disease and diabetes. In 2008, these four diseases caused 46% of deaths in Cambodia [1], about the same amount as all communicable diseases, maternal, perinatal and nutritional conditions combined. Table 1 shows the number of estimated deaths in 2008 from various NCDs. Cardiovascular disease caused 21% of deaths, cancers caused 7% of deaths, respiratory diseases caused 5% and diabetes directly caused 3% of all deaths in Cambodia[1]. The most common type of cancer occurring in Cambodia is cervical cancer, followed by liver, lung, breast and stomach [2]. In terms of deaths, liver and lung cancers cause the largest numbers of cancer deaths each year [2]. Importantly, these NCDs are killing Cambodians in their productive years – over half the men dying from NCD and over a third of women dying from NCDs are younger than 60 years [3].

Table 1 - Deaths from noncommunicable diseases in Cambodia, 2008

	Numbers of deaths	% of all deaths
Noncommunicable diseases	**56,635**	**46%**
Communicable, maternal, perinatal and nutritional conditions	**57,001**	**47%**
Injuries	**8,719**	**7%**
Total deaths	**122,355**	**100%**
Cardiovascular disease	**25,265**	**21%**
Cancer	**8,963**	**7%**
Liver	*1,337*	*1%*
Lung	*1,230*	*1%*
Cervix	*867*	*<1%*
Stomach	*721*	*<1%*
Breast	*448*	*<1%*
Respiratory disease	**5,855**	**5%**
COPD	*2317*	*2%*
Asthma	*1566*	*1%*
Diabetes	**3,122**	**3%**

Source: Global Burden of Disease 2008 update[1] and GLOBOCAN[2]

Whilst not major causes of death, neuropsychiatric conditions and sensory disorders are major causes of disability-adjusted life years lost (Table 2). Cambodia's response to mental health is addressed separately through the *Mental Health and Substance Abuse Strategic Plan, 2011-2015,* but the general recommendations from this strategy to organize prevention and treatment in primary care also apply to mental health. Cambodia's response to blindness is covered separately under the *National Strategic Plan for the Prevention of Blindness (2008-2015)*

Table 2 - Disability adjusted life years (DALY) lost from major NCDs in Cambodia, 2004

	Numbers of lost DALY	% of all lost DALY
All noncommunicable diseases	*1,724,000*	*34.5%*
Neuropsychiatric conditions	*451,000*	*9.0%*
Cardiovascular disease	*361,000*	*7.2%*
Cancer	*169,000*	*3.4%*
Sense organ disease	*148,000*	*3.0%*
Respiratory disease	*132,000*	*2.6%*
Diabetes	*39,000*	*0.8%*

Source: Global Burden of Disease 2004 data[14]

5.1.1.2 Risk factors & causes

All of the most important NCDs in Cambodia have preventable causes and risk factors. As can be seen from Table 3, many of the NCDs share the same risk factors. **Tobacco is linked as a causative agent for all of the priority NCDs in Cambodia**. Unhealthy diet/salt consumption, alcohol, indoor air pollution and physical in activity all contribute to multiple NCDs. Three of the main physiological risk factors: high cholesterol, hypertension and overweight/obesity, are directly related to an unhealthy diet/ salt consumption. The two most critical areas to prevent cardiovascular disease are tobacco control and salt reduction. The two most critical action areas to prevent chronic respiratory disease are tobacco control and reducing indoor air pollution from cooking. Vaccine preventable infections are the major cause of cervical, liver and stomach cancers, although tobacco, alcohol (for liver) and salt consumption (for stomach) also play a role.

Table 3 - Key causes/risk factors for Cambodia's priority NCDs

	CVD	Cancer					Respiratory Disease	Diabetes
		Cervix	Liver	Lung	Breast	Stomach		
Behavioural causes								
Salt consumption	✓					✓		
Tobacco use	✓	✓	✓	✓	✓	✓	✓	✓
Alcohol	✓		✓		✓			
Physical inactivity	✓				✓			✓
Unhealthy diet	✓					✓		✓
Indoor air pollution	✓			✓			✓	
Physiological causes								
Hypertension	✓							✓
High cholesterol	✓							✓
Hep B& C infection			✓					
HPV infection		✓						
H. Pylori						✓		
Overweight	✓				✓			✓

The nationally representative 2010 STEPS survey provides the best evidence about the prevalence of NCD risk factors in Cambodia. It found that alarmingly, many of these major risk factors/causes are widespread in the Cambodian population (see Table 4). Currently 2 million Cambodians use tobacco, with 42.5% of adult males smoking cigarettes [4]. Over half the population are exposed to environmental

tobacco smoke (ETS) at home or work [5], and 47% of children live in homes with people who smoke in their presence [6]. Nine out of 10 Cambodians rely on solid fuels for cooking [7], and over 8 in 10 do not eat enough fruit and vegetables to protect them from NCDs [5]. Already 1 in 5 Cambodian adults have high cholesterol and 1 in 10 have high blood pressure, indicating a diet that is too high in saturated fats and salt [5]. Alcohol is a large concern, with 45% of Cambodian men reporting heavy episodic drinking (more than 5 standard drinks per day) in the last 30 days. Heavy episodic drinking (the best indicator for describing a pattern of drinking associated with multiple health harms) is very high in men in both rural and urban areas.

If the government does not intervene, the prevalence of these NCD risk factors will only increase further. With continued economic growth and urbanisation, the environment in which people live, work and play actually encourages the development of NCD. Between 2003 and 2008, the importation of soft-drink and candy into Cambodia rose by 5041%, and 24,334% respectively [8]. Cigarette prices are the lowest in the region[9] . Currently, national levels of physical activity are reasonably high – Cambodians are the second most active people in the Western Pacific Region [3]. However the effects of urbanisation are already taking their toll. Urban residents are almost twice as likely to be inactive compared to rural residents.

Table 4 - Prevalence of NCD risk factors in Cambodian adults, aged 25-64 years, 2010

	Total population	Males	Females	Urban	Rural
1. Households using solid fuels for cooking	89%			48.1%	96.2%
2. Low consumption of fruit and vegetables	84.3%	83.3%	85.3%	76.5%	86.0%
3. Exposure to ETS at home or work	55.2%	55.4%	56%	50.7%	56.2%
4. Daily tobacco use	33.7%	50.2%	18.0%	20.8%	36.4%
5. Raised cholesterol	20.7%	17.0%	24.2%	32.5%	18.3%
6. Overweight or obese	15.4%	11.6%	19.0%	26.7%	13.0%
7. High blood pressure (>140/90)	11.2%	12.8%	9.6%	16.9%	10.0%
8. Low physical activity	10.6%	10.9%	10.3%	14.8%	9.7%
9. Heavy episodic alcohol drinking	19.0%	45.1%	4.6%	15.9%	19.7%
10. Raised fasting blood glucose	2.9%	2.5%	3.3%	5.6%	2.3%
11. 3 or more risk factors (out of 2,4,6,7,8)	10.2%	14.1%	6.5%	15.9%	9.1%

Sources: Cambodia Demographic & Health Survey 2010[7], Cambodia STEPS survey 2010[5]

In assessing how much these risk factors contribute to the overall number of deaths, and analysis for the Western Pacific Region (Table 5) shows that high blood pressure and tobacco are the major contributors to deaths in the region, together causing 1 in 4 deaths. Indoor air pollution and alcohol use cause 5.5% of deaths each. Unhealthy diet collectively is not included in this analysis, but is a major contributor several of the major risks factors included in this list – especially high blood pressure (excess salt consumption). Most importantly, all of these risk factors can be prevented.

Table 5 - Population attributable fractions of key risk factors, for deaths in low and middle income countries in WHO Western Pacific Region

Risk factor	Percentage of deaths attributed
High blood pressure	14.6 %
Tobacco use	10.7 % (Cambodia 13%[15])
Indoor smoke from solid fuels	5.5 %
Alcohol use	5.5 %
High blood glucose	4.5 %
Physical inactivity	4.5 % (Cambodia 3% [16])
Low fruit and vegetable intake	3.8 %
Overweight and obesity	3.3 %
High cholesterol	2.7 %

From WHO Global Risks Analysis 2009[17] and Lee at al 2012[16], and WHO Global Report on Mortality Attributable to Tobacco 2012[15]

5.1.1.3 Equity considerations

Access to treatment for NCDs underscores huge inequities in Cambodia – wealthy Cambodians are able to pay for expensive diagnostic tests and seek treatment abroad, while the poor experience no access to diagnosis, or long waiting times for the very limited services available. Out of pocket expenses and transport for diagnosis/treatment is often cost-prohibitive for the poor, especially those living outside Phnom Penh. In the absence of an affordable public transport system, NCD screening, and routine care for chronic patients must be delivered as close as possible to where people live.

Consequently, when setting priorities for diagnosis and treatment of NCDs, priority has to be given to improving access and treatment (including palliative care) in primary health care, rather than expensive treatments at a central level. Strengthening primary health care will improve health equity for the Cambodian population. Smart investments are required to make sure that limited human and financial resources do not get concentrated in intensive and costly interventions that only help a few (disproportionately those who can afford it and/or those who live in Phnom Penh), instead of more cost-effective strategies that can assist many.

Indoor air pollution disproportionately affects the poor, as well as women and children. Interventions to reduce indoor air pollution from solid fuel use are likely to be pro-equity strategies – both in terms of reducing health inequalities for the poor and for women.

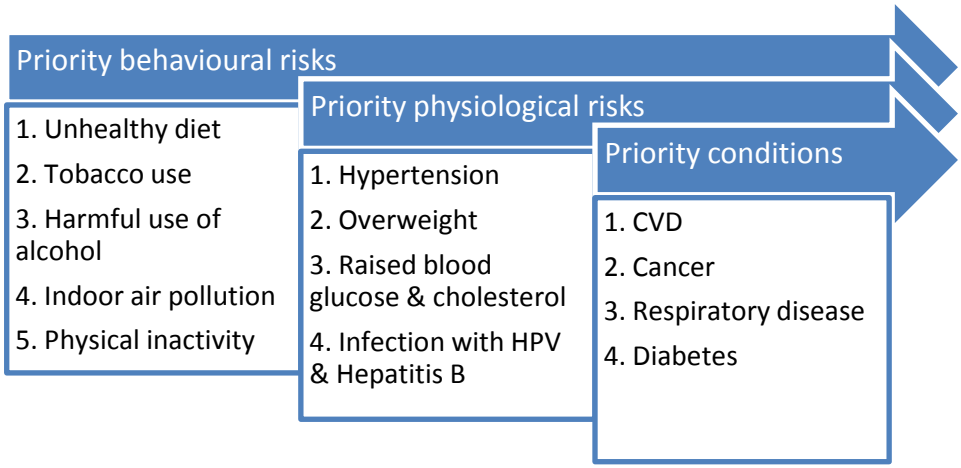
Both tobacco and alcohol disproportionately affect the poor in Cambodia, through reducing the available income to be spent on food, education and healthcare. Efforts to control these risk factors are critical to reducing health inequities for the poor. Tobacco use is disproportionately high in men, although women are equally likely to be exposed to the harms of environmental tobacco smoke. Based on current prevalence, tobacco use will kill almost 1 in 4 Cambodian men. Men are also more likely to be harmful consumers of alcohol (again affecting not just their own health but also their families', through violence and reduced household income). Men need to be a key focus of tobacco and alcohol control efforts.

5.1.1.4 Summary

Approximately 90% of Cambodia's NCD burden can be attributed to 4 main conditions: cardiovascular disease, cancer, respiratory disease and diabetes. These conditions share common risk factors, and 80%

of this NCD burden can be prevented. **Maximum impact can be made by policies which reduce the four most common shared risk factors at a population level:** unhealthy diet (especially excess consumption of salt, fat and sugar), tobacco use, harmful use of alcohol and indoor air pollution. Most of the reduction in NCD deaths comes from reducing risk factors, with a smaller gain coming from secondary prevention/treatment.

Figure 1 - Priority noncommunicable diseases and risk factors in Cambodia



5.1.2 What can be done?

For all of the priority NCDs and NCD risk factors in Cambodia, proven, cost-effective interventions exist that are feasible to implement in low income settings. The World Economic Forum and the World Health Organization [8] have outlined a package of "best-buys" for NCD prevention and control (Table 6). These interventions are not just highly cost-effective, but are also feasible to implement in low resource settings. In addition, they outline a set of "good-buys" which may be considered if additional resources are available.

