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Health Partnership Group

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**Strengthening prevention and control
of non-communicable disease**

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The Joint Annual Health Review 2014 (JAHR 2014) is the eighth annual report written in collaboration between the Ministry of Health and the Health Partnership Group (HPG). The JAHR report assesses progress in implementing tasks assigned in the five-year health sector plan 2011-2015 and results of implementing the MDGs and five-year plan goals. In addition it provides analysis on the in-depth topic of “**Strengthening prevention and control of non-communicable disease**”.

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Editorial board

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Abbreviations

ADR	Adverse drug reaction
ARV	Antiretroviral
ASEAN	Association of Southeast Asian Nations
BMI	Body mass index
CIF	Customs, insurance, freight
COPD	Chronic obstructive pulmonary disease
DALY	Disability adjusted life year
EC	Delegation of the European Commission to Vietnam
EPI	Expanded program on immunizations
GAVI	The Vaccine Alliance (formerly Global Alliance for Vaccines and Immunizations)
GDP	Gross domestic product
GMP	Good manufacturing practice
GNI	Gross national income
GPP	Good pharmacy practice
GSO	General Statistics Office
HCMC	Ho Chi Minh City
Hib	Haemophilus Influenzae B
HIV/AIDS	Human immunodeficiency virus/ Acquired immunodeficiency syndrome
HPG	Health Partnership Group
HPV	Human papilloma virus
IARC	International Agency for Research on Cancer
IEC	Information, education, communication
IHME	Institute for Health Metrics and Evaluation
IMR	Infant mortality rate
JAHR	Joint Annual Health Review
MDG	Millennium Development Goals
MICS	Multi-indicator cluster survey
MMR	Maternal mortality ratio
MOH	Ministry of Health
MOLISA	Ministry of Labor, Invalids and Social Affairs
MSA	Medical Service Administration
NCD	Non-communicable disease
NTP	National target program
ODA	Official development assistance
PPP\$	Purchasing power parity
TB	Tuberculosis
TPP	Trans Pacific Partnership

TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
U5MR	Under 5 mortality rate
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USD	US dollars
VAT	Value added tax
VND	Vietnam Dong
WHO	World Health Organization
YLD	Years of life lost to disability
YLL	Years of life lost (to premature mortality)

Introduction

Purpose of the JAHR report

As agreed upon by the Health Partnership Group (HPG) since 2007, the Joint Annual Health Review (JAHR) has the overall objective of assessing the current situation and determining priorities of the health sector in order to support annual planning of the Ministry of Health, and at the same time to serve as the basis for choosing focal issues for cooperation and dialogue between the Vietnamese health sector and international partners.

Specific goals of the JAHR include the following: (i) an update on the health sector situation, including an overview of new policies and an assessment of progress in implementation of tasks and achievement of health sector targets laid out in the health sector plans, and progress in implementing health MDGs in Vietnam and (ii) in-depth analysis and evaluation of one aspect of the health system, or one important topic that is the focus of policy-maker attention.

Contents and structure of JAHR 2014

Depending on the situation each year, the contents and structure of the JAHR report are varied to satisfy the goals and concrete requirements of health sector planning and selection of focal areas for cooperation and dialogue between the Vietnamese health sector and international development partners.

In 2007, the first JAHR report was compiled, providing a comprehensive update of the major building blocks of the Vietnamese health system, including the following topics: (i) health status and determinants; (ii) organization and management of the health system; (iii) human resources for health; (iv) health financing; and v) health service provision.

The 2008 and 2009 JAHR reports, in addition to the health system update section, covered the specific topics of *Health financing* and *Human resources for Health* respectively.

The 2010 JAHR report was developed during the final year of implementing the five-year health sector plan for the period 2006-2010, and the focus was placed on a comprehensive update of health system building blocks, in order to support development of the five-year health sector plan for 2011-2015.

The 2011 JAHR was developed in the first year of implementing the five-year plan for the period 2011-2015, and had the task of providing an update on the new orientation that was determined in the Eleventh National Party Congress, and in the five-year socio-economic development plan, in order to promote implementation of the socio-economic plan and support development of the 2012 annual health sector plan.

The 2012 JAHR was developed in the second year of the five-year planning cycle, with the task of supporting development of the 2013 annual health sector plan, through updates on new policies, assessment of progress in implementing tasks in each of the six building blocks of the health system and in-depth analysis of *Medical service quality* with related policy recommendations.

The 2013 JAHR was developed in the third year of the five-year planning cycle, with a task similar to the 2012 JAHR, but with the in-depth analysis focused on *Universal health coverage*.

The 2014 JAHR was developed in the fourth year of the five-year planning cycle, which is also the final year for nations to work towards achieving the MDGs, including five groups of goals related to health to which United Nations member countries have committed to achieving by 2015. The report has the following tasks: (i) support development of the 2015 health sector plan, provide advance information to support development of the next five-year plan for 2016-2020 and (ii) support development of the strategy for *Prevention and control of non-communicable disease (NCDs)* for the period 2015-2020.

PART ONE: *Update on the situation of the health system* has the following contents:

Chapter I: Health status and determinants

Chapter II: Update and situation assessment of the Vietnamese health system

- Key tasks of the health sector in 2014
- Implementation status of the Plan for the protection, care and promotion of the people's health 2011-2015, covering the following contents: (i) health sector governance; (ii) human resources for health; (iii) health financing; iv) pharmaceuticals and medical equipment; (v) health information systems; and (vi) health service delivery.
- Assessment of progress in implementing five-year plan targets and MDGs for Vietnam

PART TWO: In-depth analysis of the topic ***“Strengthening prevention and control of non-communicable diseases”*** with the following contents:

Chapter III: Overview of global and regional prevention and control of NCDs and epidemiology and burden of NCDs in Vietnam. This includes; (i) an overview of prevention and control of NCDs globally and in the Western Pacific Region; and (ii) NCD epidemiology and burden of disease in Vietnam.

Chapter IV: Control of common NCD risk factors including: (i) tobacco control; (ii) control of the harmful use of alcohol; (iii) promotion of an appropriate diet; and (iv) strengthening and promotion of physical activity, fitness and sports.

Chapter V: Implementation of NCD component projects of the national health target program, including: prevention and control of hypertension, cancer, diabetes, COPD/asthma and protection of mental health in the community and among children.

Chapter VI: Strengthening the health system response in NCD prevention and control with contents related to governance, health human resources, health financing, pharmaceuticals and medical equipment, health information systems for NCD surveillance and health service delivery.

PART THREE of the report consists of the *Conclusions*, a synthesis of the main findings on Vietnam's health system and the topic of Strengthening NCD prevention and control, and *Recommendations*, a set of proposed solutions for priority problems for the 2015 annual health sector plan and subsequent years and for strengthening the health system response for NCD prevention and control.

The Appendix to the report includes a summary table of monitoring and evaluation indicators covering various aspects of the health system.

Implementation methods

The methodological approaches and general requirements for developing the JAHR 2014 report included the following:

- Consideration of the socio-economic context and specific attributes of the Vietnamese health system at its current stage of reform and development; assessment of performance, progress, difficulties and shortcomings in relation to the health system goals of equity and efficiency, and specifically to the tasks that have been set out in health sector plans and strategies; and proposals for appropriate solutions.
- Identification and application of appropriate theoretical frameworks for each health system building block and for the focal topic of the report covered in a specific year, to ensure scientific objectivity in terms of perspectives and approaches, in line with on-going modernization.
- Careful attention to discussions with government officials and experts in Ministry of Health departments and administrations, in order to clarify where attention needs to be focused to ensure progress in implementing five-year plan tasks that have been assigned to each unit. Exchange of information and timely dissemination of draft reports to the Department of Planning and Finance team developing the annual health sector plan.

Specific methods used to develop the report include the following: (i) compiling and synthesizing available references, including policy documents, legislation, research studies, and surveys; and (ii) gathering and responding to feedback from stakeholders, particularly experts and officials from the health sector, other ministries and agencies and international and foreign organizations.

Compiling and synthesizing available references includes documents of the Communist Party, National Assembly, Government, Ministry of Health and other ministries; research studies and surveys; reports of ministries and sectoral agencies; specialized reviews; and materials from international and foreign agencies. The coordinators support national experts by searching for and providing relevant references and statistical data to supplement their existing information sources.

Gathering and responding to feedback from stakeholders is implemented as follows:

- Organization of eight roundtable discussions for brainstorming with experts (mainly domestic experts), and three workshops with the HPG.
- Posting draft chapters on the JAHR website (www.JAHR.org.vn) to get feedback from domestic and international experts.
- Requesting comments on draft chapters from departments, administrations and relevant units of the Ministry of Health and other related ministries and sectors.
- Sending out drafts to get feedback from peer reviewers recruited by the JAHR (management officials and experts) during the process of drafting chapters.

Organization of implementation

Similar to previous years, the JAHR 2014 was developed under the coordination and leadership of the Ministry of Health and the HPG. The organizational structure for running the report compilation process included the following:

Coordinators, consisting of representatives of the Ministry of Health, one international coordinator, one national coordinator, and several support staff, who have the responsibility to resolve day-to-day issues of management and administration; organize workshops; compile feedback gathered from various sources; ensure that the process of writing the report has the participation of many stakeholders; edit; and finalize the report.

National experts, consist of national experts with knowledge and experience related to various components of the health system, who are tasked with drafting chapters of the report, gathering feedback from stakeholders and finalizing their chapters by taking all comments and feedback into account to the greatest extent possible.

**PART ONE: UPDATE ON THE SITUATION
OF THE HEALTH SYSTEM**

Chapter I: Health status and determinants

Analysis of health status and determinants is the most important basis for determining the orientation and goals of strategies and plans for health system development. This chapter aims to analyze and assess the situation and trends in health status and determinants in recent years to provide a basis for recommendations for major orientations and measures to respond to issues in health and health determinants in the five-year health sector plan for the period 2016-2020.

1. Health status

The main content of this section includes: (i) analysis of health status through some basic health indicators; (ii) analysis of causes of the burden of disease in Vietnam; and (iii) discussion of some diseases of particular interest to policy-makers.

1.1. Basic health indicators

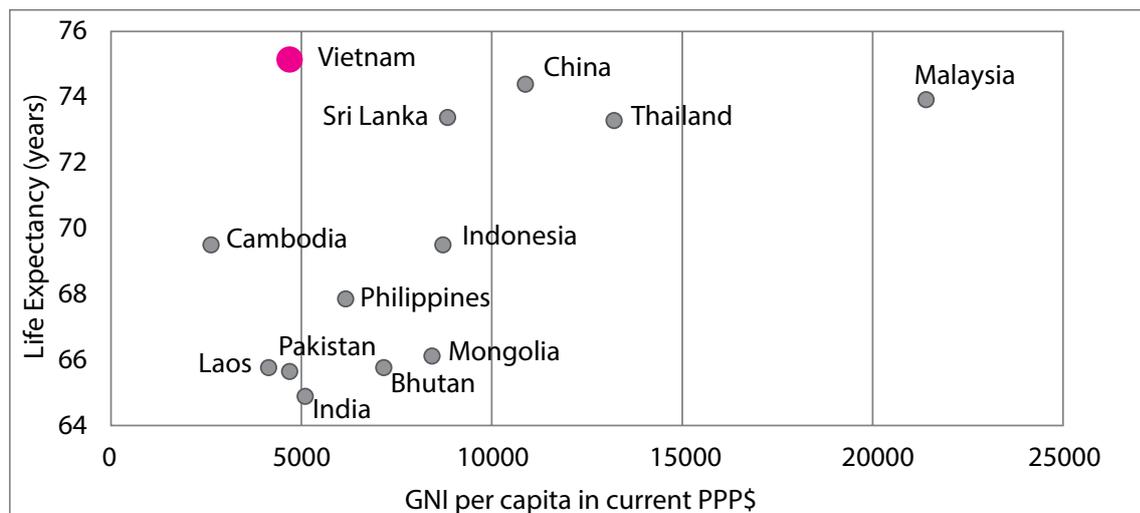
In recent years, the health status of Vietnamese people has improved considerably. Levels of many basic health indicators in Vietnam are higher than in other countries with the same level of income per capita. However, some basic indicators remain at a low level and large regional disparities in health indicators are still evident.