Table 6 - "Best-Buy" Interventions for NCD Prevention & Control (highly cost-effective & feasible in low resource settings)

	Best buys (core recommended actions)	Good buys (expanded actions when resources permit)
Tobacco	Raising taxes on tobacco Protecting people from tobacco smoke Warning about the dangers of tobacco Enforcing bans on tobacco advertising	Offer help for smokers to quit
Harmful use of alcohol	Raising taxes on alcohol Restricting access to retailed alcohol Enforcing restrictions and bans on alcohol advertising	Breath-testing to enforce drink driving laws Offer brief advice for hazardous drinking
Unhealthy diet & physical activity	Reduce salt intake in food Replacing trans-fat with polyunsaturated fat Promoting public awareness about diet and physical activity through the mass media.	Restrict marketing of food & beverages to children Replace saturated fat with unsaturated fat Manage food taxes & subsidies Provide counselling in primary care Provide health education in worksites

		Promote healthy eating & physical activity in schools Support active transport strategies
Cardiovascular disease and diabetes	Provide counselling and treatment (including glycemic control for diabetes mellitus) for people (≥30 years), with 10-year risk of fatal or nonfatal cardiovascular events ≥ 30% Aspirin therapy for acute myocardial infarction	Provide counselling and treatment (including glycemic control for diabetes mellitus) for people (≥30 years), with 10-year risk of fatal or nonfatal cardiovascular events ≥ 20%
Cancer	Hepatitis B immunisation beginning at birth Cervical cancer screening (VIA) and treatment of pre-cancerous cervical lesions	HPV vaccination Mammographic screening (50-70 years) and treatment of breast cancer
Respiratory disease		Replace household stoves (National Efficient Cook Stove Program Treat asthma with inhaled corticosteroids & beta-2 agonists

Source: World Economic Forum and World Health Organization, 2011[12]

Prevention must form the basis of the national NCD response. No country, Cambodia included, will be able to "treat its way" out of the NCD crisis. Difficult decisions need to be made by governments, to allocate resources to strategies to address NCDs in a sustainable way. Such strategies should first and foremost include a strong emphasis on prevention measures, alongside efforts to strengthen health systems in order to provide targeted, cost-effective, and sustainable treatment for NCDs.

A multi-sectoral, whole-of-government response 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, Mines and Energy has a key role in reducing the salt and trans-fat in food. The Ministry of Education needs to be involved in promoting healthy diets in schools. The Ministry of Industry, Mines, and Energy are already taking leadership on the national efficient cook-stove programme.

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 fibre
- 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 Cambodia, where iodised salt has been promoted to prevent iodine deficiency, this may inadvertently have encouraged household to use more salt [19]. Communication on the use of iodized salt needs 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.

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 Cambodia has ratified and is working towards implementing. By far and above the most effective strategy is increasing taxation to raise the price of tobacco [13]. 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.

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 [20]. 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 [20]. Unlike tobacco, education and awareness raising campaigns about alcohol-related harms do not reduce alcohol harm, and should not be implemented[20]. A 2011 survey of 829 people in Cambodia found that over 95% of adults knew alcohol was harmful to health[21]. Educational campaigns informing people about specific regulatory/control measures can increase public and political support for these measures [20].

Indoor air pollution

Indoor air pollution from cooking with solid fuels is a major contributor to deaths from chronic respiratory disease, especially in women, as well as acute respiratory infections in children. There are also links between indoor air pollution and lung cancer and cardiovascular disease. Most Cambodians

use solid fuels for cooking, especially the poorest households. Strategies to reduce indoor air pollution include assisting households to switch to cleaner fuels, and promoting improved cook-stoves. Improved stoves are much more cost-effective than promoting cleaner fuels[22].

Already a number of pilot initiatives have been conducted to implement clean cook-stoves in Cambodia. A National Efficient Cook Stove Program has been formulated by the Ministry of Industry, Mines, and Energy (MIME) with assistance from the World Bank. The program developed a cleaner, more energy-efficient and cost-effective cooking device by boosting production of Neang Kongrey Stoves, with each stove costing just US$1.50 [23].

The next actions required to support the implementation of clean cook-stoves in Cambodia will not be repeated in this strategy, but will be detailed as part of the MSA plan for NCD (2014-2020)

Cardiovascular disease and diabetes

People at risk of premature death from cardiovascular disease and diabetes usually have multiple risk factors, which can be modified through behaviour change or medications. In Cambodia, over 8 out of 10 adults have 2 or more risk factors for NCD that can be modified through primary care, and more than 1 in 10 people adults have 3 or more modifiable NCD risk factors [5]. The most cost-effective way to deliver secondary prevention to these people, is by treating people at medium-high risk with an integrated package of interventions (advice and medications) in primary care[13]. After population-based prevention, the provision of improved access to integrated NCD management in primary care offers the second greatest potential for reversing the progression of NCD and preventing early deaths, hospitalisations and out-of-pocket expenses. A package consisting of basic NCD medications (aspirin, statin and blood pressure-lowering agents, drugs for glycemic control) and counselling (eg to support smoking cessation) is highly-cost effective and feasible to implement [13]. This approach has been successfully implemented in low income settings, including through the use of non-physician health workers.

Cancer

A large amount of cancer 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 Cambodia are prevention and palliative care. It is not feasible to cure the majority of cancers in the Cambodia in the short-medium term, but it is feasible to reduce the numbers of Cambodians 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 [13]. 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 30-49 years.

For Cambodia's 4 leading causes of cancer specifically:

Lung cancer

The only cost effective intervention for lung cancer is tobacco control. Lung cancer is particularly aggressive, and difficult to treat. Palliative care is the only feasible mainstay of treatment in Cambodia for those diagnosed with lung cancer, in the medium-long term. Indoor air pollution contributes to lung cancer in women, and can be addressed through the promotion of clean cook-stoves.

Liver cancer

The most cost-effective strategy to prevent liver cancer is the Hepatitis B vaccination. This is already provided in Cambodia as part of the infant immunisation schedule, with a monovalent Hep B vaccine for newborns given within 24 hours of birth and three doses of DPT-HepB-Hib given at 6, 10 and 14 weeks of age. Immunisation coverage of three doses of DPT-HepB-Hib is high in Cambodia, at 94% in 2011. However, the percentage of infants who receive the birth dose within 24 hours of birth was 68% in 2011. **This is a key area for improvement, to prevent the development of liver cancer**. The highest risk factor for acquiring chronic hepatitis B is being infected at birth. Hepatitis B immunoglobulin can also be given to newborns of Hepatitis B positive mothers, but this is not likely to be cost-effective or feasible in Cambodia for the foreseeable future. Alcohol control is the other priority intervention to reduce liver cancer. Hepatitis C is another important cause of liver cancer in Cambodia, although the currently available interventions to prevent and treat Hepatitis C are not cost-effective, compared to Hepatitis B prevention and reducing alcohol consumption.

Cervical cancer

Two interventions are required to prevent cervical cancer – cervical screening with treatment of early abnormalities, and the Human Papillomavirus (HPV) vaccine. With high coverage of women in the population, these two interventions together can prevent almost 100% of cervical cancers. The HPV vaccine protects against 2 strains of the HPV virus, which cause 70% of cervical cancers. In the long-term, cervical screening and treatment of early lesions will still need to be a core component of cervical cancer prevention, as 30% of cervical cancers will not be prevented by the vaccine. Cervical cancer most commonly affects women in their 40s, so once the HPV vaccine is implemented in Cambodia, reductions in cervical cancer incidence will not be expected for 20-30 years. Cervical screening and early treatment is the only feasible short to medium-term strategy to reduce deaths from cervical cancer.

Existing Cambodian cervical screening guidelines recommend screening for all women once they are sexually active, every 2 years for women once they become sexually active, until the age of 65. In practice the number of women receiving screening is thought to be low. There are currently insufficient resources to implement this guideline on a population basis. A step-wise approach needs to be taken to achieving population-wide cervical screening, focusing first on the age-group at highest risk, where the benefit of screening is highest. WHO recommends that women should be screened at least once in their lifetime, ideally between the ages of 30-49 years [24]. **The priority for Cambodia needs to be on seeking high population coverage (>80%) of women 30-49 years, at least once** [25]. Then, if resources permit, the programme can be expanded to cover women aged 25-65 years (current WHO recommendations are to screen every 3 years for 25-50 years, and every 5 years for 50-65 years). Records need to be kept on the numbers of women screened to track progress of the screening programme.

A single-visit "see and treat" approach is the most feasible solution to provide the highest number of women with cervical screening and treatment in Cambodia. Many low income countries are moving towards marked revisions in their national programmes based on "single visit" or "screen-and-treat"

approaches using VIA and Cryotherapy. This approach has been successfully used in Thailand, Indonesia, Viet Nam and the Philippines [26–28]. A single visit approach using HPV DNA testing is another simple option, more accurate than VIA, which has been trialled with great success in China [26], but currently cost prohibitive. Screening using visual inspection with acetic acid (VIA) is the most feasible screening option in Cambodia, but this needs to be associated with immediate Cryotherapy as referral systems are weak or non-existent. Cryotherapy can either be provided by a physician or trained midwife/nurse. In 2011, WHO updated the cervical cancer guidelines to review evidence for Cryotherapy policies [29]. The expert panel agreed that Cryotherapy can be provided in conjunction with VIA, without confirmation of CIN, where access to advanced diagnostic techniques are limited. The guidelines also recommend that trained non-physicians can safely and effectively perform Cryotherapy, and note that the outcomes appear to be better when Cryotherapy is performed by trained nurses or midwives rather than physicians [29].

Long-term, the most effective form of cervical cancer prevention is the HPV vaccine. Three doses of this vaccine will prevent 70% of cervical cancers, if given to girls aged 9–13 years of age (3 doses over 6 months). Mass vaccination programmes in other countries have administered this vaccine to pre-adolescent girls through schools. This vaccine is not currently available in the public system in Cambodia. It is available privately on request, at high cost. Mass HPV vaccination is cost-effective if vaccination can be given for <US$10-25/per girl, and the vaccine is currently provided to GAVI at US$5 per dose [30]. **Introducing mass HPV vaccination is feasible in Cambodia in the medium to long-term**, taking into account the schedule of other new vaccines to be introduced into the country over the next 4 years, and the need to undertake a demonstration project before GAVI will consider a full application for co-funding.

Breast cancer

Breast cancer can be prevented through alcohol control, tobacco control, promoting a healthy diet and maintaining a normal bodyweight. Self-breast examination does not reduce breast cancer deaths[31,32], but may increase women's awareness of breast cancer[33]. Clinical breast examination by a trained health professional can reduce deaths[30]. Clinical breast examination is recommended every two years for women 35-60 years[30]. This should be integrated into existing health programmes in primary health care when capacity allows, rather than established as a separate initiative.

More intensive population based screening for breast cancer (eg mammography) is not feasible at this time in Cambodia. Mammographic screening should be considered only after capacity has been expanded to diagnose, refer and treat women who have abnormalities. Currently, the cost (to patients and the government), insufficient technical capacity (eg pathologists, oncologists, breast surgeons, oncology nurses & pharmacists) and availability of treatment services (only in Phnom Penh) are key limiting factors to be addressed before any population breast screening can be considered.

5.2 Strategic objectives

5.2.1 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

5.2.2 Priority objectives

Based on Cambodia's burden of disease, evidence for cost-effectiveness, and feasibility considerations, this strategy proposes the following four priority objectives for NCD prevention and control:

1. **Reduce population exposure to common factors**
    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 and palliative care**
    2.1. Provide integrated management of NCDs through primary care
    2.2. Provide single-visit screening and early treatment for cervical cancer
    2.3. Increase access to palliative care (central & local)
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

5.2.3 Specific targets by 2020

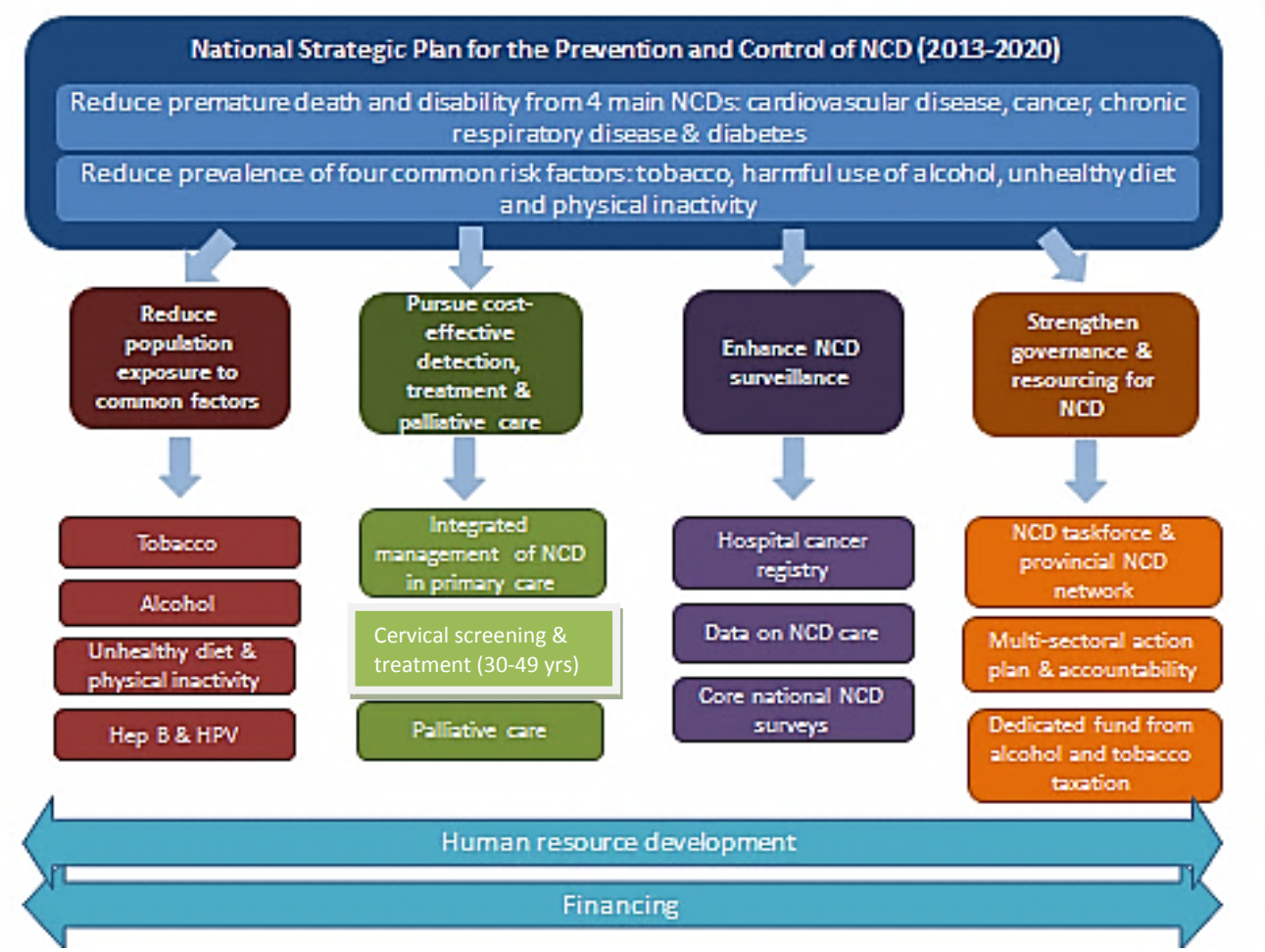
1. **Reduce population exposure to common factors**
    1.1. The prevalence of tobacco use in men will be <35% and in women will be <10%
    1.2. Less than 40% of men will have engaged in heavy episodic drinking (in last 30 days)
    1.3. >60% of girls in the target range will be fully vaccinated against HPV
2. **Pursue cost-effective detection, treatment and palliative care**
    2.1. Integrated NCD treatment and risk factor management will be available in >60%of health facilities in Cambodia
    2.2. >60% of women aged 30-49 years will have been screened for cervical cancer at least once
3. **Enhance NCD surveillance**
    3.1. A well-functioning, sustained hospital based cancer registry will be in place

3.2. The national STEPS survey (including salt consumption) will be repeated in 2015 and 2020

4. Strengthen governance & resourcing for NCD

4.1. There will be a whole-of government mechanism to oversee implementation of multi-sectoral actions to prevent and control NCDs

Figure 2 - Overview of the National Strategic Plan for NCD 2013-2020



5.3 Strategies

Financial and human resource constraints mean that it is not possible or sensible for Cambodia to implement all the cost-effective interventions simultaneously. A staged approach needs to be taken, with the highest priority activities undertaken first, followed by the next most important interventions when the core interventions have been successfully initiated. For this reason, this strategy outlines activities which will be pursued in the short-term, medium-term and long-term. A number of the long-term strategies either depend upon additional resources becoming available, or other technical/logistical constraints being overcome, before these activities are feasible.

Table 7 - Priority NCD strategies for Cambodia: in the short, medium and long term

	Short-term	Medium-term	Long-term
Strategic objective 1.	**Reduce population exposure to common factors**		
1.1 Accelerate tobacco control	Raise taxes on tobacco	Implement regular tobacco tax increases	Continue to implement regular taxation increases
	Expand & enforce smoke-free environments	Restrict sale of tobacco& regulate vendors	Continue to enforce provisions of Tobacco Control Law & sub-decrees
	Finalise Tobacco Control Law	Introduce pictorial warning labels	
	Enforce tobacco warnings & ban on advertising	Dedicate % of tobacco taxation to NCD prevention & control	
1.2 Scale up alcohol control	Raise taxes on alcohol	Restrict alcohol availability (eg minimum purchasing age, number of retail outlets)	Offer counselling for hazardous drinking in primary care
	Restrict alcohol advertising, promotion & sponsorship	Dedicate % of alcohol taxation to NCD prevention & control	Enforce restrictions on alcohol sale and advertising
	Expand breath-testing to enforce drink driving laws	Expand alcohol advertising restrictions	
	Establish IMC on alcohol	Develop Alcohol Control Law	
1.3 Promote healthy diets & physical activity	Investigate salt consumption & pilot salt reduction interventions	Implement national salt reduction action plan	Restrict marketing of food & beverages to children
	Promote healthy eating & physical activity through Phnom Penh Healthy City	Replace trans-fat with polyunsaturated fat	Manage food taxes & subsidies
	Promote healthy eating & physical activity in schools		Replace saturated fat with unsaturated fat
	Raise public awareness of healthy diet and physical activity through mass media		Provide health education in low income worksites
1.4 Immunise against cancer causing infections	Improve delivery of birth dose of Hepatitis B immunisation within 24 hours of birth	Undertake demonstration project to provide HPV vaccination to girls	Provide HPV vaccination to pre-adolescent girls
Strategic objective 2.	**Pursue cost-effective detection, treatment and palliative care**		
2.1. Provide integrated management of NCDs through primary care	Pilot package of essential NCD interventions in primary care (PEN)	Progressively expand PEN in primary care	Provide PEN in all health facilities
	Maintain peer educator networks for patients with hypertension and diabetes	Expand specialist NCD clinics in all provincial referral hospitals	Consider expanding range of interventions included in PEN
		Expand peer educator networks, and progressively	

		integrate into public health system	
2.2. Enhance screening and early treatment for cervical cancer	Pilot initiative to deliver high coverage of single-visit VIA cervical screening & treatment to women aged 30-49 years	Expand pilot screening & treatment programme	Provide cervical cancer screening (VIA) for all women aged 30-49 (once) and treatment of pre-cancerous cervical lesions
2.3. Increase access to palliative care (central & local)	Establish National Technical Working Group on palliative care	Develop national palliative care action plan	Expand provision of community-based palliative care
	Pilot community-based palliative care	Jointly deliver palliative care for patients with HIV/AIDS & NCD	Include palliative care in pre-service training curricula for health professionals (including physicians, nurses, pharmacists and physiotherapists)
	Improve drug availability for palliative medicines & opioid analgesics		Enhance capacity for all hospitals to deliver palliative care
	Include pain management in measures of hospital quality		
Strategic objective 3. Enhance NCD surveillance			
3.1 Establish hospital-based cancer registry	Establish hospital cancer registry at public Hospital	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 2015 (with salt consumption module) Repeat NATSC survey 2016	Repeat STEPS survey 2020
Strategic objective 4. Strengthen governance & resourcing for NCD			
4.1 Improve coordination on NCD	Strengthen NCD taskforce & provincial NCD network	Establish National Cancer Control Programme in MOH	
	PHDs to prepare AOP for NCD	Better integrate NCD with other health sector programmes – MCH, HIV, TB	
4.2 Develop MSA plan and accountability mechanism	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		Establish dedicated fund for NCD prevention & control from tobacco and alcohol taxation	

Cross-cutting themes			
Financing	Work with HEFs, CBHI &NSSF to include more equitable access to chronic care for patients with NCD	Explore financing mechanisms to incentivise preventive health strategies at OD and provincial level.	
Human resource development	Develop and deliver training for health staff directly involved in implementing one of the 3 priority demonstration projects: ➢ WHO PEN ➢ Single visit cervical screening ➢ Palliative care	Deliver training for health staff directly involved in implementing one of the 3 priority demonstration projects: ➢ WHO PEN ➢ Single visit cervical screening ➢ Palliative care	Ensure NCD prevention, control and palliative care is included in the pre-service training curricula for all health professionals
	Deliver training on NCDs, population health needs assessment, surveillance, and population-based prevention to provincial NCD focal points.	Ensure NCD questions are included in the national exit exam for health professionals	

5.3.1 Reduce population exposure to common factors

5.3.1.1 Accelerate tobacco control

Since the development of the National Strategic Plan on Tobacco Education and Reduction 2011-2015, much progress has been made on tobacco control in Cambodia. The highest priority strategic area to address is increasing tobacco taxation. The Draft Tobacco Control Law currently before government contains provisions for expanding smoke-free environment, as well as restricting the sale of tobacco. The Draft Law also specifies that tobacco taxation must be increased, and that the government shall allocate a percentage of tobacco taxation for health promotion activities.

Short term actions

- Finalise Tobacco Control Law (2013)
- Tobacco Taxation Working Group to finalise plan to implement regular increases on tobacco taxation (2013)
- Expand implementation and enforcement of smoke-free environments sub-decree (2013-)
- Enforce sub-decree on advertising ban and health warnings (2013-)
- Implement tobacco taxation increases (2014-)

Medium term actions

- Continue to implement regular/annual tobacco taxation increases
- Introduce sub-decree require pictorial warning labels
- Dedicate percentage of tobacco taxation income to financing NCD prevention and control
- Implement provisions of Draft Tobacco Law:
  - Restricting sale of tobacco and regulating vendors
  - Expanding smoke-free environments to cover all enclosed public spaces (including transportation and private workplaces/businesses)

Long-term actions

- Continue to implement regular/annual tobacco taxation increases
- Continue enforcing provisions of Tobacco Law and tobacco control sub-decrees, on restriction of sale, smoke-free environments, importation and advertising bans

5.3.1.2 Scale up alcohol control

There is an urgent need to scale-up alcohol control measures in Cambodia. The government's strategies will focus on the most proven, cost-effective strategies: raising alcohol taxes, restricting alcohol advertising and restricting the availability of alcohol [20]. Unlike tobacco, education and awareness raising campaigns about alcohol-related harms do not reduce alcohol harm [20]. Public education campaigns will only be used in the context of promoting alcohol legislation or sub-decrees.

Short term actions

- Ministry of Health to work with Ministry of Finance to increase alcohol taxation (2013-14)
- Establish Inter-Ministerial Committee on Alcohol Control (2013)
- Develop sub-decree to restrict alcohol advertising, promotion and sponsorship (2013)
- Enforce drink driving law (2013-)
- Enforce sub-decree on alcohol advertising restrictions (including raising public awareness of the ban) (2014-)

Medium term actions

- Develop sub-decree to restrict alcohol availability (including a minimum purchasing age, and restrictions over number/nature of retail outlets) (2015)
- Develop Alcohol Control Law (2015)
- Percentage of annual alcohol taxation to be allocated to fund for NCD prevention & control (2015-)
- Expand ban on alcohol advertising (2016)

Long-term actions

- Enforce restrictions on alcohol availability (including raising public awareness of the ban)
- Offer counselling for hazardous drinking in primary care

5.3.1.3 Promote healthy diets and physical activity

The priority focus in Cambodia must be on reducing salt consumption, as this is a leading contributor to hypertension, cardiovascular disease and stomach cancer. A salt consumption survey is an important first step, in determining a baseline figure for salt consumption, and clarifying the main dietary sources of salt for people in Cambodia Healthy eating and physical activity will be promoted through the health promoting schools programme.