The following section assesses population health status through assessment of some basic indicators, including average life expectancy at birth; maternal mortality ratio; infant and child mortality rates; child malnutrition rate; and morbidity and mortality rates of certain diseases.

Life expectancy at birth

Life expectancy at birth is one of the most comprehensive indicators of population health. In 2013, according to General Statistics Office (GSO) estimates, average life expectancy in Vietnam reached 73.1 years of age. United Nations estimates indicate that Vietnam's life expectancy was the highest among Asian developing countries with similar income levels, and was even higher than some wealthier countries (Figure 1).

Figure 1: Life expectancy at birth among developing countries in Asia, mid-point in the period 2005-2010



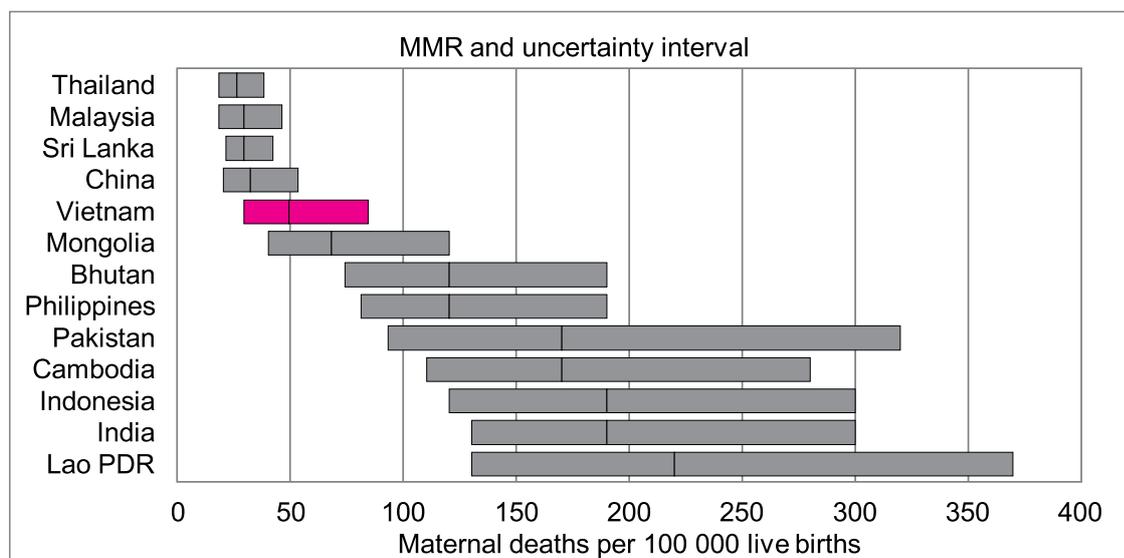
Note: The figures were estimated by the United Nations on the basis of indirect analysis methods, therefore these figures may differ from those published by the GSO. Data on gross national income (GNI) is in terms of current PPP\$, i.e. GNI is adjusted to comparable purchasing power terms to allow international comparison.

Source: Life expectancy - United Nations, Department of Economic and Social Affairs, Population Division (2013). World Population Prospects: The 2012 Revision, DVD Edition [1]. GNI - World Bank, World Development Indicators.

Maternal mortality ratio

In 2013, estimates indicate that Vietnam had a total of 690 female deaths related to pregnancy and childbirth, and the maternal mortality ratio (MMR) fell to 49 deaths per 100 000 live births [2]. Vietnam’s MMR is relatively low compared to other developing countries in Asia. Statistical data indicate that the estimated MMR in Vietnam is similar to that in Thailand, Malaysia, China and Bhutan, and lower compared to the Philippines, Pakistan and many other countries (Figure 2).

Figure 2: MMR among developing countries in Asia, 2013

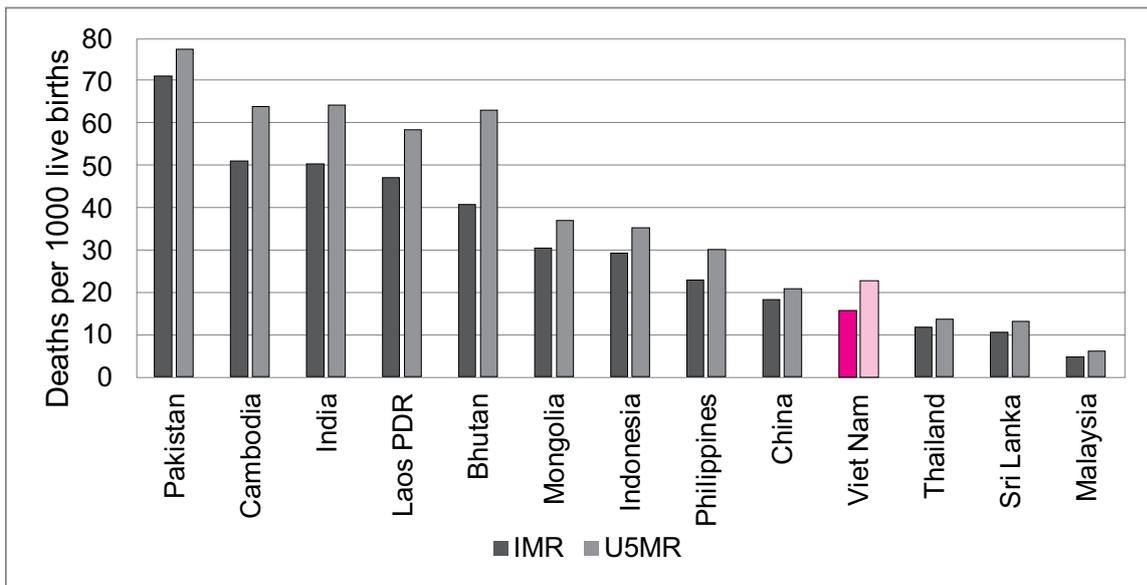


Source: WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division. Trends in Maternal Mortality: 1990 to 2013. WHO: Geneva. 2014 [2].

Infant and child mortality rates

Infant and child mortality rate estimates for Vietnam are lower than those in most developing countries in Asia (Figure 3). In 2013, the infant mortality rate (IMR) in Vietnam was estimated at 15.3 deaths per 1000 live births and the under-five mortality rate (U5MR) at 23.1 deaths per 1000 live births. Compared to China, Vietnam's IMR is lower, while its U5MR is higher. This indicates that reduction in mortality of small infants is achieving good results, but there is a need to gain deeper understanding of the cause of death in the age group 1 to 4 years.

Figure 3: IMR and U5MR among developing countries in Asia, mid-point in the period 2005-2010

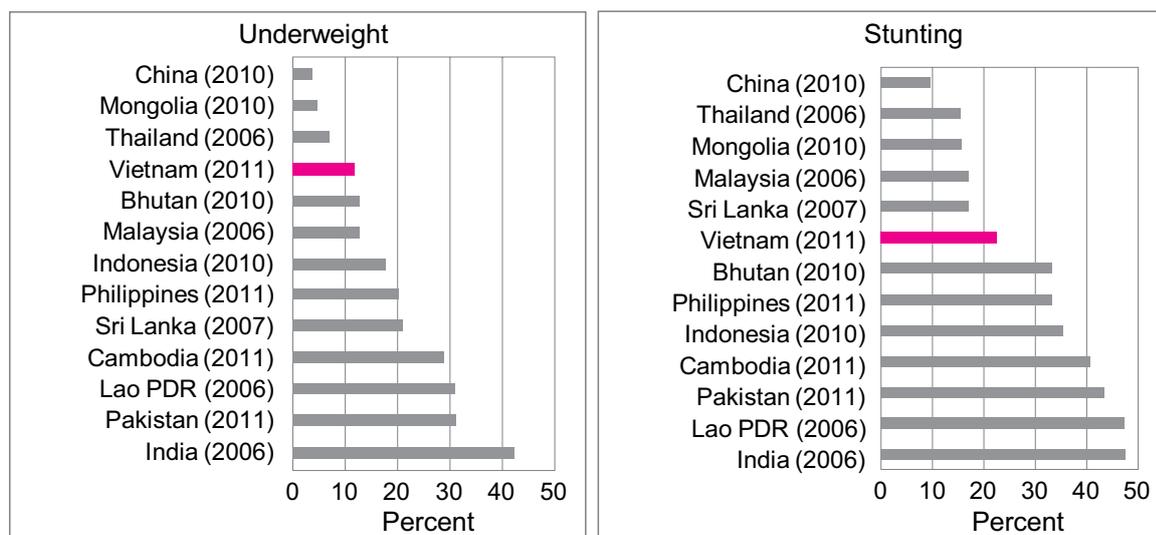


Source: United Nations, Department of Economic and Social Affairs, Population Division (2013). World Population Prospects: The 2012 Revision, DVD Edition [1].

Malnutrition rate of children under 5 years of age

In 2013, the malnutrition rate for children under age 5 in terms of being underweight was 15.3 percent and the figure for stunting was 25.9 percent [3]. Child malnutrition rates in Vietnam are relatively low compared to other developing countries in Asia. Figure 4 shows malnutrition rates ranked from lowest at the top to highest at the bottom. Vietnam ranks fourth lowest in terms of underweight malnutrition compared with comparator countries. However, in terms of stunting, Vietnam ranks sixth lowest. Child malnutrition is related to poor socio-economic conditions, illness and inappropriate feeding practices for small children.

Figure 4: Malnutrition rates for underweight and stunting among children under age five among developing countries in Asia, most recent year



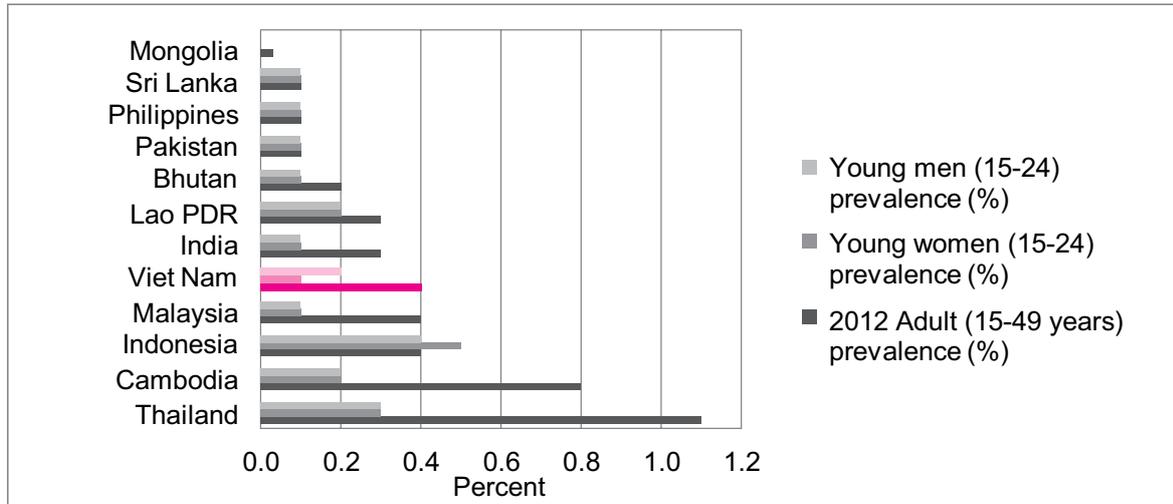
Source: UNICEF. Childinfo. Monitoring the Situation of Children and women. Last updated April 2013. <http://www.childinfo.org/malnutrition.html>; For Cambodia and the Philippines data more up-to-date figures were used from the WHO Global health observatory. Child malnutrition country estimates. WHO Global Database. <http://apps.who.int/gho/data/>

HIV prevalence

HIV is a major cause of burden of disease and a global disease priority. In Vietnam, the burden of HIV (the sum of years lived with disability and years of life lost due to premature mortality) ranks highest among communicable diseases. By 30 September 2014, Vietnam reported 224 223 people living with HIV, including 69 617 cases that have progressed to AIDS. Cumulative deaths from HIV/AIDS have reached 70 734 cases. Prevalence of HIV is estimated at 0.26 percent of the population. In recent years, the annual number of new HIV cases, the number of AIDS cases and deaths related to AIDS is reported to have gradually declined. However, the level of decline is neither rapid nor sustainable, so cumulative indicators continue to increase. In some localities, particularly mountainous, remote and isolated areas, the number of new HIV infections each year continues to increase. In addition, trends in risk factors for HIV are unpredictable and difficult to control, including injecting drug use, use of synthetic drugs, commercial sex work, and men having sex with men [4].

Figure 5 shows estimates of HIV prevalence among men and women aged 15-49 and 15-24 years. In 2012, HIV prevalence in Vietnamese adults was relatively high (0.4 percent) and comparable to Malaysia and Indonesia, but lower than in Thailand and Cambodia. HIV prevalence among males aged 15 to 24 years in Vietnam (0.2 percent) was similar to Cambodia and Laos, but lower than Indonesia and Thailand [5].

Figure 5: HIV prevalence in the group aged 15-49 years and 15-24 years among developing countries in Asia, 2012



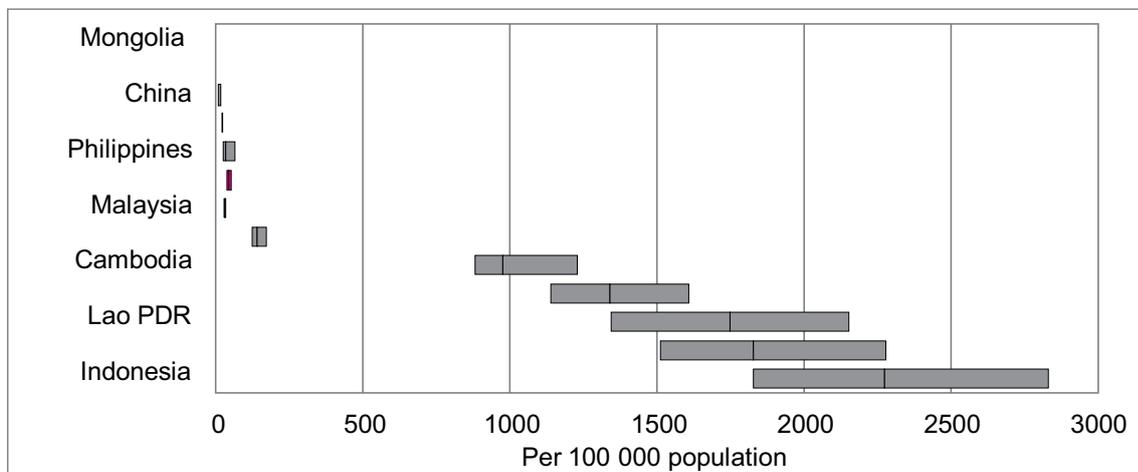
Note: For countries with prevalence below 0.1 percent, the figure indicates the level 0.1 percent. No data are available by age group for China.

Source: UNAIDS. Report on the Global AIDS Epidemic - 2013. HIV estimates 1990-2012. http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2013/gr2013/unaids_global_report_2013_en.pdf. Mongolia-UNAIDS. Country Progress Report Mongolia. Reporting period 1/1/2012-31/12/2013

Malaria morbidity and mortality

The malaria morbidity rate in Vietnam is low. In 2013, there were 33 cases per 100 000 population, ranking fifth lowest among comparator developing countries in Asia (Figure 6). Among comparator countries, Mongolia had no malaria cases since its climate is unfavorable for mosquitoes. Experience learned from the success of Sri Lanka, a leading country in malaria elimination, indicates the need to implement regular and strict interventions to prevent malaria among high risk groups, including interventions for diagnosis, treatment, and surveillance for malaria outbreaks [6]. Although malaria morbidity and mortality in Vietnam have both fallen dramatically, 37 percent of the population still lives in areas at risk of malaria and 18 percent of the population lives in areas of high risk for malaria [7].

Figure 6: Malaria morbidity among developing countries in Asia, 2012

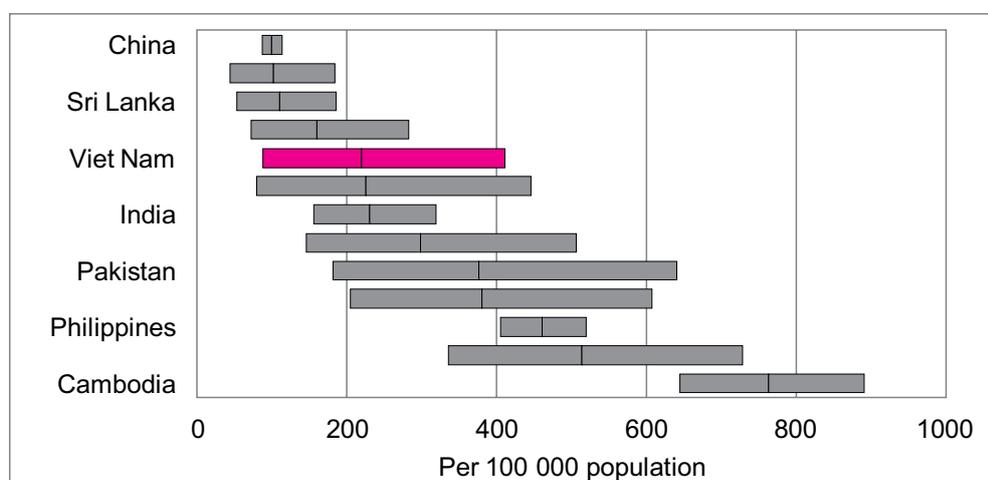


Source: World Malaria Report, 2013

Tuberculosis prevalence

Vietnam is one of 22 countries with high incidence and prevalence of tuberculosis (TB), with estimated incidence in 2013 at around 130 per 100 000 population and prevalence around 200 per 100 000 population [8]. The number of notified TB cases in Vietnam is about 100 000 and has not decreased over time [9]. High prevalence of TB cases leads to high risk of TB transmission because TB is easily spread from person to person through the air. When a person develops active TB, the symptoms may be mild for many months, which can lead to delays in seeking care, and result in transmission of the bacteria to others in close contact with the patient. The disease burden of TB ranks third highest among communicable diseases in Vietnam. From estimates given in Figure 7, we can say with certainty only that Vietnam’s TB prevalence is lower than in Cambodia and the Philippines.

Figure 7: TB prevalence among developing countries in Asia, 2012



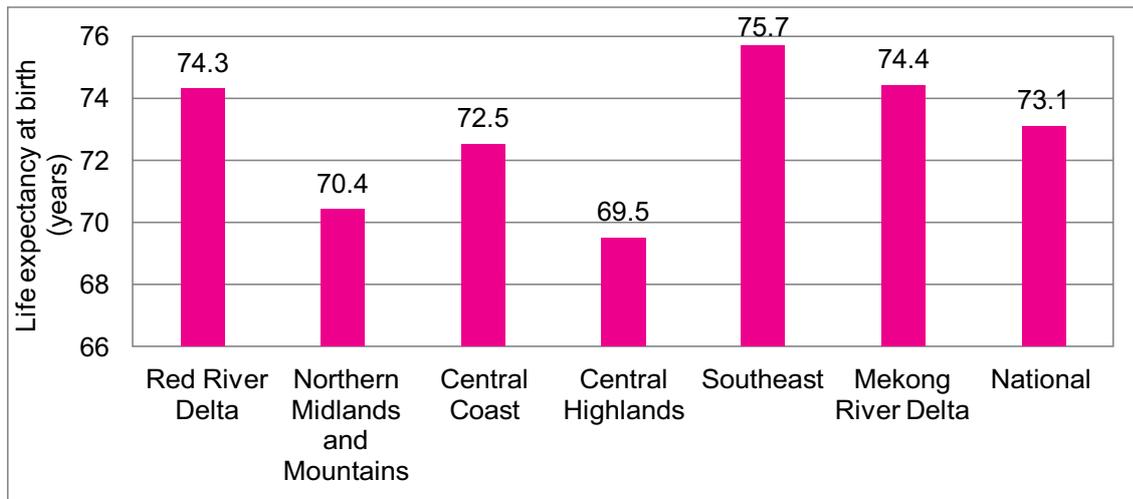
Source: WHO, Tuberculosis (TB) <http://www.who.int/tb/country/data/download/en/>

Regional disparities in health status indicators

Disparities in health status between regions and between population groups are a very big issue of concern and are shown through the following health indicators.

The gap in **life expectancy at birth** between the region with the highest level (the Southeast) and the lowest level (Central Highlands) is 6.2 years (Figure 8). The regions with the lowest life expectancy are those with difficult geographic access to health services, low population density, unsafe water and poor sanitation and high poverty rates.