Substitution of trans-fat for polyunsaturated fat will be pursued as part of the national MSA plan for NCD. Consuming the right amount of vegetables and fruits is not possible for many Cambodians because of insufficient income and lack of availability. To promote the consumption of fruit and vegetables, especially for the poor, the government will work across ministries and with the private sector, to consider subsidies, and incentives that make a healthy diet more affordable and more available. Multi-sectoral actions on diets will need to occur at the national level (between Ministry of Agriculture, Ministry of Finance, Ministry of Industry, Mines and Energy) but also at a local level. Initiatives to promote physical activity should focus on the urban centres, where the prevalence of physical inactivity is higher. The Healthy Cities initiative being implemented in Phnom Penh will provide

a platform for strengthening action to promote healthy eating and physical activity in Phnom Penh city – through Health Promoting Schools and other initiatives. Promoting physical activity and healthy diets through the mass media is also effective, and is one of the WHO "best buys".

Short term actions

- Undertake small scale salt consumption survey (2012-2013)
- Undertake national salt consumption survey (2013-14)
- Pilot salt consumption reduction interventions (2014)
- Strengthen Healthy Cities initiative in Phnom Penh City:
  - Launch Health Promoting Schools programme in 3 schools in Phnom Penh City(2013)
  - Explore other strategies to make healthy diets the norm in Phnom Penh (eg working with food vendors) (2014-)
- Begin multi-sectoral discussions on how to reduce salt content of foods (2014-)
- Raise public awareness of healthy diet and physical activity through mass media campaigns (2013-2014)
  Begin multi-sectoral discussions on substituting trans-fats for polyunsaturated fats (2014-)

Medium term actions

- Develop national salt reduction action plan (2015)
- Implement national salt reduction action plan (2015-)
- Include NCD dietary risks in next version of National Nutrition Strategy (2016-)
- Expand Health Promoting Schools

Long-term actions

- Restrict marketing of unhealthy food and beverages to children
- Continue implementation of national salt reduction action plan (2016-2020)
- Explore financing mechanisms (subsidies and taxation) to make healthy diets more affordable & available
- Promote healthy diets and physical activity through workplaces(especially large low income workplaces, eg garment factories)

5.3.1.4 Immunise against cancer causing infections

Hepatitis B vaccination is already implemented in Cambodia as part of the infant immunisation schedule. A key area for improvement is to increase the percentage of infants who receive the birth dose within 24 hours of birth (68% in 2011).This aligns with broader strategies already underway as outlined in the HSP2 to improve the percentage of births attended by a trained attendant. A key short-term focus for the health sector will be to ensure that all babies born in a health facility receive their birth dose within 24 hours.

Introducing mass HPV vaccination is feasible in Cambodia in the medium to long-term, taking into account the schedule of other new vaccines to be introduced into the country over the next 4 years, and the need to undertake a demonstration project before GAVI will consider a full application for co-funding.

Short term actions

- Develop national guideline on HPV vaccination, to inform national mass vaccination programme (2014)
- Ensure all babies born in a healthy facility receive Hep B vaccination within 24 hours (2013-)

- Ensure all provincial hospitals have a cold chain on maternity wards
- Educate staff on immunisation guidelines

Medium term actions

- Plan for a demonstration project for GAVI application, for HPV vaccination of girls in schools (2015)
- Conduct demonstration project for HPV vaccination of girls in schools (2015)

Long-term actions

- With results of demonstration project, make full application to GAVI for co-funding of HPV vaccination (2016)
- Implement national HPV vaccination to girls (2017-ongoing)

5.3.2 Pursue cost-effective detection, treatment and palliative care

5.3.2.1 Provide integrated management of NCDs through primary care

The strategic focus for NCD health care needs to be on strengthening the capacity to provide integrated NCD care and secondary prevention at a primary care level. The WHO Package of Essential NCD Interventions is a package of basic primary care interventions for NCD risk factor education, screening and treatment. This package will be piloted in health facilities from 2013, with a view to progressively introducing it to all health facilities.

Basic screening and treatment for NCD are included in the Minimum Packages of Activity (MPA) at health centers and in the Complementary Packages of Activity (CPA) at referral hospitals. Out-patient care is provided at both referral hospitals and health centers, but the coverage of service delivery is very limited. Currently, 8 out of 84 referral hospitals have diabetes clinics, with an active patient population of 4600. Approximately 350,000 adults have been screened and 9,500 patients with hypertension and diabetes currently receive management through Peer Educator Networks (established by an NGO). These peer educator networks add a highly cost-effective complementary human resource to carry out essential tasks that would not otherwise be carried out. These networks achieve equivalent management of diabetes as the specialist clinics in provincial referral hospitals, and at a fraction of the cost (US$0.50 per adult per year). The low level of cost is a consequence of involving trained peer educators, as paid volunteers, in some of the organisational aspects of health service delivery, such as the revolving drug fund, medical consultations, diagnostic support services, self-management training and follow-up of registered patients. In the short to medium term, these networks represent a crucial strategy to deliver NCD management to Cambodians, to complement professional health service delivery, in particular where professionally trained human resources are not available or as long as other important building blocks for a chronic care delivery system in primary care are lacking or not ready.

There needs to be strategic use of both the specialist clinics and the peer educator networks to deliver the maximum coverage of NCD care possible with limited resources. Priorities for action for the peer educator networks must be to expand the networks, and to work at integrating them into the public health system at the primary care level. The specialist diabetes clinics may serve an important adjunct role to manage complicated cases – these clinics should be broadened in scope to cover complicated diabetes, hypertension, and chronic respiratory disease, and expanded to all provincial referral hospitals and restricted to those patients who are unstable or require complicated management. The goal must

be to manage the majority of patients with NCD in the community (through primary care and peer educator networks).

Short term actions

- Pilot WHO Package of Noncommunicable Disease Interventions (PEN) for primary health care in 3 health facilities in SOA areas (2013)
- Evaluate pilot and modify PEN as appropriate (2013)
- Expand PEN further to high capacity health centres in SOA areas (2014)
    - Training to health workers
    - Drug provision & supply assurance
    - Health data collection
- Deliver peer educator networks for patients with hypertension and diabetes in 13 ODs (2013)
    - Work towards the progressive integration of these networks into the routine operation of the public health system
- Develop an operational manual/supervision guideline for OD managers to manage the peer educator networks (2013)
- Expand capacity to manage referred cases of NCD from health centres, by expanding numbers of provincial referral hospitals with specialist NCD clinics (2013-14)

Medium term actions

- Progressively expand PEN to all health facilities (with consistent drug supply funded by MOH budget) (2015-)
- Expand peer educator networks to other ODs (2015-)
- Further expand numbers of provincial referral hospitals with specialist NCD clinics (2015-2017)

Long-term actions

- Review the PEN package, and explore feasibility of expanding the range of interventions/treatments offered (if resources permit)
- Provide PEN and peer educator networks in all ODs

5.3.2.2 Enhance screening and early treatment for cervical cancer

The priority for Cambodia needs to be on seeking high population coverage of cervical screening and treatment for women 30-49 years, at least once. Only then, if resources permit, should the programme be expanded to cover women aged 25-65 years (current WHO recommendations would be screening every 3 years for 25-50 years, and every 5 years for 50-65 years). Records need to be kept on the numbers of women screened to track progress of the screening programme.

Screening is of no value unless it is accompanied by timely treatment of abnormal findings. Until now, referral and diagnostic capacity constraints have prevented population based cervical screening in Cambodia. New WHO guidelines advising that Cryotherapy conducted by trained nurses or midwives results in good outcomes [29], and many countries are moving towards a “single-visit” approach combining screening and treatment. A new demonstration project will be implemented from 2013, to provide population-based cervical screening and treatment of cervical lesions to women between 30-49 years. This demonstration project will initially focus on 1 OD in a Specialised Operational Agency (SOA) area, and will include the full spectrum from public awareness training, community awareness raising, , measures to encourage high attendance for women, financing, referral pathways, treatment/diagnostic capacity and data collection/monitoring.

Short term actions

- Implement a demonstration project to undertake VIA screening and treatment of all women aged 30-49 years in 1 OD in a Specialised Operational Agency (SOA) (2013-14)
    - This package will need to include local training, community awareness raising, measures to encourage high attendance for women, financing, referral pathways, treatment/diagnostic capacity and data collection/monitoring.
- Evaluate demonstration project and refine approach if indicated

Medium term actions

- Expand pilot cervical screening& treatment programme into 5 ODs in Specialised Operational Agency (SOA) areas (2015)
- Further expand cervical screening & treatment programme (2016)
- Update cervical cancer guideline to be in line with approach agreed after pilot (2016)

Long-term actions

- Develop national mass media communication strategy advising women of screening programme (2017)
- Expand cervical screening & treatment programme nationwide (2017)
- Once coverage of screening in 30-49 year age group is >80%, expand cervical screening programme to screen women aged 25-50 every 3 years, and women 50-65 every 5 years
- Review recommended screening technologies (tore consider introducing HPV DNA test instead of VIA if costs decrease) (2018-)

5.3.2.3 Increase access to palliative care

For many of the priority NCDs, the most feasible option to address these conditions in Cambodia in the short to medium term is prevention. Many of the treatment options are highly expensive, and require highly developed systems of referral, and public financing to be effective and accessible. Most cancer patients currently arrive at hospital in the terminal stages of their disease, when cure is not possible even if it was affordable. **In the short to medium-term, palliative care and pain relief needs to be strengthened**, to provide pain relief and dignity to the thousands of Cambodians who die from cancer and other NCDs each year.

Successful models of palliative care in low and middle income countries rely on community-based programmes and home-based care [13]. This approach aligns with the strong desire of many Cambodians with cancer to die at home. For these reasons, a pilot project will be developed to explore how palliative care can be provided at a community level. This pilot will build upon the lessons learned from Cambodia's experience with providing home based care for HIV/AIDS. The pilot project could involve a multidisciplinary team (with doctors, nurses and pharmacists), at the district hospital to provide initial assessment and prescribe medications for pain relief and symptom control, with Village Health Support Group (VHSG) to assess patients and provide home-based comfort cares as well as psycho-social support, with links to the local health centre. Initial support and technical expertise for this pilot can be supported by NGO partners, with the goal to develop an approach which can be sustained on a long-term basis by the public health system. Improved access to palliative medicines, pain management and palliative care training are essential. Some hospitals are reluctant to provide palliative care to patients because of fear about an increase in deaths adversely affecting the hospital's reputation, and the low profit potential from delivering palliative care. One strategy to address this could be to emphasise the

provision of palliative care and pain management as essential components of quality care – and include them in the monitoring of hospital quality.

Short term actions

- Establish National Technical Working Group on palliative care (including representatives from relevant MOH Departments, clinical experts in cancer, palliative care and psychosocial support, staff working in pilot areas, NGOs) (2013):
    - to inform development of pilot project (2013)
    - to develop other strategies to strengthen palliative care in Cambodia (drugs, availability, training) (2014-)
- Improve drug availability for palliative medicine and opioid analgesics (2013-2014)
- Undertake pilot project in one 1 OD (in a SOA area) to provide community-based palliative care for patients at home (involving district hospital, health centre, VSHG, families and NGO partners). This pilot will include training of nurses and VHSG. (2013-2014)
- Develop training for physicians and nurses at referral hospitals, nurses in health centers and VHSG (to be delivered in the area selected for the pilot project) (2013-2014)
- Evaluate pilot project for community-based palliative care (2014-2015)
- Include pain management as one of the criteria used to assess the quality of hospital care (2014)

Medium term actions

- Develop national palliative care action plan (2015)
- Refine and expand pilot project for community-based palliative care (2015-2016)
- Explore opportunities to provide palliative care for patients with NCDs and HIV/AIDs, and integrate palliative care with home-based care for HIV/AIDs (2015-)
- Improve drug availability for palliative medicines and opioid analgesics (2015-)

Long-term actions

- Expand the provision of community-based palliative care
- Enhance the capacity of all hospitals to provide palliative care as a valued, core service (with outpatient, inpatient, and mobile team service delivery options where feasible).
- Embed palliative care and pain relief into the curricula of all medical and nursing training programmes (including physiotherapists and pharmacists).