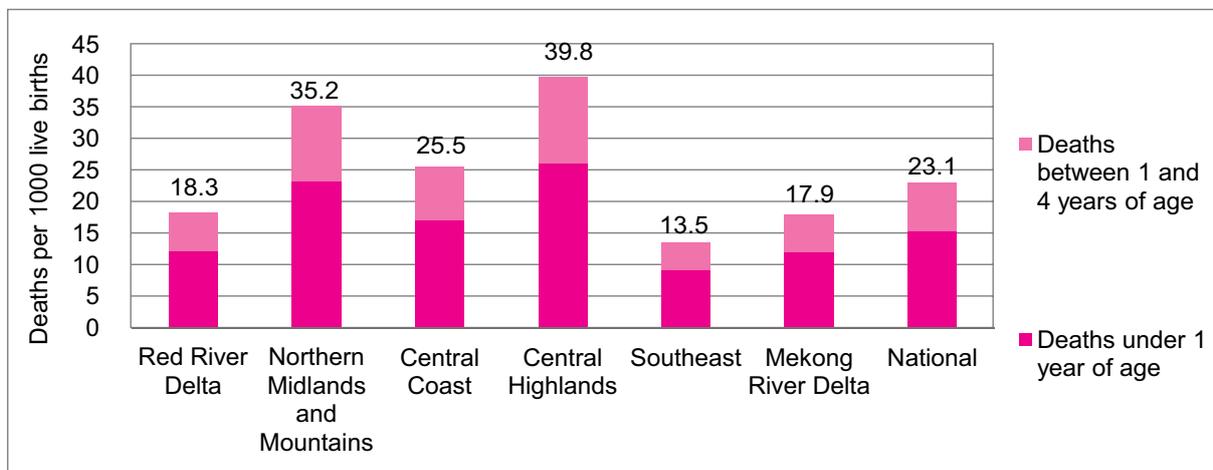
Figure 8: Life expectancy at birth by region, 2013



Source: General Statistics Office. Survey of Population Change and Family Planning 1/4/2013.

Infant mortality rate is highest in the two poorest regions, the Central Highlands and the Northern midlands and mountain areas (Figure 9). In the Central Highlands, the number of deaths to children under 1 year of age per 1000 live births was 39.8, higher by 17 infant deaths compared to the Southeast region. For children under age 5, the gap in child deaths per 1000 live births is 26, in other words, mortality of children under age 5 in the Central Highlands is three times higher than in the Southeast.

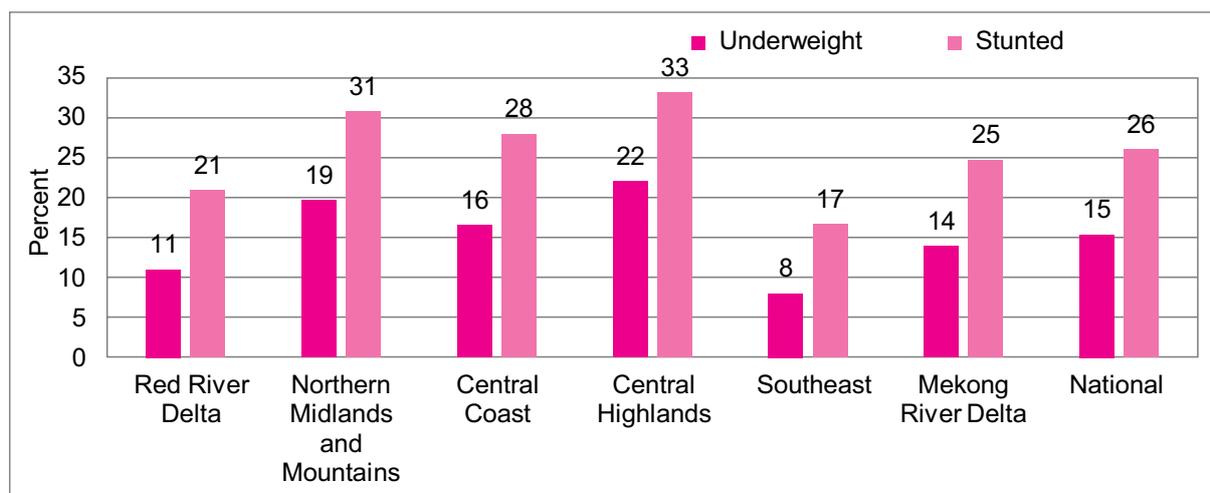
Figure 9: Mortality rate for children under age 5 by age group and region, 2013



Source General Statistics Office. Survey of Population Change and Family Planning 1/4/2014.

The malnutrition rate among children under age five was highest in the Central Highlands and Northern midland and mountain areas, a similar pattern to what is found with the infant mortality rate (Figure 10). The gap between the region with the highest and the lowest child malnutrition rates was 14 percentage points for underweight nutrition and 16 percentage points for stunting malnutrition.

Figure 10: Malnutrition rates for children under 5 years of age by type and region, 2013



Source National Institute of Nutrition. Statistical data on child malnutrition. Updated: 26/03/2014. <http://www.nutrition.org.vn/news/vi/106/61/0/a/so-lieu-thong-ke-ve-tinh-trang-dinh-duong-tre-em-qua-cac-nam.aspx>

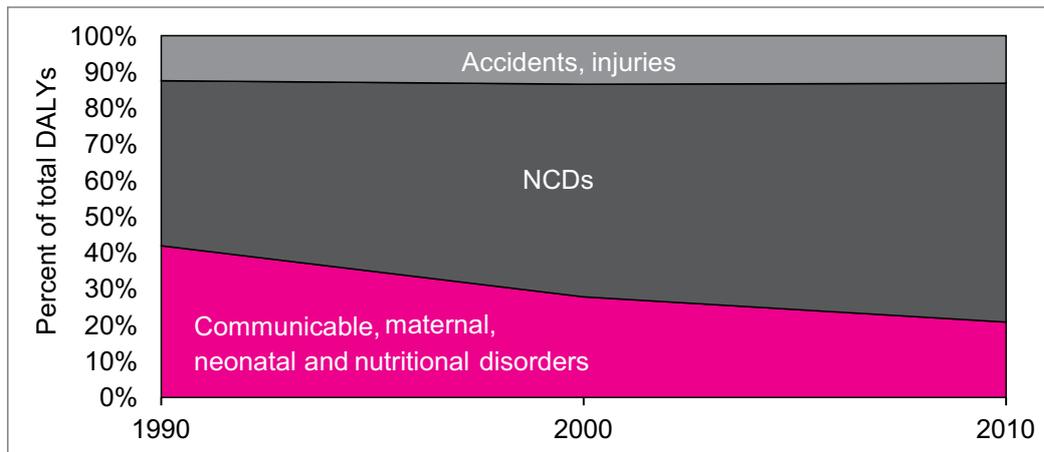
1.2. Burden of disease

Analysis of the burden of disease provides important evidence for identifying priority health issues for the development of health sector strategies, plans and policies. The Global Burden of Disease Study 2010 resulted from a research collaboration involving nearly 500 scientists in 50 countries led by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington in Seattle. It is the largest systematic scientific research to date aimed at determining the levels and trends in impaired health and years of life lost due to illness, injury and risk factors. A number of criteria used to determine the level of priority of different health issues includes deaths, years of life lost (YLL, the average years a person would have lived if he or she had not died prematurely, estimated as the number of deaths times the life expectancy at time of death for all premature deaths in the population), years lived with disability (YLD, the years of productive life lost due to illness). The main indicator of the burden of disease is the disability adjusted life year (DALY), which is the sum of YLL and YLD. Each DALY is equivalent to one year of healthy life lost. Estimates of the burden of disease are based on demographic data and studies on the morbidity and mortality rate in each country.

Changes in morbidity patterns

Data on the causes of DALYs indicate rapid changes in morbidity and mortality patterns in Vietnam between 1990 and 2010 (Figure 11). The burden of communicable diseases, maternal, neonatal and nutritional disorders decreased from 45.6 to 20.8 percent. At the same time the burden of NCDs increased from 42 to 66 percent of total DALYs. The burden of accidents and injuries was relatively stable accounting for about 13 percent of total DALYs.

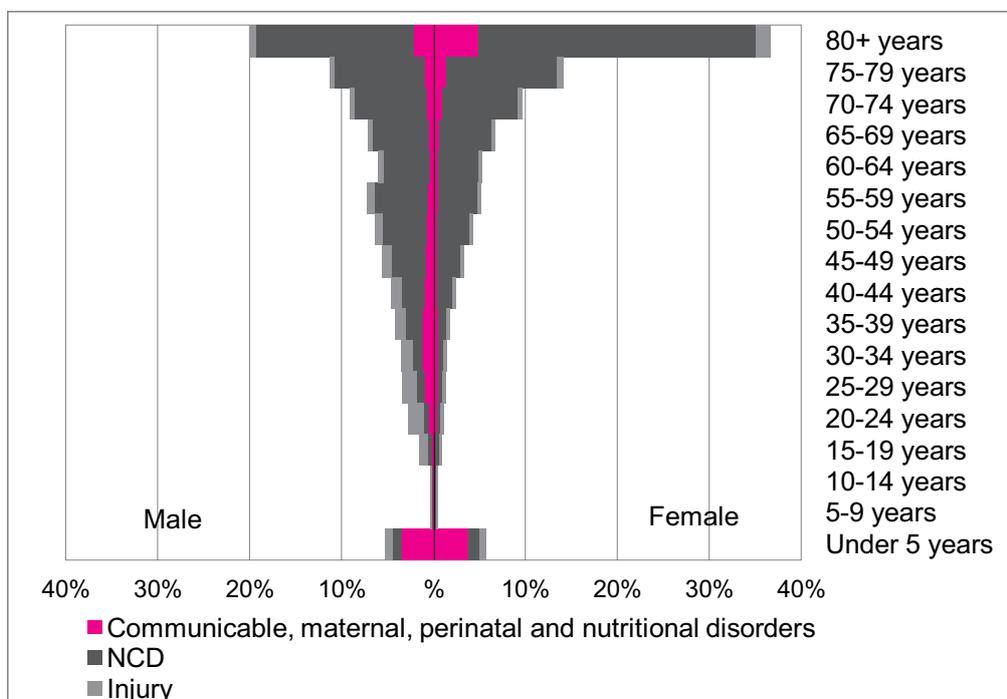
Figure 11: Trends in morbidity patterns measured in DALYs, 1990-2010



Source: Calculated using data from the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013 .

To aid in analysis of causes of death, Figure 12 describes the structure of mortality from three major causes of the burden of disease by age and sex, with males on the left and females on the right. NCDs accounted for the largest share of deaths and is mostly concentrated in the group aged 40 years and older. Among children under age five years, communicable, neonatal and nutritional disorders caused the heaviest burden. Among males aged 15 to 59 years, the share of disease burden due to injuries and communicable disease was higher than for females in the same age group.

Figure 12: Cause of death by age and sex, 2010

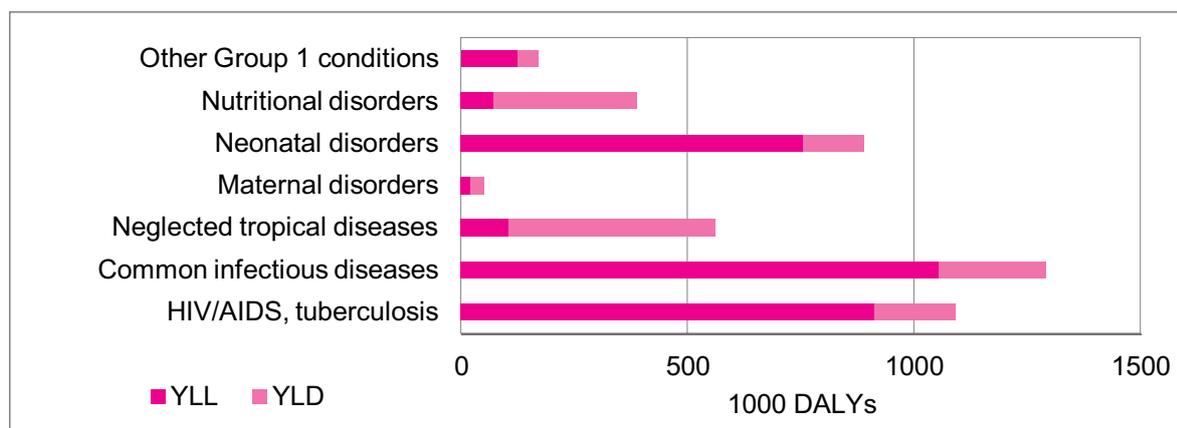


Source: Calculated using data from the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

Group 1: Communicable, maternal, neonatal and nutritional disorders

Detailed analysis of the disease burden due to diseases and conditions in Group 1 (i.e. communicable disease, maternal, neonatal and nutritional disorders) shows that the leading causes are common infectious diseases, HIV/AIDS and TB along with neonatal disorders (Figure 13). For all of these, premature mortality (rather than disability) is the largest component of burden of disease. In contrast, for neglected tropical diseases and nutritional disorders, premature mortality is lower, yet disease burden remains substantial because of a high number of years of life with disability.