5.3.3 Enhance NCD surveillance

Currently Cambodia has no accurate routine source of data on deaths or illness from NCDs. The data on NCDs deaths come from WHO estimates based on risk factor surveys and data from neighbouring countries. One of the cross-cutting objectives of the HSP2 is to strengthen the national health information system (HIS) and there are activities underway to strengthen International Classification of Disease (ICD) coding, patient records, and incentivising the complete and timely reporting of data.

Useful Cambodian data on NCD morbidity and mortality will not be available until Cambodia has a HIS that includes the public and the private sector, with unique patient identifiers and universal cause of death certification. In the short to medium term, there are a number of specific strategies to strengthen NCD surveillance. Where possible, NCD surveillance systems should not be set up in parallel to the national HIS, but integrated into the HIS. However, currently the HIS system lacks the capacity/system features to adequately handle NCD data, for example for diabetes/hypertension

management, and cervical screening. Therefore in the short to medium term, some parallel NCD databases will need to be maintained until the HIS system can be upgraded.

Short term actions

- Re-establish and maintain hospital-based cancer registry at public Hospital (2013-)

Medium term actions

- Repeat STEPS survey, with salt consumption module (2015)
- Repeat National Adult Tobacco Survey of Cambodia (NATSC) (2016)

Long-term actions

- Integrate data on NCD care into HIS
    - Databases from diabetes clinics
    - Databases from peer educator networks
- Repeat STEPS survey, with salt consumption module (2020)
- Work towards a population-based cancer registry

5.3.4 Strengthen governance & resourcing for NCD

Strengthening governance for NCD is a critical priority, both within the health system, and in terms of the whole-of-government response.

NCD is a relatively a new programme area in Cambodia. Strong governance is required within the health system, to ensure a co-ordinated, strategic and cost-effective approach is taken. A NCD taskforce has been established, as one of four taskforces set-up to oversee the priority areas of the HSP2. This taskforce includes representatives from key MOH departments, provincial health departments and donors. The NCD task-force will have a key role in overseeing the implementation of this strategy, especially the activities of the health sector.

Given the projected rise in NCD[14], institutional capacity within the Ministry of Health to respond to NCD needs to be strengthened. At the moment, tasks relating to NCD surveillance, strategic planning, setting of clinical standards and policies, development and delivery of staff training, and co-ordination with other funding partners all rest with the Department of Preventive Medicine, with only a handful of staff. One measure proposed to expand the capacity for NCD within the MOH, is the establishment of a National Cancer Control Programme within the Ministry of Health, to oversee and co-ordinate the activities in this strategy relating to cancer surveillance, early detection and treatment, palliative care. The National Cancer Programme will also include human resource development and research, to respond to the present and future cancer burden in Cambodia. The National Cancer Control Programme will need to collaborate closely with other related departments (eg the Department of Preventive Medicine, and Department of Hospital Services) and the new National Cancer Centre to be established at Calmette Hospital from 2013.

But as mentioned above, many of the strategic priorities of this strategy require action outside the health system. For this reason, clear governance and leadership for NCD is required outside the Ministry of Health, to provide the mandate and accountability mechanism for the whole-of-government response. At the UN High Level Meeting on NCDs held in New York, September 2011 [34], Cambodia joined other governments in committing to establish or strengthen, by 2013, national multi-sectoral policies and plans for NCDs. A key activity in the short-term will be to develop a national multi-sectoral

action plan for NCD prevention and control, and establish a whole-of government mechanism to oversee implementation of this plan.

Increased and sustainable resourcing is urgently required for NCD prevention and control. The absolute investment in NCDs from the government budget, and from donor funding, needs to be increased, to address the urgent economic and social consequences to Cambodia. This is particularly true for population based prevention measures, for which no user co-payment is possible. In addition, secondary prevention and long-term management in primary care is required to keep people with NCDs living productive and healthy lives. Health Equity Funds have made an invaluable contribution to improving access to health care for the poor, but for NCD, most HEFs currently only cover the cost of acute care from NCD complications.

Short term actions

- Strengthen NCD task-force (increase frequency of meetings, set clear programme of work) (2013-)
- Provide training on NCDs and population based planning &prevention for provincial NCD focal points (2013-2014)
- PHDs to prepare Annual Operational Plan for NCD at a provincial level, to mobilise funding for NCD from government and donors (2013-)
- Develop national multi-sectoral action plan for NCD prevention and control, with actions across government and at each level (2013)
- Establish a whole-of government mechanism to oversee implementation (2013)
- Work with HEFs, CBHI, NSSF and NCSFF to review benefit package to provide more equitable access to chronic care for patients with NCD. (2013-2014)
- Establish National Cancer Center in Calmette Hospital, to increase access to better quality of cancer treatment, and as a national teaching & research center for training of oncologists in Cambodia (2013-2020)

Medium term actions

- Establish National Cancer Control Programme within the MOH (2015)
- Explore financing mechanisms to incentivise preventive health strategies at OD and provincial level (2015-2016)
- Establish a specific fund for NCD prevention and control from tobacco and alcohol taxation (2015)
- Better integrate NCD with other health sector programmes – MCH, HIV, TB, Leprosy.

5.3.5 Human resource development

Human resource development is a crucial cross-cutting theme for the successful implementation of this strategy. Human resource development for health is comprehensively dealt with in the *Cambodia Health Workforce Development Plan 2006-2015*. This section will not replace or duplicate what is contained in that strategy, but will simply emphasise some key points relating to human resource development for NCD.

Firstly, there needs to be a balance of attention given to pre-service and in-service training. A disproportionate level of funding and attention has gone into providing in-service training for NCD, without equal effort to strengthen pre-service training.

Secondly, training activities need to be directly related to a change in action – in-service training for NCD so far has often been stand-alone, "one-off" investments, which has not been well linked to any follow-up or a requirement to change practice. Training is one of a number of building blocks that need to be in place for a health service delivery initiative to work – and it should not be conducted in isolation. As part of this national strategy on NCD, training of health workers will be directly linked to demonstration projects or the roll-out of new initiatives in the priority areas (WHO PEN, single-visit cervical screening and palliative care).

Short term actions

- Develop and deliver training for health staff directly involved in implementing one of the 3 priority demonstration projects (2013-2014):
    - WHO PEN
    - Single visit cervical screening
    - Palliative care
- Deliver training on NCDs, population health needs assessment, surveillance, and population-based prevention to provincial NCD focal points (2013-2014)
- Ensure NCD questions are included in the national exit exam for health professionals (2013-2014)

Medium term actions

- Deliver training for health staff directly involved in implementing one of the 3 priority demonstration projects (ongoing):
    - WHO PEN
    - Single visit cervical screening
    - Palliative care
- Ensure NCD prevention, control and palliative care are included in the pre-service training curricula for all health professionals (2015)
- Develop a clear set of NCD competencies that health professionals require, to deliver MPA/CPA, and develop in-service training modules to include in MOH MPA/CPA training plan to address these competencies (including a list of approved courses/training providers, and frequency of updates required) (2015-2016)

6 Activities

Table 8summarises the timetable of activities to achieve the strategic priority objectives by 2020. This table also outlines the government agency responsible for implementing each activity, although this information is most complete for the actions required by the health sector. The full timetable and action plan for interventions requiring multi-sectoral action will be outlined in detail in the National MSA Plan for NCD.

Table 8 - Timetable of activities

		When	Responsible
Strategic objective 1.	**Reduce population exposure to common factors**		
1.1 Accelerate tobacco control	***Short term actions***		
	Finalise Tobacco Control Law	2013	MOH, Council of Ministers
	Tobacco Taxation Working Group to finalise plan to implement regular increases on tobacco taxation	2013-14	TTWG, MEF, MOH
	Expand implementation and enforcement of smoke-free environments sub-decree	2013-	IMC, MOH, municipalities, provincial governors
	Enforce sub-decree on advertising ban and health warnings	2013-	MOH, Ministry of Information
	Implement tobacco taxation increases	2014-	MEF, MOH
	Medium term actions		
	Continue to implement regular/annual tobacco taxation increases	2015-	MEF, MOH
	Introduce sub-decree require pictorial warning labels	2015-16	IMC, MOH
	Dedicate percentage of tobacco taxation income to financing NCD prevention and control	2015	MEF, MOH
	Continue to implement provisions of Draft Tobacco Law:	2015	
	➢ Restricting sale of tobacco and regulating vendors	ongoing	MOH, Ministry of Commerce & Local Government
	➢ Expanding smoke-free environments to cover all enclosed public spaces (including transportation and private workplaces/businesses)	ongoing	NCHP, MOH, IMC, local government
	Long-term actions		
	Continue to implement regular/annual tobacco taxation increases		MEF

	Continue enforcing provisions of Tobacco Law and tobacco control sub-decrees, on restriction of sale, smoke-free environments, importation and advertising bans		MOH, other relevant ministries
1.2 Scale up alcohol control	***Short term actions***		
	Establish Inter-Ministerial Committee for alcohol control	2013	Council of Ministers, MOH
	Ministry of Health to work with Ministry of Finance to increase alcohol taxation	2013-14	MOH, MEF
	Develop sub-decree to restrict alcohol advertising, promotion and sponsorship	2013	MOH, Ministry of Information
	Enforce drink driving law	2013-	MOH, Police
	Enforce sub-decree on alcohol advertising restrictions (including raising public awareness of the ban)	2014-	MOH, Ministry of Information
	Medium term actions		
	Develop sub-decree to restrict alcohol availability (including a minimum purchasing age, and restrictions over number/nature of retail outlets)	2015	MOH
	Develop Alcohol Control Law	2015	IMC, MOH
	Dedicate percentage of annual alcohol taxation to be allocated to fund for NCD prevention & control	2015-	MEF, MOH
	Expand ban on alcohol advertising	2016	MOH, Ministry of Information, local government
	Long-term actions		
	Enforce restrictions on alcohol availability (including raising public awareness of the ban)		MOH, IMC, local authorities
	Offer counselling for hazardous drinking in primary care	2017-	MOH & HCs
1.3 Promote healthy diets & physical activity	***Short term actions***		
	Undertake small scale salt consumption survey (2012-2013)	2013	DPM/MOH, UHS
	Undertake national salt consumption survey (2013-14)	2013-14	DPM/MOH, UHS
	Pilot salt consumption reduction interventions (2014)	2014	DPM/MOH, MIME, Ministry of Planning
	Strengthen Healthy Cities initiative in Phnom Penh City: ➢ Launch Health Promoting Schools programme in 3 schools in Phnom Penh ➢ Explore other strategies to make healthy diets the norm in Phnom Penh (eg working with food vendors)	 2013 2014	DPM/MOH, PPHD, PPC, SHD/MoEYS
	Begin multi-sectoral discussions on how to reduce salt content of foods	2014-	DPM/MOH, MIME, Ministry of

			Planning
	Raise public awareness about healthy diet and physical activity through mass media	2013-2014	DPM/MOH, Ministry of Information
	Begin multi-sectoral discussions on substituting trans-fats for polyunsaturated fats	2013-	DPM/MOH, MIME
	Medium term actions		
	Develop national salt reduction action plan	2015	DPM/MOH, MIME, Ministry of Planning
	Implement national salt reduction action plan	2015-16	DPM/MOH, MIME
	Include NCD dietary risks in next version of National Nutrition Strategy	2016-	MCH, DPM/MOH
	Expand Health Promoting Schools		PPHD,DPM/MOH, SHD/MoEYS
	Long-term actions		
	Restrict marketing of unhealthy food and beverages to children		Ministry of Information, MCH/MOH, MIME
	Promote healthy diets and physical activity through workplaces (especially low income workplaces, eg garment factories)		DPM, Ministry of Labour, Private sector partners
	Explore financing mechanisms (subsidies and taxation) to make healthy diets more affordable & available		MOF, PMD/MOH, Ministry of Agriculture, MIME
1.4 Immunise against cancer causing infections	***Short term actions***		
	Develop national guideline on HPV vaccination, to inform national mass vaccination programme	2013-14	MOH, NIP & DPM
	Ensure all babies born in a healthy facility receive Hep B vaccination within 24 hours: ➢ Ensure all provincial hospitals have a cold chain on maternity wards ➢ Educate staff on immunisation guidelines	2013-	NIP, MOH
	Medium term actions		
	Plan for a demonstration project for HPV vaccination to girls in schools	2014	NIP & DPM, MOH MoEYS
	Conduct demonstration project for HPV vaccination to girls in schools	2015	NIP,DPM/MOH, MoEYS
	Long-term actions		
	Make full application to GAVI for co-funding of HPV vaccination	2016	NIP,DPM/MOH
	Implement national HPV vaccination to girls	2017-	NIP/MOH, MoEYS

Strategic objective 2.	Pursue cost-effective detection, treatment and palliative care		
2.1. Provide integrated management of NCDs through primary care	***Short term actions***		
	Pilot WHO Package of Essential Noncommunicable Disease Interventions (PEN) for primary health care in 3 health facilities (in SOAs)	2012-2013	DPM/MOH, PHD, OD, HC
	Evaluate pilot and modify PEN as appropriate	2013	DPM/MOH, PHD, OD, HC
	Expand PEN to further high capacity health centres in SOAs	2014	DPM/MOH, PHD, OD, HC
	Deliver peer educator networks for patients with hypertension and diabetes in 13 OD	2013	DPM/MOH, PHD, OD, HC
	Work towards the progressive integration of these networks into the routine operation of the public health system		DPM/MOH, PHD, OD,HC
	Develop an operational manual/supervision guideline for OD managers to manager the peer educator networks	2013	DPM
	Expand capacity to manage referred cases of NCD from health centres, by expanding numbers of provincial referral hospitals with specialist NCD clinics	2013-2014	DPM, PHD, OD
	Medium term actions		
	Progressively expand PEN to all health facilities (with consistent drug supply funded by MOH budget)	2015-	DPM/MOH, PHD, OD, HC
	Expand peer educator networks to other OD	2015-	DPM/MOH, PHD, OD, HC
	Further expand numbers of provincial referral hospitals with specialist NCD clinics	2015-2017	DPM, PHD, OD
	Long-term actions		
	Review the PEN package, and explore feasibility of expanding the range of interventions/treatments offered		DPM/MOH, PHD, OD
	Provide PEN and peer educator networks in all OD		DPM/MOH, PHD, OD,HC
2.2. Enhance screening and early treatment for cervical cancer	***Short term actions***		
	Implement a demonstration project to undertake cervical screening & treatment of all women aged 30-49 years in 1 OD in a SOA (including local training, community awareness raising, measures to encourage high attendance for women, financing, referral pathways, treatment/diagnostic capacity and data collection/monitoring)	2013-14	DPM, MCH/MOH, PHD, OD, HC
	Evaluate demonstration project and refine approach if indicated	2014	DPM, MCH/MOH, PHD, OD, HC
	Medium term actions		

	Expand cervical screening & treatment programme into 5 ODs in SOA	2015	DPM, MCH/MOH, PHD, OD, HC
	Further expand cervical screening & treatment programme	2016	DPM, MCH/MOH, PHD, OD, HC
	Update cervical cancer guideline to be in line with approach agreed after demonstration project	2016	DPM, MCH/MOH, PHD, OD
	Long-term actions		
	Develop national mass media communication strategy advising women of screening programme (2017)	2017	DPM, MCH/MOH, PHD, OD
	Expand cervical screening & treatment programme nationwide (2017)	2017	DPM, MCH/MOH, PHD, OD
	Review recommended screening technologies (to reconsider introducing HPV DNA test instead of VIA if costs decrease) (2018-)	2018	DPM, MCH/MOH
2.3. Increase access to palliative care (central & local)	***Short term actions***		
	Establish National Technical Working Group on palliative care:	2013	DPM, DHS, Dept of Essential Drugs & Medicines, MOH, PHD, cancer specialists, staff working on pilot.
	➢ to inform development of pilot project	2013	
	➢ to develop other strategies to strengthen palliative care in Cambodia (drugs, availability, training)	2014-	
	Improve drug availability for palliative medicine and opioid analgesics	2013-14	DPM, Department of Drug and Food Administration, MOH, Ministry of Interior.
	Undertake pilot project in 1 OD in a SOA area to provide community-based palliative care for patients at home (involving district hospital, health centre, VHSG, and NGO partners)	2013-14	DPM/MOH, PHD, OD (supported by NGO: DSF)
	Develop training for physicians and nurses at referral hospitals, nurses in health centers and VHSG (to be delivered to staff in the area selected for the pilot project)	2013-2014	DPM, MOH (supported by NGO: DSF)
	Evaluate pilot project for community-based palliative care	2014-2015	DPM/MOH, PHD, OD (supported by NGO: DSF)
	Include pain management as one of the criteria used to assess the quality of hospital care	2014	DPM, DHS/MOH
	Medium term actions		
	Develop national palliative care action plan	2015	DPM, DHS/MOH
	Refine and expand pilot programme for community-based palliative care	2015-2016	MOH, PHD, OD (supported by NGO: DSF)
	Explore opportunities to provide palliative care for patients with NCDs and HIV/AIDS,	2015-	MOH, NCHADS

	and integrate palliative care with home-based care for HIV/AIDS		
	Long-term actions		
	Expand the provision of community-based palliative care		DPM/MOH, PHD, OD (supported by NGO: DSF)
	Enhance the capacity of all hospitals to provide palliative care as a valued, core service		DPM, DHS,MOH
	Embed palliative care and pain relief into the curricula of all medical and nursing pre-service training programmes		DPM, DHS,MOH, UHS, other training institutions
Strategic objective 3.	**Enhance NCD surveillance**		
3.1. Establish hospital-based cancer registry	***Short term actions***		
	Establish and maintain hospital-based cancer registry at public Hospital	2013-	DPM/MOH, public Hospital
	Long-term actions		
	Work towards a population-based cancer registry		DPM/MOH
3.2. Improve data collection on NCD care	***Long term actions***		
	Integrate data on NCD care into HIS:	2017-	
	➢ Databases from diabetes clinics		MOH (DPM & DPHI)
	➢ Databases from peer educator networks		MOH (DPM & DPHI)
3.3. Monitor risk factors through consistent national surveys at regular intervals	***Medium term actions***		
	Repeat STEPS survey, with salt consumption module	2015	DPM/MOH, UHS
	Repeat National Adult Tobacco Survey of Cambodia (NATSC)	2016	Ministry of Planning
	Long-term actions		
	Repeat STEPS survey, with salt consumption module	2020	DPM/MOH, UHS
Strategic objective 4.	**Strengthen governance & resourcing for NCD**		
4.1 Strengthen NCD coordination across MOH	***Short term actions***		
	Strengthen NCD task-force (increase frequency of meetings, set clear programme of work)	2013-	MOH
	Build capacity of the provincial health NCD focal points	2013-14	DPM/MOH, PHD
	PHDs to prepare Annual Operational Plan for NCD at a provincial level, to mobilise funding for NCD from government and donors	2013-	PHD, MOH
	Medium term actions		
	Establish National Cancer Control Programme within the MOH	2015	MOH

	Better integrate NCD with other health sector programmes – MCH, HIV/AIDS, and TB		DPM, NCHADS, CENAT/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	***Short term actions***		
	Develop national multi-sectoral action plan for NCD prevention and control	2013	MOH to co-ordinate, but whole of government responsibility
	Establish a whole-of government mechanism to oversee implementation	2013	
4.3 Increase resourcing for NCDs	***Short term actions***		
	Establish National Cancer Center in Calmette Hospital, to increase access to better quality of cancer treatment, and as a national teaching & research center for training of oncologists in Cambodia (2013-2020)	2013-2020	MOH, Calmette Hospital
	Medium term actions		
	Establish a specific fund for NCD prevention and control from tobacco and alcohol taxation	2015	MOH, MEF
Cross-cutting themes			
Financing for NCDs	***Short term actions***		
	Work with HEFs and CBHI to include more equitable access to chronic care for patients with NCD	2013-14	DPM, DPHI/MOH
	Work with NFSS and NCSSF to include more access to chronic care for patients with NCD in benefit packages	2013-14	DPM, DPHI/MOH
	Medium term actions		
	Explore financing mechanisms to incentivise preventive health strategies at OD and provincial level	2015-	DPM, DPHI/MOH
Human resources for NCD	***Short term actions***		
	Develop and deliver training for health staff directly involved in implementing one of the 3 priority demonstration projects: ➢ WHO PEN ➢ Single visit cervical screening ➢ Palliative care	2013-2014	DPM, MOH
	Deliver training on NCDs, population health needs assessment& planning,	2013-2014	DPM, MOH

	surveillance, and population-based prevention to provincial NCD focal points.		
	Ensure NCD questions are included in the national exit exam for health professionals	2013-2014	MOH, DPM and Department of Human Resource Development, MOH
	Medium term actions		
	Deliver training for health staff directly involved in implementing one of the 3 priority demonstration projects: ➢ WHO PEN ➢ Single visit cervical screening ➢ Palliative care	ongoing	DPM, MOH
	Ensure NCD prevention, control and palliative care are included in the pre-service training curricula for all health professionals	2015	MOH, DPM and Department of Human Resource Development, and universities/training institutions
	Develop a clear set of NCD competencies that health professionals require to deliver MPA/CPA, and develop in-service training modules to include in MOH MPA/CPA training plan to address these competencies (including a list of approved courses/training providers, and frequency of updates required)	2015-2016	MOH, DPM and Department of Human Resource Development

7 Financial resources& implementation

7.1 Financial resources

Financial resources to implement this strategy will come from a number of sources, as outlined in Table 9.

Table 9 - Funding sources for the implementation of the NCD strategy

Source	Purpose/priority use for funding
Government budget	To fund core operational costs at a central and provincial level, to deliver prevention and care through public health facilities. This includes the planning, surveillance, governance for NCD, ensuring the availability of essential medicines and equipment, and participating in multi-sectoral policy development/implementation (eg for tobacco and alcohol)
A specific fund established from tobacco and alcohol taxation for NCD prevention and control	To fund effective population prevention strategies, as outlined in this strategy
Pooled donor funding from the Health Sector Support Programme 2 (HSSP2)	To support the strengthening of health service delivery, and implementation of the National Strategic Plan for NCD
User co-payments	To co-fund the secondary prevention, management, treatment, and medicines for NCDs in public facilities
Non-pooled donor funds & NGO resources	Collaboration, financial and technical assistance in implementation of the National Strategic Plan for NCD

The pooled donor funding offers great potential to use donor assistance to more closely support government priorities. Up until now, there has been a disproportionate use of pooled donor funding on training and purchase of equipment, with poor follow-up/linkage to changes in activities. The priority going forward will be to use this funding more strategically to encourage new ways of health service delivery, particularly in primary care, to strengthen the health system capacity to respond to priority NCD objectives, as outlined in this strategy.

Training and purchase of equipment should only be supported as part of a "package" and directly linked to specific priority activities/initiatives (for example, the cervical screening & treatment demonstration project or the roll-out of WHO PEN).

7.2 Implementation& accountability

Implementing the National Strategic Plan for the Prevention and Control of NCD requires the co-operation of multiple Ministry of Health departments. The Secretary of State will ultimately be responsible for ensuring that the activities outlined in the strategy are implemented. The specific activities for which each Ministry of Health department or government agency is responsible for implementing, are outlined in Table 8. Where multiple departments are responsible for a particular activity, this activity will be co-ordinated through inter-departmental meetings on this activity. Figure 3 shows how this strategy sits in relation to other national Ministry of Health strategies.