Figure 13: Broad causes of disease burden in Group 1: Communicable, maternal, neonatal and nutritional disorders, 2010



Source: Calculated using data from the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

The ten most important specific causes of disease burden in Group 1 (communicable disease, maternal, neonatal and nutritional disorders) jointly account for 65 percent of total DALYs in Group 1 and 14 percent of total DALYs in all 3 groups (Table 1). Priority diseases include HIV and TB. Some health problems leading to neonatal mortality such as preterm birth complications and birth asphyxia/trauma are major causes of infant mortality and require increased attention in order to achieve the objectives of the five-year health sector plan and the Millennium Development Goals (MDGs). Some diseases in this group are somewhat neglected, including lower respiratory infections, helminths, iron-deficiency anemia, diarrheal diseases, encephalitis and meningitis, typhoid and paratyphoid fevers.

Table 1: Ten most important specific causes of disease burden in Group 1: Communicable, maternal, neonatal and nutritional disorders, 2010

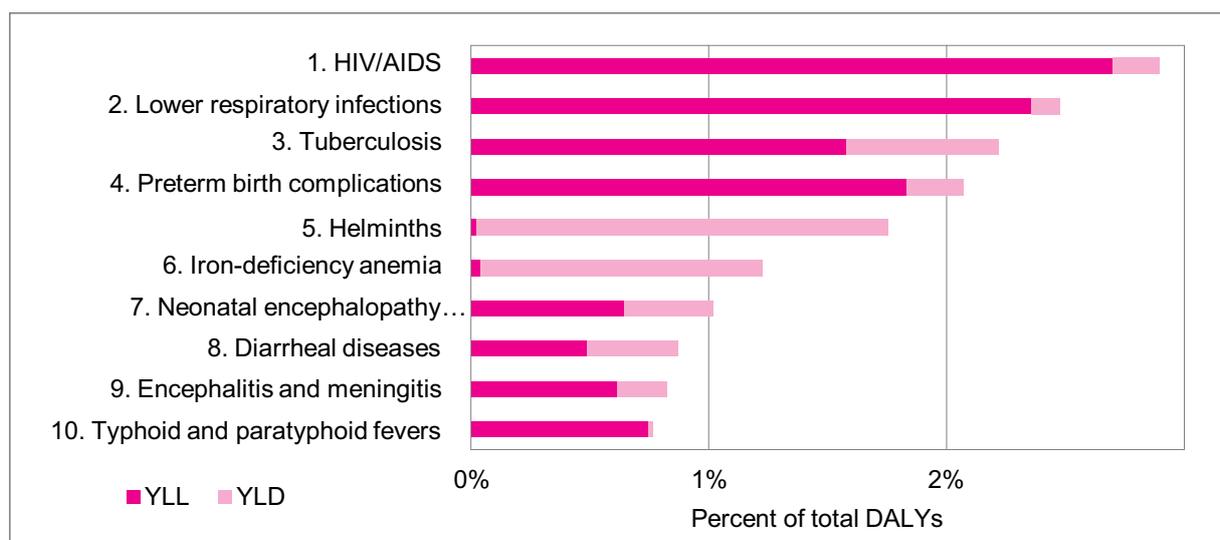
	Ten most important specific causes of disease burden in Group 1	DALYs	Percent of total DALYs
1	HIV/AIDS	618 323	2.9%
2	Lower respiratory infections	556 658	2.6%
3	TB	473 572	2.2%
4	Preterm birth complications	375 116	1.8%
5	Helminths	262 435	1.2%

	Ten most important specific causes of disease burden in Group 1	DALYs	Percent of total DALYs
6	Iron deficiency anemia	186 271	0.9%
7	Neonatal encephalopathy (birth asphyxia/trauma)	162 877	0.8%
8	Diarrheal diseases	156 402	0.7%
9	Encephalitis and Meningitis	93 521	0.4%
10	Typhoid and paratyphoid fevers	93 340	0.4%
	Total		14.0%

Source: Calculated using data from the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

Among the ten leading causes of disease burden in Group 1, helminths and iron deficiency anemia rarely lead to premature mortality, but still cause high disease burden due to years lived with sickness (Figure 14). The disease burden for the other eight diseases in this figure is due primarily to premature mortality. However, some of these diseases also lead to substantial years lived with disability such as TB, neonatal encephalopathy, and diarrheal diseases.

Figure 14: Analysis of YLL and YLD for the ten most important specific causes of disease burden in Group 1, 2010

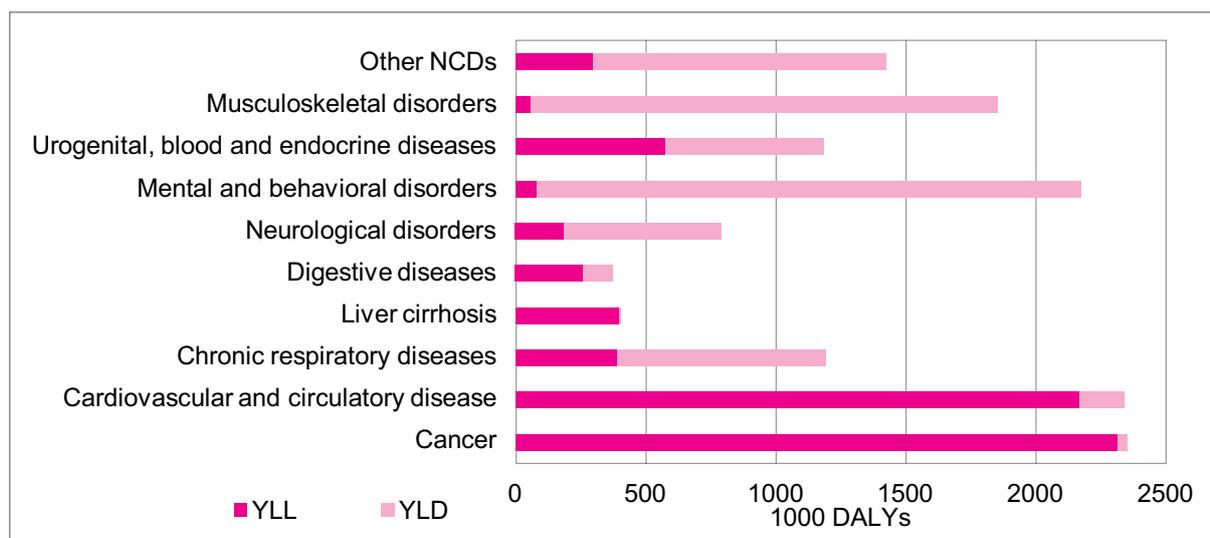


Source: Calculated using data from the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010. Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

Group 2: Non-communicable diseases (NCDs)

Group 2 (NCDs) includes 10 broad causes of disease burden, most of which contribute to disease burden due to years lived with disability (Figure 15). However, the two diseases leading to the greatest disease burden in Group 2 are cardiovascular disease and cancer, with disease burden attributed largely to premature mortality. These two are followed by mental illness and musculoskeletal disorders, whose disease burden is mainly attributed to years lived with disability, rather than premature mortality.

Figure 15: Broad causes of disease burden in Group 2: NCDs, 2010



Source: Calculated using data from the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

Analysis of specific diseases in Group 2 shows that the 10 leading causes of disease burden in this Group account for 45 percent of total DALY due to NCDs and 30 percent of total DALY of all three groups (Table 2). Prevention and control programs have been put in place to deal with COPD, cancer, and cardiovascular disease. However, these programs pay little attention to the leading specific cause of disease burden for these broad causes, such as hemorrhagic stroke. Mental disorders such as depression, despite causing a heavy disease burden, are not yet covered in implementation of the national health target programs on mental health.

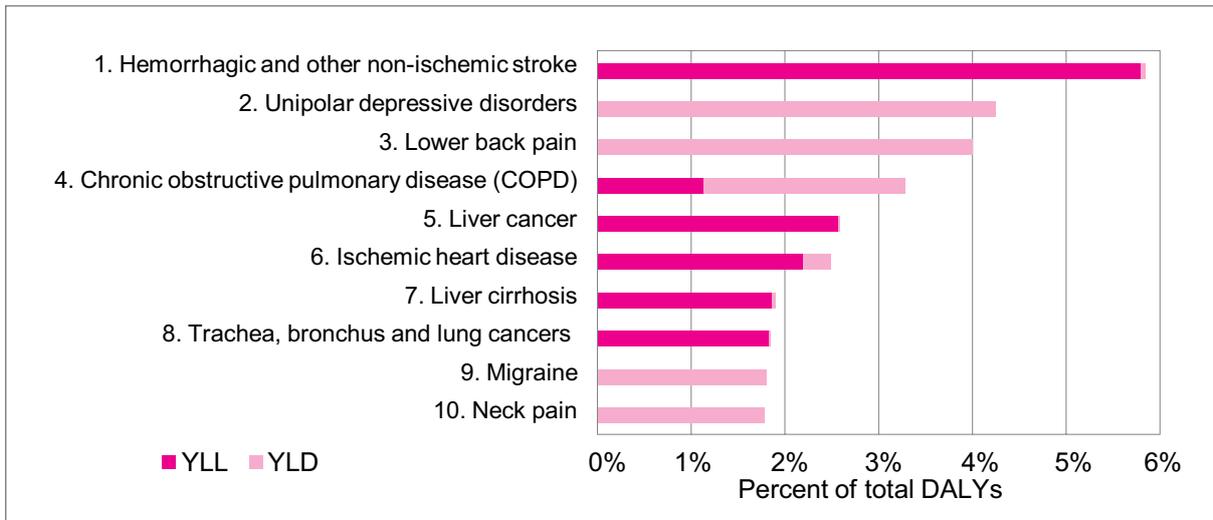
Table 2: Ten most important specific causes of disease burden in Group 2: NCDs, 2010

	Ten most important specific causes of disease burden in Group 2	DALYs	Percent of total DALYs
1	Hemorrhagic and other non-ischemic stroke	1 251 750	5.9%
2	Unipolar depressive disorders	908 353	4.3%
3	Low back pain	855 530	4.0%
4	Chronic obstructive pulmonary disease (COPD)	702 332	3.3%
5	Liver cancer	552 726	2.6%
6	Ischemic heart disease	533 058	2.5%
7	Liver cirrhosis	406 724	1.9%
8	Trachea, bronchus and lung cancers	395 655	1.9%
9	Migraine	384 240	1.8%
10	Neck pain	380 054	1.8%
	Total		30%

Source: Calculated using data from the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010. Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

Analysis of the ten leading specific causes of disease burden among NCDs indicates that five main diseases/conditions are associated with a high number of years lived with disability include depression, lower back pain, COPD, migraine and neck pain (Figure 16). The other diseases/conditions are mainly associated with disease burden due to premature mortality. The most important specific cause of disease burden in this group is hemorrhagic and non-ischemic stroke, accounting for a very large 6 percent of total DALYs (i.e. disease burden from all three groups), with the disease burden from stroke attributed almost entirely to premature mortality.

Figure 16: Analysis of YLL and YLD for the ten most important specific causes of disease burden in Group 2, 2010

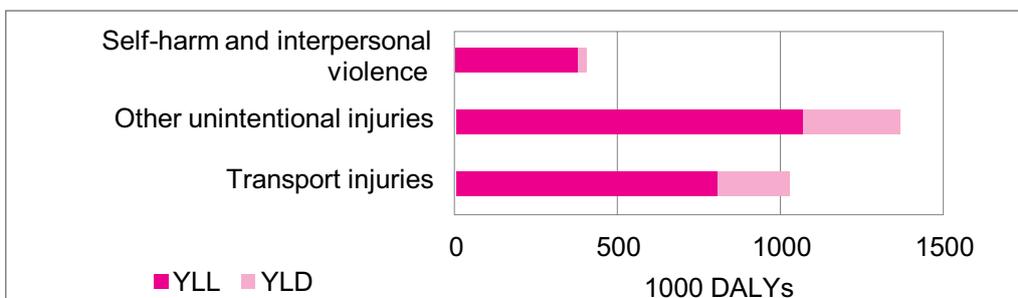


Source: Calculated using data from the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

Group 3: Accidents, injuries and poisoning

In Group 3 (i.e. accidents, injuries and poisoning), there are three broad causes of disease burden, with the category other unintentional injuries being the largest group. Self-harm and interpersonal violence contributed the least to disease burden among the three broad causes. Premature mortality contributes most to disease burden in this Group, although years lived with disability are also substantial (Figure 17)

Figure 17: Broad causes of disease burden in Group 3: Accidents and injuries, 2010



Source: Calculated using data from the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

The ten most important specific causes of disease burden related to accidents and injuries account for 75 percent of total DALYs in Group 3 and 9.7 percent of total DALYs of the three Groups of causes of disease burden (Table 3). The main specific causes in this group are road injuries, drowning, and falls.

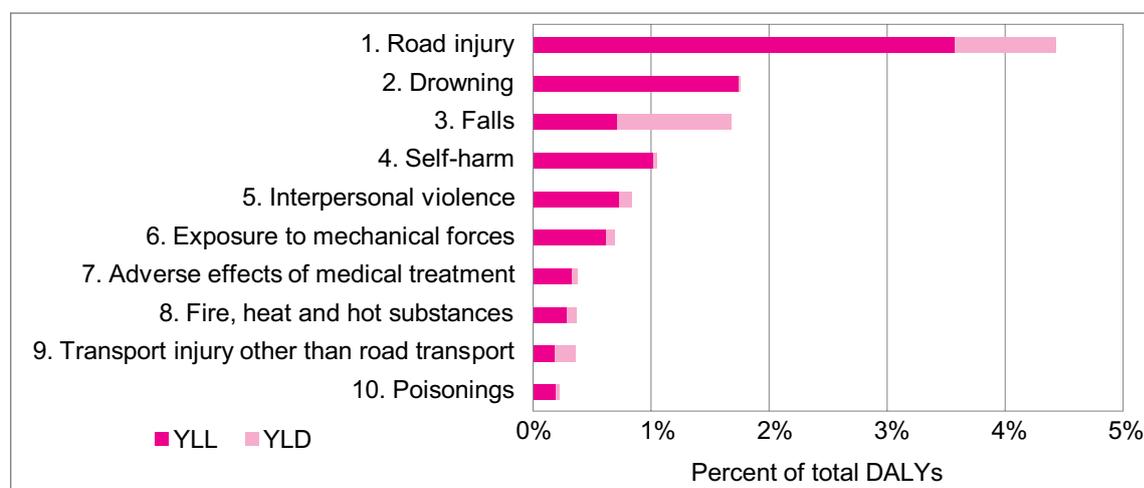
Table 3: Ten most important specific causes of disease burden in Group 3: Accidents and injuries, 2010

	Ten most important specific causes of disease burden in Group 3	DALY	Percent of total DALYs
1	Road injury	577 920	2.7%
2	Drowning	376 496	1.8%
3	Falls	359 690	1.7%
4	Self-harm	223 409	1.0%
5	Interpersonal violence	141 630	0.7%
6	Exposure to mechanical forces	108 860	0.5%
7	Adverse effects of medical treatment	80 052	0.4%
8	Fire, heat and hot substances	77 671	0.4%
9	Transport injury other than road injury	70 528	0.3%
10	Poisonings	65 658	0.3%
	Total		9.7%

Source: Calculated using data from the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

Specific causes of disease burden in Group 3 (accidents and injuries) are attributed mainly to premature mortality (Figure 18). However, road traffic accidents, falls, and other traffic accidents are also important causes of years lived with disability. Self-harm, such as committing suicide, ranks 4th highest in specific causes of disease burden in Group 3, indicating to some extent the neglect of mental health issues.

Figure 18: Analysis of YLL and YLD for the ten most important specific causes of disease burden in Group 3, 2010



Source: Calculated using data from the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010. Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

The causes of disease burden vary to some extent by sex. Of the ten most important causes of disease burden, six causes are present for both male and females, including hemorrhagic and non-ischemic stroke, lower back pain, COPD, ischemic heart disease, lower respiratory infections, and depression (Table 4). In addition to these six diseases, males have a higher share of DALYs due to road transport injuries, HIV/AIDS, liver cancer and liver cirrhosis compared to females. Meanwhile, females have a higher share of DALYs due to migraine, neck pain, diabetes, and iron-deficiency anemia compared with males.

Table 4: Ten most important specific causes of disease burden by sex, 2010

	Male	Percent of DALYs		Female	Percent of DALYs
1	Hemorrhagic and other non-ischemic stroke	6%	1	Unipolar depressive disorder	6%
2	Road injury	6%	2	Hemorrhagic and other non-ischemic stroke	5%
3	HIV/AIDS	4%	3	Lower back pain	4%
4	Lower back pain	4%	4	COPD	4%
5	Liver cancer	3%	5	Migraine	3%
6	COPD	3%	6	Lower respiratory infection	3%
7	Ischemic heart disease	3%	7	Neck pain	2%
8	Lower respiratory infection	3%	8	Diabetes	2%
9	Depression	3%	9	Iron-deficiency anemia	2%
10	Liver cirrhosis	3%	10	Ischemic heart disease	2%
	Total	37%		Total	29%

Note: Percent of DALYs calculated in relation to total DALYs for each sex.

Source: Calculated using data from the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

Analysis and comparison of the 20 most important causes of disease burden in 1990 and 2010 indicate a shift in morbidity patterns towards an increased share for Group 2 (NCDs) and a decreased share for Group 1 (communicable diseases, maternal, neonatal and nutritional disorders). Table 5 indicates causes from Group 1 in yellow, Group 2 in blue and Group 3 in gray. Trends in morbidity patterns from 1990 to 2010 are indicated by arrows in the middle column. In 1990, 11 out of 20 leading specific causes of disease burden belonged to Group 1. By 2010, only 5 Group 1 specific causes of disease burden remained in the 20 leading causes. Some diseases that were not among the 20 most important causes of disease burden in 1990 became important causes of burden of disease in 2010 including HIV/AIDS, liver cancer, liver cirrhosis, trachea, bronchus and lung cancer, migraine, neck pain, diabetes, and falls. Some diseases that previously contributed considerably to disease burden are now much less important, including birth defects, vaccine-preventable childhood diseases, diarrheal diseases, iron-deficiency anemia, meningitis, neonatal encephalopathy (birth asphyxia and trauma) and protein-energy malnutrition. Most of these diseases were the target of effective intervention programs such as immunizations, child malnutrition prevention, strengthened reproductive health, and improved drinking water supply and sanitation, which contributed to reducing the burden caused by these diseases.

Table 5: Trends in the 20 most important causes of disease burden, 1990-2010

	Cause of disease burden 1990	Percent of DALYs		Cause of disease burden 2010	Percent of DALYs
1	Lower respiratory infection	8.1%	1	Hemorrhagic and other non-ischemic stroke	5.8%
2	Hemorrhagic and other non-ischemic stroke	4.4%	2	Road injury	4.4%
3	Preterm birth complications	4.0%	3	Depression	4.2%
4	Congenital anomalies	3.7%	4	Lower back pain	4.0%
5	Childhood diseases preventable by vaccine (DPT, measles, chicken pox)	3.7%	5	COPD	3.3%
6	TB	3.5%	6	HIV/AIDS	2.9%
7	Diarrhea	3.5%	7	Lower respiratory disease	2.6%
8	Drowning	3.1%	8	Liver cancer	2.6%
9	Iron-deficiency anemia	2.7%	9	Ischemic heart disease	2.5%
10	Unipolar depressive disorders	2.5%	10	TB	2.2%
11	Road injury	2.4%	11	Preterm birth complications	2.1%
12	COPD	2.4%	12	Liver cirrhosis	1.9%
13	Lower back pain	2.2%	13	Trachea, bronchus and lung cancers	1.8%
14	Malaria	2.2%	14	Migraine	1.8%
15	Meningitis	1.7%	15	Neck pain	1.8%
16	Neonatal encephalopathy (birth asphyxia/trauma)	1.7%	16	Drowning	1.8%
17	Helminths	1.6%	17	Helminths	1.7%
18	Protein-energy malnutrition	1.5%	18	Diabetes	1.7%
19	Ischemic heart disease	1.4%	19	Falls	1.7%
20	Asthma	1.3%	20	Asthma	1.4%
	Total	57%		Total	52%

Source: Calculated using data from the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

1.3. Situation of diseases requiring particular attention

1.3.1. Epidemic diseases

Some dangerous epidemic diseases are not reflected in data on the burden of disease due to low prevalence and low mortality rate, or effective prevention through vaccines and other preventive measures, yet they remain a priority for other reasons. The diseases analyzed in this section include emerging diseases, vaccine preventable disease, diseases with strategies and plans for elimination, and some other communicable diseases.

Emerging diseases

There are many new diseases with potential for causing global pandemics or major epidemics in Vietnam due to international travel to and from countries with epidemics. This situation requires close monitoring of the global, regional and national morbidity situation, as well as at national borders; investment in human resource capacity (such as epidemiology and laboratory testing); development and updating of diagnosis and treatment guidelines; and development of a mechanism for coordination with relevant ministries and sectoral agencies to implement intervention plans when necessary. This disease group includes zoonotic diseases and global emerging diseases.