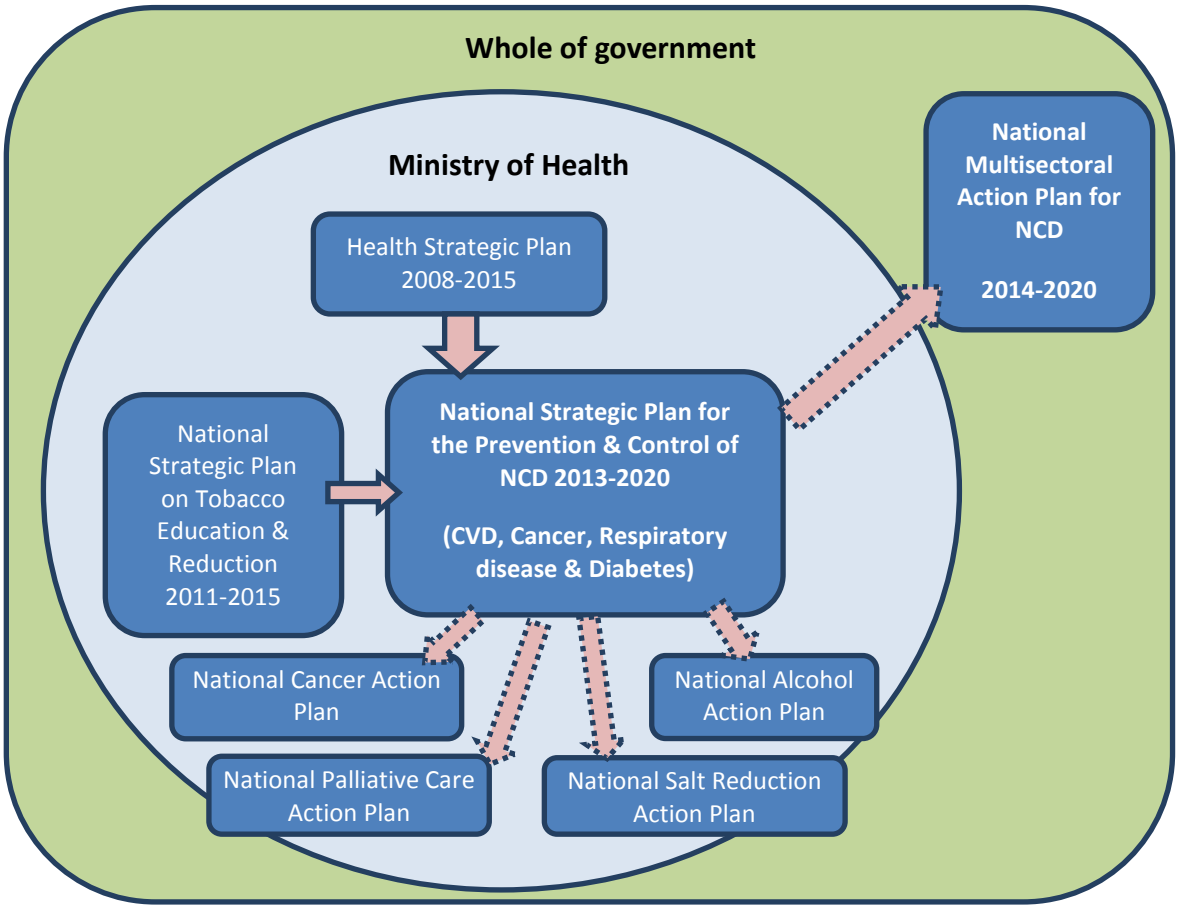
The NCD taskforce will have the key responsibility to oversee the implementation of this strategy and to monitor progress towards achieving the objectives. A key role for the NCD taskforce will be

to ensure resources are allocated (at a national, provincial and operational district level) according to the priorities outlined in this national strategy. Secretariat support will be made available for the NCD task-force to assist them in their work. Each department will be responsible for reporting on the progress of their respective activities to the NCD taskforce. The indicators outlined in this strategy will be added to/replace the indicators for NCD outlined in HSP2, and will be incorporated into the HSP2 annual review and AOP process.

Other ministries will need to be responsible for implementing the actions for their sector, to achieve the strategic objective outlined in this strategy. The specific responsibilities and accountability mechanisms for these activities outside the health sector, will be outlined in more detail in the National MSA plan for NCD.

A mid-term review of this strategy will be conducted in early 2016, taking into account the results of the final review of the HSP2, and the results of the 2015 STEPS survey. The results of the mid-term review will be used to make any necessary adjustments to the activities planned for the remainder of the strategy's duration.

Figure 3 - Alignment of National NCD Strategy with other national strategies



8 Monitoring and evaluation

8.1 Sources of information

8.1.1 Core national surveys required on a regular basis

Core national surveys form a central part of Cambodia's national surveillance system for NCD. These surveys use a consistent method, enabling trends to be compared over time, and are also internationally consistent, enabling Cambodia's progress to be compared internationally. The following are the core NCD surveys which will be embedded as part of Cambodia's health system, and routinely conducted every 5 years:

- STEPS survey on prevalence of NCD risk factors - last done 2010, repeats due 2015 & 2020
- National Adult Tobacco Survey of Cambodia (NATSC) - last done 2011, repeats due 2016 & 2021
- Cambodian Demographic & Health Survey (CDHS) – last done 2010, repeats due 2015 & 2020

8.1.2 Health service data

Current data on deaths and disability due to NCDs in Cambodia are based on estimates using national surveys on risk profiles and data from neighbouring countries. Cambodia needs to strengthen its vital registration and health information collection system, to provide more accurate data based on NCD deaths. Ultimately, a population-based cancer registry is needed to give accurate data on the national incidence and death rates of cancer. In the meantime, the establishment of a hospital-based cancer registry at the new National Cancer Centre at Calmette Hospital is an important first step in this direction. To improve the quality of the national health information system (HIS), efforts need to be made to input the data on NCDs that are already collected into the HIS. This includes integrating the stand-alone databases of diabetes clinics and peer educator networks into the HIS as much as possible.

8.2 Suggested high-level indicator framework

A consistent framework of indicators (Table 10) will be used to monitor progress towards the priority strategic objectives outlined in this strategy. These indicators have been chosen to meet the following criteria:

- Matched to the priority objectives of the strategy
- Measure progress on a mixture of risk factors, health system response and outcomes, to show short term progress as well as long term
- Provide a mix of indicators that can be analysed at a sub-national level (province, OD) and by main equity stratifiers (sex, urban/rural residence)
- Consistent with indicators proposed under the Global Monitoring Framework for NCD, that countries will be asked to report upon globally

Additional indicators may need to be agreed to measure progress towards certain specific initiatives – especially multi-sectoral activities. The process indicators in this framework currently focus on the response of the health sector – and do not adequately monitor the response of other sectors. These multi-sectoral indicators will need to be developed once the *National Multi-sectoral Action Plan for the Prevention and Control of Noncommunicable Disease* is finalised in 2013.

Table 10 - National monitoring framework for noncommunicable diseases

	Indicator	Baseline	Frequency	Source	Level reported	Notes
Strategic objective 1. Reduce population exposure to common factors						
1.1 Accelerate tobacco control	Prevalence of daily tobacco use in men and women >18 years*	Men = 43.3% in 2011 Women = 17.2% in 2011	Every 4-5 years	STEPS & NATSC surveys	National (by gender, age & rural/urban)	
1.2 Scale up alcohol control	Total alcohol consumption per capita (>15 years) per calendar year, of pure alcohol*	4.77 litres (2005)	Annual	WHO, FAO& industry data	National	Alternative indicator: % of adults 25-64 years who engaged in heavy episodic drinking in the last 30 days (from STEPS)
1.3 Promote healthy diets (especially salt reduction)	Prevalence of adults 25-64 years who are overweight or obese*	15.4% (2010)	Every 5 years	STEPS survey	National (by gender, age & rural/urban)	2015 STEPS survey will include adults aged 18-64, but indicator should be kept to 25-64 years to allow comparison with 2010

	Mean population salt consumption*	n/a	2013, 2015, then every 5 years	National salt consumption survey/STEPS survey	National	Will have baseline in 2013
	Prevalence of adults 25-64 years who have raised blood glucose or diabetes*	2.9% (2010)	Every 5 years	STEPS survey	National (by gender, age & rural/urban)	
	Prevalence of adults 25-64 years who have hypertension*	11.2% (2010)	Every 5 years	STEPS survey	National (by gender, age & rural/urban)	
	Percentage of adults 25-64 consuming <5 servings of fruit and vegetables per day	84.3% (2010)	Every 5 years	STEPS survey	National (by gender, age & rural/urban)	
1.4 Immunise against cancer causing infections	% of babies receiving Hepatitis B vaccination within 24 hours of birth	68% in 2011	Annually	Health facility data	National, province, OD	
	% of 11 year old girls fully immunised for HPV	n/a	Annually once programme commences (2017-)			Precise age/school year range will be confirmed once approach is finalised
Strategic objective 2. Pursue cost-effective detection, treatment and palliative care						
2.1 Provide integrated management of NCDs through primary care	% of suspected people with diabetes 25-64 years receiving treatment in public facilities	n/a	Annually	Health facility data (using national STEPS prevalence in denominator)	OD/Province/ National	Age-range limited to 25-64 years to be consistent with STEPS survey age range
	% of suspected people with hypertension 25-64 years receiving treatment in public facilities	n/a	Annually	Health facility data (using national STEPS prevalence in denominator)	OD/Province/ National	Age-range limited to 25-64 years to be consistent with STEPS survey age range
2.2 Enhance screening and early treatment for cervical cancer	% of women aged 30-49 screened for cervical cancer at least once*	n/a	Annually	Health facility data	OD/Province/ National	Initially monitor for those ODs where pilot programme is introduced
2.3 Increase access to palliative care (central	Morphine-equivalent consumption of strong opioid	0.6872 mg ME per	Annually	National	IARC GLOBOCAN and	

&local)	analgesics (excluding methadone) per death from cancer*	capita (2009)			International Narcotics Control Board	
Strategic objective 3. Enhance NCD surveillance						
3.1 Re-establish hospital-based cancer registry	Cancer incidence and deaths, by type at public Hospital	n/a	Annually		Sub-national (Public Hospital only)	

*These indicators are similar to those proposed in the Global Monitoring Framework, to be discussed at the WHA in May 2013.
A detailed explanation of how these indicators are calculated is provided in Annex 1

It is not feasible or necessary to measure progress on every single indicator each year. Some of the indicators are chosen to measure the impact of policies which will take longer than a year to have an impact. For some of the process indicators of health system response, it is important to monitor progress annually (Table 11). As the NCD response becomes more developed over the course of this strategy, additional indicators may be considered, to measure quality of health system response. For example, indicators of individual health facility capacity and performance in providing integrated NCD management could include % of diabetics achieving target control or % of health facilities in the OD providing PEN. More detailed performance indicators should be considered for those health facilities implementing PEN, and considered at a national level once PEN is universally provided at all public health facilities.

Table 11 - Indicators by type, and time-frame

	Risk factor exposure	Health system response	Outcomes
Short-term progress (annual)	• Total alcohol consumption per capita (>15 years) per calendar year, of pure alcohol*	• Percentage of babies receiving Hepatitis B vaccination within 24 hours of birth • Percentage of 11 year old girls fully immunised for HPV* • Percentage of estimated people with diabetes 25-64 years receiving treatment in public facilities • Percentage of estimated people with hypertension 25-64 years receiving treatment in public facilities • Percentage of women aged 30-49 screened for cervical cancer at least once* • Morphine-equivalent consumption of strong opioid analgesics (excluding methadone) per death from cancer*	• Cancer incidence and deaths, by type at KSFH
Medium-term progress (5 yearly)	• Prevalence of daily tobacco use in men and women ≥18 years* • Mean population salt consumption* • Percentage of adults 25-64 years consuming <5 servings of fruit and vegetables per day*		• Prevalence of adults 25-64 years who are overweight or obese* • Prevalence of adults 25-64 years who have raised blood glucose or diabetes* • Prevalence of adults 25-64 years who have hypertension*