Influenza

Several types of influenza are extremely dangerous because they are new strains of influenza and may be highly fatal. There is currently an influenza A (H7N9) epidemic in China, but there have not yet been any cases reported in Vietnam. In 2014, the first human case of influenza A (H5N6) was found in China, while in Vietnam influenza A (H5N6) has been found in poultry in several provinces¹. Two other types of influenza epidemics found in humans in Vietnam are influenza A (H5N1) and influenza A (H1N1).

In 2009 the World Health Organization (WHO) reported an outbreak of influenza A (H1N1) stemming from swine. According to data from WHO, based on Vietnam's health reports, in 2009 there were 685 cases and 50 deaths from influenza A (H1N1) (Table 6). In 2010 the figure dropped to 92 cases. However it increased to 685 cases in 2011. The figure for 2013 was 341 cases and in the first 35 weeks of 2014 some 82 cases were reported. Deaths from influenza A (H1N1) were mostly related to comorbidities with chronic diseases.

Avian influenza A (H5N1) has been reported since 2003. Every year from 2009 to 2014, there were less than 10 cases confirmed by laboratory testing in Vietnam. The people who contracted or died from this disease had a history of contact with sick or dead poultry without any epidemiological links. No human-to-human transmission cases have been reported.

Table 6: Influenza situation, 2007-2014

Type of influenza	Unit	2007	2008	2009	2010	2011	2012	2013	2014 (35 weeks)	Source
Influenza A(H1N1)	Cases	.	.	685	92	685	9	341	82	WHO-FluNet. (Laboratory confirmed)
	Deaths	.	.	50	11	.	.	.	.	MOH (Reported cases)
Influenza A(H5N1)	Cases	8	6	5	7	.	4	2	2	MOH (Reported cases)
	Deaths	5	5	5	2	.	2	1	2	MOH (Reported cases)

Note: '.' indicates missing information.

¹ The term province in this report refers to 58 provinces and 5 central level municipalities consisting of Hanoi, HCMC, Hai Phong, Da Nang and Can Tho. When discussing only the municipalities, the term municipality will be used.

Middle East respiratory syndrome coronavirus (MERS-CoV)

The disease caused by MERS-CoV is spread from person to person primarily among those with close personal contact. People infected with the disease have symptoms of acute respiratory infection such as fever, cough, severe pneumonia, and respiratory failure. Additional symptoms can include digestive tract problems like diarrhea and organ failure, especially kidneys, with high risk of death. According to WHO, globally up till 21 November 2014, 909 cases and 331 deaths due to MERS-CoV have been reported in 20 countries. All cases so far were related to and had their origin in six countries of the Arabian peninsula. Currently, Vietnam has not yet registered any cases. The Ministry of Health has issued an action plan for the prevention and control of MERS-CoV.

Ebola virus

According to the latest report from the WHO, up to 21 November 2014 the current Ebola outbreak in West African countries is the largest ever seen. WHO is closely monitoring the progress of the Ebola epidemic and has announced a state of emergency on the Ebola virus worldwide. Some 5459 deaths have been reported among 15 351 cases (confirmed, suspected and probable) of infection, mainly in the Republic of Guinea, Liberia, and Sierra Leone. With the current tense situation, WHO recommends that countries whose citizens travel to pandemic countries in Africa must require strict medical checks before travelling home. This can help to minimize the spread of the Ebola epidemic. Vietnam is warning the population through the mass media, preparing plans for prevention and implementing measures to closely monitor incoming travelers at border gates and airports, in order to implement preventive measures, especially for people coming from countries with the Ebola epidemic. In addition to strict monitoring at national borders, epidemic scenarios have been considered and treatment protocols have been developed in order to be prepared to provide immediate treatment for the first potential patient.

Inflammatory palmoplantar hyperkeratosis syndrome

There have been 231 cases of inflammatory palmoplantar hyperkeratosis syndrome in two out of seven communes of Ba To and Son Ha districts in Quang Ngai province since the first case was detected in April 2011. In early 2014 one case of relapse and one newly detected case were found [10]. The Quang Ngai Provincial Health Bureau has strengthened health information and health promotion campaigns, especially focused on regular screening for early detection of new cases and timely treatment to limit the risk of death to patients. The Ministry of Health has developed guidelines for diagnose and treatment of inflammatory palmoplantar hyperkeratosis syndrome.

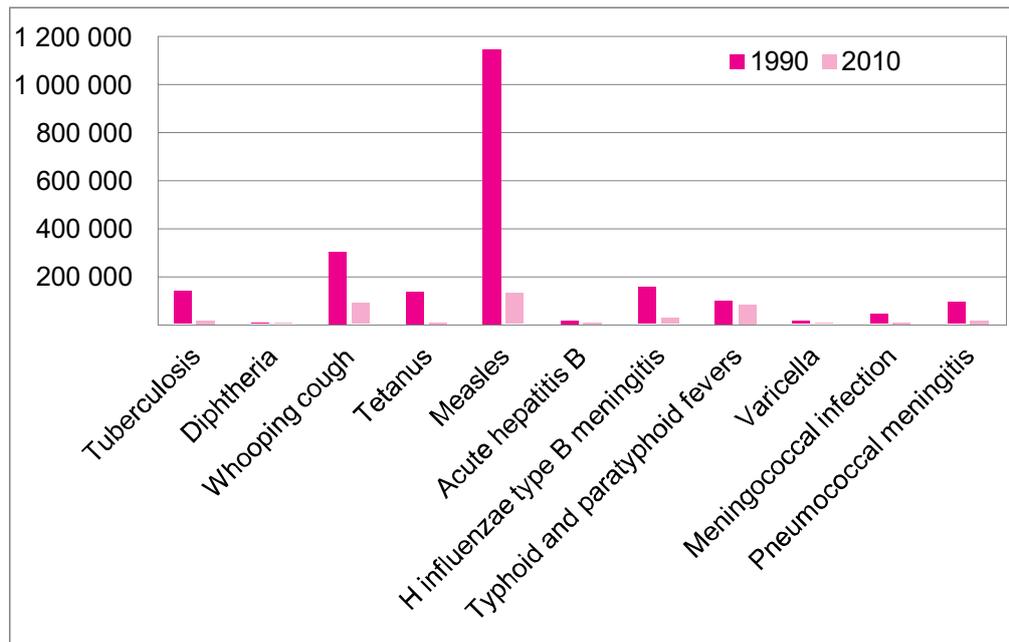
Vaccine preventable diseases

Vaccination is one of the most effective preventive medicine interventions and is also an important measure for disease eradication, such as for polio and neonatal tetanus. In 1985, the Expanded program on immunizations (EPI) included six vaccines, for prevention of TB, diphtheria, pertussis, tetanus (DPT), measles, and polio. Four new vaccines have been introduced free-of-charge into the EPI, namely hepatitis B vaccine for all newborns and Japanese encephalitis B vaccine, typhoid vaccine, and cholera vaccine for endemic areas starting in 1997. In June 2010, *Haemophilus influenzae* B vaccine (Hib) for prevention of severe pneumonia and meningitis caused by *H. influenzae* B was included as one of the components of the pentavalent

vaccine (HBV-Hib-DPT) introduced for national implementation. There are currently 11 free vaccines included in Vietnam’s EPI. There are also a number of other vaccines, which are not currently subsidized by the state, such as vaccines against rubella, meningococcal infection,² pneumococcal infection,³ chickenpox (varicella), human papilloma virus (HPV) and seasonal influenza vaccine. In addition, there are a number of vaccines for prevention of diseases in animals, which have an important impact on the prevention of human diseases, including rabies vaccine and influenza vaccine for poultry and pigs, under management of the agricultural and rural development sector.

The burden of vaccine preventable diseases in under-five children has decreased substantially from 1990 to 2010 (Figure 19). On the left of the figure are the diseases for which vaccines have been free over many years. On the far right are three diseases for which vaccines have not yet been introduced for free in the EPI. There is a declining trend in the disease burden even for those diseases since there are many other factors affecting disease incidence beside vaccines, for example reductions in child malnutrition, increased access to safe drinking water and basic sanitation and health insurance (which increases people’s access to health services).

Figure 19: Burden of disease due to vaccine preventable diseases among children under age 5, 1990-2010



Source: Calculated from data of the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

Measles

Measles is a highly contagious disease spread through exposure to an infected person when coughing and sneezing. When a person is infected with measles, 90 percent of people who have close contact with this person will be infected if they are not immune through measles infection or have not been vaccinated against measles. The main symptoms of measles include

² Neisseria meningitidis or meningococcus

³ Streptococcus Pneumoniae or pneumococcus

high fever, rash and cough. The measles virus reduces the body's immune system and lead to secondary infections such as pneumonia, rhinitis, blindness, diarrhea, and encephalitis. More than 30 percent of measles cases have one or more complications.

From mid-2013 to 18 June 2014, Vietnam recorded 31 300 cases of suspected measles, 5500 confirmed cases and 145 deaths from measles [11]. This disease occurs mainly in those under 10 who are not yet vaccinated against measles or are not given adequate doses of the vaccine in areas where the measles vaccination rate was low in previous years or areas with substantial population mobility. The Ministry of Health has been implementing plans for measles booster vaccinations. The target groups include children from nine months to two years of age who are not yet vaccinated against measles, and children aged 18 months to two years who have already received a shot of measles vaccine. To ensure full vaccination, localities have reviewed a list of all the target children to be vaccinated in the area, including those temporarily present or absent from the area. Special attention is being paid to ensure coverage in remote and isolated areas, border areas and areas with substantial population mobility.

Rubella

Rubella is an acute infectious disease that usually does not entail serious complications. However rubella infection during pregnancy, especially in the first 12 weeks of pregnancy, can lead to severe birth defects due to congenital rubella syndrome.

According to incomplete reports, the total number of rubella cases increased compared to five years ago. In some pediatrics hospital, the number of children with congenital rubella syndrome has also increased compared with previous years. From 2004 to 2011 Vietnam continuously recorded rubella outbreaks with a total of over 3500 cases. Over 90 percent of children with congenital rubella syndrome have complex disabilities affecting their health, including congenital heart defects, deafness, cataracts, enlarged spleen, intellectual disability, hepatomegaly and others.

In order to reduce the burden of congenital rubella syndrome, gradually eliminate rubella and improve health for Vietnamese children, the EPI is implementing free rubella-measles vaccination campaigns from October 2014 to February 2015 for more than 23 million children aged 9 months to 14 years throughout the country.

Pneumonia, meningitis and diarrhea of bacterial and viral origin

The *Streptococcus pneumonia* (pneumococcus), *Haemophilus influenza*, and *Neisseria meningitidis* (meningococcus) bacteria are major causes of pneumonia and meningitis. Rotavirus is a leading cause of diarrhea in children. There are vaccines against these four microbes, but they are not yet included in the EPI. Currently only higher income families have the means to pay for these vaccines, which are provided for a fee.

According to statistics in public health facilities, acute respiratory infection in children is the leading cause of hospital visits and admissions and is one of the main causes of mortality in children. Children suffer from acute respiratory infections 4 to 5 times a year on average. The most common bacterium causing pneumonia in children is *S. pneumonia*, accounting for approximately 30 to 50 percent of cases. *H. influenzae B* (Hib) is the second leading cause with about 10 to 30 percent of cases [12].