Annex 1 – Explanation of indicators

	Indicator	Method of calculation
Strategic objective 1. Reduce population exposure to common factors		
1.1 Accelerate tobacco control	Prevalence of daily tobacco use in men ≥18 years*	• **Numerator:** Total number of men ≥18 years using any type of tobacco daily; • **Denominator:** Total number of men ≥18 years included in the NATSC
	Prevalence of daily tobacco use in women ≥18 years*	• **Numerator:** Total number of women ≥18 years using any type of tobacco daily; • **Denominator:** Total number of women ≥18 years included in the NATSC • **Data sources:** NATSC survey
1.2 Scale up alcohol control	Total alcohol consumption per capita (>15 years) per calendar year, of pure alcohol*	• **Numerator:** Total recorded (from industry from FAO & data) and unrecorded (estimated from WHO) amount of alcohol consumed over a calendar year, in litres of pure alcohol. Recorded alcohol consumption refers to official statistics (production, import, export, and sales or taxation data), while the unrecorded alcohol consumption refers to alcohol which is not taxed and is outside the usual system of governmental control. • **Denominator:** Number of people in the population > 15 years of age • **Data sources:** WHO GISAH (FAO and industry data), general population census of Cambodia
1.3 Promote healthy diets (especially salt reduction)	Prevalence of adults 25-64 years who are overweight or obese*	• **Numerator:** Total number of adults 25-64 years who have a BMI ≥ 25 kg/m^2 • **Denominator:** Total number of adults 25-64 years included in the STEPS survey • **Data sources:** STEPS survey
	Mean population salt consumption*	• Average level of daily salt consumption (in mg) as determined by the urinalysis of samples from participants in the STEPS survey. • **Data sources:** STEPS survey
	Prevalence of adults 25-64 years who have raised blood glucose or diabetes*	• **Numerator:** Total number of adults 25-64 years who have a fasting blood glucose ≥ 6.1 mmol/L, or who are currently on medication for diabetes • **Denominator:** Total number of adults 25-64 years included in the STEPS survey • **Data sources:** STEPS survey
	Prevalence of adults 25-64 years who have hypertension*	• **Numerator:** Total number of adults 25-64 years with SBP ≥ 140mmHg, and/or DBP ≥ 90mmHg, or who are currently on medication for hypertension • **Denominator:** Total number of adults 25-64 years included in the STEPS survey • **Data sources:** STEPS survey
	Percentage of adults 25-64 years consuming <5 servings of fruit and vegetables per day	• **Numerator:** Total number of adults 25-64 years who consume less than 5 servings of fruit and vegetables per day • **Denominator:** Total number of adults 25-64 years included in the STEPS survey

		• **Data sources:** STEPS survey
1.4 Immunise against cancer causing infections	% of babies receiving Hepatitis B vaccination within 24 hours of birth	• **Numerator:** Total number of babies receiving Hepatitis B vaccination within 24 hours • **Denominator:** Total number of registered births in OD • **Data sources:** HIS, Health facility data.
	% of 11 year old girls fully immunised for HPV	• To be specified once approach to HPV immunisation is finalised (2017-)
Strategic objective 2. Pursue cost-effective detection, treatment and palliative care		
2.1 Provide integrated management of NCDs through primary care	% of estimated people 25-64 years with diabetes receiving treatment in public facilities	• **Numerator:** Total number of individual outpatients with diabetes registered and receiving secondary prevention and treatment in public health services. • **Denominator:** Estimated number of people aged 25-64 years with diabetes in general population years (Total population aged 25-64years of OD x national prevalence of diabetes from STEPS survey) • **Data sources:** HIS, Cambodia STEPS survey, and general population census of Cambodia 2008 (using population projections).
	% of estimated people 25-64 years with hypertension receiving treatment in public facilities	• **Numerator:** Total number of individual outpatients with hypertension registered and receiving secondary prevention and treatment in public health services. • **Denominator:** Estimated number of adult with hypertension in general population aged 25-64 years (Total population aged 25-64years of OD x national prevalence of hypertension from STEPS survey) • **Data sources:** HIS, Cambodia STEPS survey, and general population census of Cambodia 2008 (using population projections).
2.2 Enhance screening and early treatment for cervical cancer	% of women aged 30-49 screened for cervical cancer at least once*	• **Numerator:** Total number of women aged between 30-49 years screened for cervical cancer in public health facilities (cumulative) • **Denominator:** Total number of women aged 30-49 years in the OD • **Data sources:** Health facility data, and general population census of Cambodia 2008 (using most recent population projections).
2.3 Increase access to palliative care (central & local)	Morphine-equivalent consumption of strong opioid analgesics (excluding methadone) per death from cancer*	• **Numerator:** National morphine-equivalent consumption of strong opioid analgesics (excluding methadone) – formula as described by WHO Collaborating Centre for Drug Statistics Methodology • **Denominator:** Total estimated annual deaths in Cambodia from cancer (any type) • **Data sources:** WHO annual estimates for cancer deaths, International Narcotics Control Board for the numerator
Strategic objective 3. Enhance NCD surveillance		
3.1 Re-establish hospital-based cancer registry	Cancer incidence and deaths, by type at Public Hospital	Descriptive data only – numbers of new cases of cancer, by type, and numbers of cancer deaths, by type, at Public Hospital, in the last year.

Annex 2 – Indicative budget for short-term activities

Activities		When	Responsible	Estimated budget 2013	Estimated budget 2014
Strategic objective 1. Reduce population exposure to common factors					
1.1 Accelerate tobacco control	Finalize Tobacco Control Law	2013	MOH, Council of Ministers	$15,000	$15,000
	Tobacco Taxation Working Group to finalize plan to implement regular increases on tobacco taxation	2013-14	TTWG, MEF, MOH	$25,000	$25,000
	Expand implementation and enforcement of smoke-free environments sub-decree	2013-	IMC, MOH, municipalities, provincial governors	$40,000	$40,000
	Enforce sub-decree on advertising ban and health warnings	2013-	MOH, Ministry of Information	$30,000	$30,000
	Implement tobacco taxation increases	2014-	MEF, MOH	-	$71,500
1.2 Scale up alcohol control	Establish Inter-Ministerial Committee for alcohol control	2013	Council of Ministers, MOH	$12,000	-
	Ministry of Health to work with Ministry of Finance to increase alcohol taxation	2013-14	MOH, MEF	$10,000	$10,000
	Develop sub-decree to restrict alcohol advertising, promotion and sponsorship	2013	MOH, Ministry of Information	$30,000	-
	Enforce drink driving law	2013-	MOH, Police	$100,000	$100,000
	Enforce sub-decree on alcohol advertising restrictions (including raising public awareness of the ban)	2014-	MOH, Ministry of Information	-	$50,000
1.3 Promote healthy diets & physical activity	Undertake small scale salt consumption survey (2012-2013)	2013	DPM/MOH, UHS	$10,000	-
	Undertake national salt consumption survey (2013-14)	2013-14	DPM/MOH, UHS	$100,000	-

	Pilot salt consumption reduction interventions (2014)	2014	DPM/MOH, MIME, Ministry of Planning	-	$50,000
	Strengthen Healthy Cities initiative in Phnom Penh City: ➢ Launch Health Promoting Schools programme in 3 schools in Phnom Penh Health District ➢ Explore other strategies to make healthy diets the norm in Phnom Penh (eg working with food vendors)	2013 2014	DPM/MOH, PPHD, PPC, SHD/MoEYS	$20,000	$20,000
	➢ Begin multi-sectoral discussions on how to reduce salt content of foods	2014-	DPM/MOH, MIME, Ministry of Planning	-	$10,000
	Raise public awareness about healthy diet and physical activity through mass media	2013-2014	DPM/MOH, Ministry of Information	$30,000	$15,000
	Begin multi-sectoral discussions on substituting trans-fats for polyunsaturated fats	2013-	DPM/MOH, MIME	$10,000	-
1.4 Immunize against cancer causing infections	Develop national guideline on HPV vaccination, to inform national mass vaccination programme	2013-14	MOH, NIP & DPM	$10,000	-
	Ensure all babies born in a healthy facility receive Hep B vaccination within 24 hours: ➢ Ensure all provincial hospitals have a cold chain on maternity wards ➢ Educate staff on immunization guidelines	2013-	NIP, MOH	$338,860	$247,676
Strategic objective 2. Pursue cost-effective detection, treatment and palliative care					
2.1. Provide integrated management of NCDs through primary care	Pilot WHO Package of Noncommunicable Disease Interventions (PEN) for primary health care in 3 health facilities (in SOAs)	2012-2013	DPM/MOH, PHD, OD, HC	$20,000	-
	Evaluate pilot and modify PEN as appropriate	2013	DPM/MOH, PHD, OD, HC	$2,000	-
	Expand PEN to a further 10 high capacity health centres in	2014	DPM/MOH, PHD, OD, HC	-	$73,000

	SOAs				
	Deliver peer educator networks for patients with hypertension and diabetes in 13 OD	2013	DPM/MOH, PHD, OD, HC	$376,222	$675,725
	Work towards the progressive integration of these networks into the routine operation of the public health system		DPM/MOH, PHD, OD,HC	Included in above	Included in above
	Develop an operational manual/supervision guideline for OD managers to manager the peer educator networks	2013	DPM	$15,000	-
	Expand capacity to manage referred cases of NCD from health centres, by expanding numbers of provincial referral hospitals with specialist NCD clinics	2013-2014	DPM, PHD, OD	$213,000	
2.2. Enhance screening and early treatment for cervical cancer	Implement a demonstration project to undertake cervical screening & treatment of all women aged 30-49 years in 1 OD in a SOA (including local training, community awareness raising, measures to encourage high attendance for women, financing, referral pathways, treatment/diagnostic capacity and data collection/monitoring)	2013-14	DPM, MCH/MOH, PHD, OD, HC	$35,000	$35,000
	Evaluate demonstration project and refine approach if indicated	2014	DPM, MCH/MOH, PHD, OD, HC	-	$3,500
2.3. Increase access to palliative care (central & local)	Establish National Technical Working Group on palliative care:	2013	DPM, DHS, Dept of Essential Drugs & Medicines, MOH, PHD, cancer specialists, staff working on pilot.	$10,000	-
	To inform development of pilot project	2013	DPM, DHS, Dept of Essential Drugs & Medicines, MOH, PHD, cancer specialists, staff working on pilot.	-	-
	➢ to develop other strategies to strengthen palliative care in Cambodia (drugs, availability, training)	2014-	DPM, Department of Drug and Food Administration, MOH, Ministry of Interior.	-	$10,000

	➢ Improve drug availability for palliative medicine and opioid analgesics	2013-14	DPM, Department of Drug and Food Administration, MOH, Ministry of Interior.	$10,000	$10,000
	Undertake pilot project in 1 OD in a SOA area to provide community-based palliative care for patients at home (involving district hospital, health centre, VSHG, and NGO partners)	2013-14	DPM/MOH, PHD, OD (supported by NGO: DSF)	$200,000	$200,000
	Develop training for physicians and nurses at referral hospitals, nurses in health centers and VHSG (to be delivered to staff in the area selected for the pilot project)	2013-2014	DPM, MOH (supported by NGO: DSF)	$20,000	-
	Evaluate pilot project for community-based palliative care	2014-2015	DPM/MOH, PHD, OD (supported by NGO: DSF)	-	$10,000
	Include pain management as one of the criteria used to assess the quality of hospital care	2014	DPM, DHS/MOH	-	$2,000
Strategic objective 3. Enhance NCD surveillance					
3.1. Establish hospital-based cancer registry	Establish and maintain hospital-based cancer registry at public Hospital	2013-	DPM/MOH, Public Hospital		$1,0000
Strategic objective 4. Strengthen governance & resourcing for NCD					
4.1 Strengthen NCD coordination across MOH	Strengthen NCD task-force (increase frequency of meetings, set clear programme of work)	2013-	MOH	$500	$500
	Build capacity of the provincial health NCD focal points	2013-14	DPM/MOH, PHD	$3,283	$3,283
	PHDs to prepare Annual Operational Plan for NCD at a provincial level, to mobilize funding for NCD from government and donors	2013-	PHD, MOH	$3,283	$3,283

4.2 Develop a national multi-sectoral action plan for NCD prevention and control, and establish a whole-of government mechanism to oversee	Develop national multi-sectoral action plan for NCD prevention and control	2013	MOH to co-ordinate, but whole of government responsibility	$10,000	-
implementation	Establish a whole-of government mechanism to oversee implementation	2013		$10,000	-
Cross-cutting themes					
Financing for NCDs	Work with HEFs and CBHI to include more equitable access to chronic care for patients with NCD	2013-14	DPM, DPHI/MOH	-	-
	Work with NFSS and NCSSF to include more access to chronic care for patients with NCD in benefit packages	2013-14	DPM, DPHI/MOH	-	-
Human resources for NCD	Develop and deliver training for health staff directly involved in implementing one of the 3 priority demonstration projects: ➢ WHO PEN ➢ Single visit cervical screening ➢ Palliative care	2013-2014	DPM, MOH	Included in Activity 2.2	Included in Activity 2.2
	Deliver training on NCDs, population health needs assessment & planning, surveillance, and population-based prevention to provincial NCD focal points.	2013-2014	DPM, MOH	Included in Activity 4.1	Included in Activity 4.1
	Ensure NCD questions are included in the national exit exam for health professionals	2013-2014	MOH, DPM and Department of Human Resource Development, MOH	$2,500	$2,500
Total				**2013**	**2014**
				$1,711,648	**$1,722, 967**

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