Meningitis is an infection of the protective membranes covering the brain and spinal cord caused by a number of different bacteria. Among these, three common bacteria include Hib, *N. meningitidis* and *S. pneumonia*. In Vietnam, the causative agent of bacterial meningitis in children is mainly Hib [13].

According to health statistics in Vietnam, the causative agent of acute diarrhea that require hospital admissions is rotavirus and 95 percent of children are infected with rotavirus at least once before age five [14].

According to the Global Burden of Disease Study 2010, an estimated 261 deaths among children under five were from meningitis related to these 3 bacteria. Another 3139 children died from pneumonia and 470 child deaths were from diarrhea in the same years. Up till now there is no regular source of information on incidence of these diseases nationwide.

Dangerous acute diarrhea (cholera)

After many years of successful control, cholera broke out again in 2007 with an incidence rate of 2.24 per 100 000 population. During the period 2000-2009, the North recorded a total of 8304 cases of cholera, up to 6 times higher than over the period from 1990 to 1999 (1194 cases). In 2010 alone there were 317 cholera cases (with no deaths) in 18 localities; 301 cholera patients were Vietnamese and the other 16 were Cambodian. From late 2012 to early 2014, Vietnam recorded no cases of cholera, but recently HCMC has recorded a number of cases of acute diarrhea with suspected cholera. Monitoring of acute diarrhea is implemented regularly throughout the country. Diarrhea is the 7th leading cause of the burden of disease in children under 15 years of age [15].

Infectious diseases with plans for eradication or elimination

Some diseases could potentially be eradicated in Vietnam. Polio was eradicated in 1997 and neonatal tetanus in 2005. Vietnam currently has plans to eliminate other diseases such as leprosy and Japanese encephalitis by 2015, measles by 2017, rabies by 2020, and malaria by 2030 [16]. Japanese encephalitis and measles are analyzed in the section on vaccine preventable diseases. This section mainly analyzes the situation of leprosy, malaria, and dengue fever.

Leprosy

Leprosy is a chronic infectious disease caused by the bacteria *Mycobacterium leprae*. However if leprosy is not detected and treated promptly, it can lead to disabilities and serious sequelae. These have led to fear and misconceptions about leprosy. Vietnam is striving to eradicate leprosy.

In 2000, there were 1477 new leprosy cases. By 2012 there were only 296 newly detected leprosy cases. The proportion of leprosy cases with disability of grade 2 in 2000 was 21 percent. This figure dropped to 14.86 percent in 2012 [17]. Up through the end of 2013, some 52 out of 63 provinces checked and verified leprosy eradication status according to Vietnam's four eradication criteria. Provinces that have not yet implemented this checking include Quang Ngai, Binh Dinh, An Giang, Kien Giang, Binh Phuoc, Tay Ninh, HCMC, Ninh Thuan, Binh Thuan, Gia Lai and Kon Tum.

In reality, leprosy can be completely cured and leave no sequelae if leprosy cases are detected early and treated promptly. However, screening and examination of leprosy in the community is not easy to implement and patients might be left out. To confirm detection of all leprosy patients in the community, at least 20 percent of the population needs to receive skin examination continuously for 3 years. Stigma against leprosy patients is still heavy in areas with many ethnic groups, different languages, and different lifestyles, causing difficulties for effectiveness of health IEC on leprosy for the community.

Rabies

Rabies is a disease caused by the rabies virus. This is an acute viral infectious disease of the central nervous system and easily causes death. Vietnam is recognized by WHO as one of the countries with high risk of rabies. According to recent research, Vietnam ranks 14th in the world in terms of mortality from rabies. In 2011, there were 100 deaths from rabies. The figures for 2012 and 2013 were 98 and 102 deaths respectively. Rabies is very dangerous because once rabies symptoms appear, the mortality rate is nearly 100 percent.

People who are bitten by an animal suspected to have rabies should be treated immediately with vaccine and anti-rabies serum. In 2000, a total of 568 166 people were bitten by an animal and vaccinated against rabies. The figure for 2011 was less, but still high at 394 300 people [18]. In the first 5 months of 2014, 160 731 people were bitten by dogs and 28 people died from rabies. The total cost for rabies vaccine and anti-rabies serum amounts to more than 300 billion VND per year. Deaths from rabies mainly occur in the North, with approximately 80 percent of total deaths nationally. According to surveys, more than 50 percent of deaths from rabies are due to low awareness in the population. People know that if they are bitten by a dog, they need to be vaccinated. However, they do not get vaccination because they tend to think that the dog may be free from rabies. Just over 20 percent of the population, mostly people living in rural areas, has no awareness about rabies [19]. The Ministry of Agriculture and Rural Development is responsible for the national program to control and eventually eradicate rabies in 2011-2015. This program includes interventions to manage dogs and eradicate rabies in animals through vaccination according to Decision No. 2731/QĐ-BNN-CO dated 7 November 2011.

Malaria

Malaria is a disease caused by a parasite called plasmodium. This disease can be transmitted from one person to another when they are bitten by Anopheline mosquitoes. Plasmodium falciparum (the species capable of causing malignant, multi-drug resistant malaria), accounts for 55-60 percent of malaria cases in Vietnam. People with cerebral malaria often show neurological symptoms such as abnormal behavior, eye twitch or coma.

The malaria situation in Vietnam has improved substantially in recent years. During the peak malaria outbreak period 1991-1992, there were over 1 million cases. In 2013, this figure had fallen to less than 30 000 cases with 6 deaths from malaria [20]. Malaria is generally under control and continues to be pushed back.

However, the above achievements are not considered sustainable because of the threat of P. falciparum drug-resistant malaria parasites and mosquitoes resistant to insecticides. In addition, the grassroots health network does not yet manage all malaria patients. Migrants to major malaria epidemic areas are outside the control of the health care system. There is also

not yet a feasible measure to prevent malaria in this population group. Ethnic minorities and residents of remote and isolated areas have low awareness of self-protection from malaria. An estimated 34 million people still live in areas with risk of malaria, 11 million of these live in areas with high risk of malaria, especially in mountainous, coastal, remote and brackish water areas and areas with ethnic minorities. (See Chapter II, Section 3 on assessment of progress towards the MDGs for more details on malaria).

Dengue fever

Dengue fever and the most severe manifestation of the disease - dengue shock syndrome - are caused by one of four close but different serotypes of the virus. Infection with the virus can lead to lifelong immunity, but only against that particular serotype. Therefore, people living in dengue-endemic areas could be infected with this disease more than once in a lifetime. Dengue virus infection may manifest as a non-specific viral infection syndrome or severe hemorrhage that can lead to death. In recent years this disease has become a major concern for the global health community. The geographical spread of dengue vectors (several types of mosquitoes) has led to increasing dengue prevalence in the last 25 years, as well as the possibility of epidemic outbreaks due to many different serotypes in tropical metropolitan areas.

Dengue prevalence in Vietnam fluctuates widely over the years. Dengue fever outbreaks usually occur in cycles of 3 to 5 years. Dengue incidence per 100 000 population has fluctuated widely from 2010 to 2012: 148.1 in 2010, 80.4 in 2011, 94.2 in 2012, and 91.6 in 2013. There were 113 deaths from dengue fever in 2010 and 60 deaths in 2013 [20]. Over 85 percent of dengue cases and 90 percent of deaths from dengue occurs in provinces in the South of Vietnam. Approximately 90 percent of deaths from dengue fever are to people under 15 years of age. Vietnam has been successful in controlling the case fatality rate from dengue fever at less than 1 death per 1000 patients since 2005.

However, Vietnam has not achieved much success in reducing dengue fever prevalence. A shortage of safe water supply in rural areas, unsanitary housing conditions plus lack of water supply and poor wastewater treatment systems in rapidly expanding sub-urban areas means that people have to store water in or near their house for use. This increases the density of dengue vectors. The epidemiological situation is becoming worse due to limitations of the health system in control of the spread of *Aedes aegypti* mosquito.

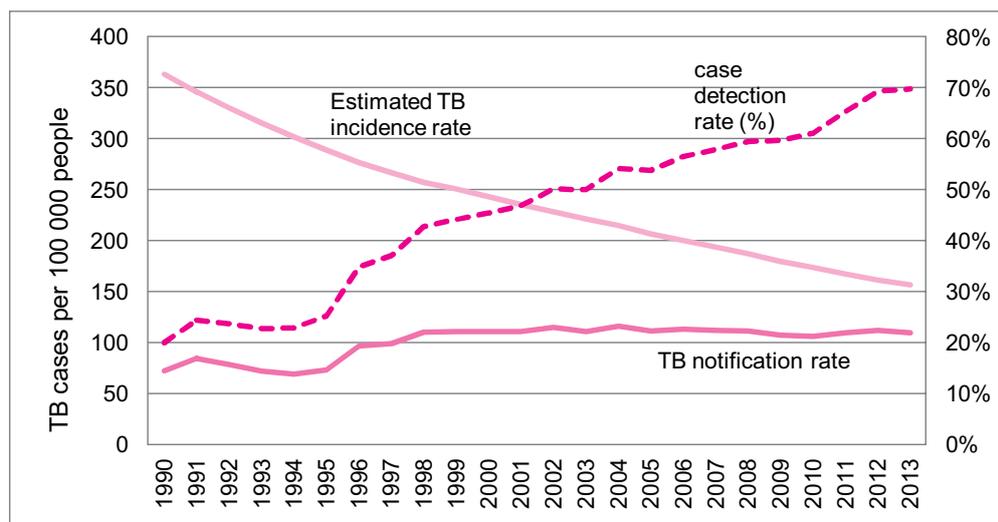
HIV/AIDS

The estimated number of people infected with HIV/AIDS in 2014 was approximately 260 000 people. It is estimated that every year there are about 12 000 to 14 000 new HIV infections [21]. In 2014, 2000 to 3000 deaths from HIV/AIDS were reported, a decline from the 7000 to 8000 reported deaths per year in 2009. Sexual transmission of HIV is increasing as a share of new cases, from 20 percent in 2007 to 45 percent in 2013. The proportion of all people living with HIV/AIDS in the age group 20 to 29 has declined from 50.8 percent to 32.9 percent, while the proportion in the ages 30 to 39 has increased from 35.2 percent to 45.1 percent during the period 2007 to 2013. The proportion female among new HIV/AIDS infections has increased, from 24.2 percent of all cases in 2007 to 32.5 percent in 2013 [22]. (See the section on Implementation of the MDGs for more details).

Tuberculosis (TB)

TB prevalence is estimated to have decreased over time. However, the TB notification rate has remained almost unchanged, even slightly increasing in recent years (Figure 20). If the prevalence estimates are correct, this means the case detection rate (notified cases divided by estimated prevalence) is improving rapidly, a necessary condition for success in reducing TB prevalence, because undetected TB patients can continue to transmit the disease to others.

Figure 20: Trends in estimated TB prevalence, notifications and case detection rate, 1990-2013



Source: TB estimated prevalence rate is from WHO data. TB prevalence based on notifications comes from MOH Health Statistics Yearbook. Percentage of cases detected equals notifications divided by estimated prevalence.

Among TB patients detected in the community, the proportion who are infected with new pulmonary TB and cured is relatively high. However, TB relapse is common among multi-drug resistant TB patients. According to WHO estimates, the proportion of TB patients who die each year is 9 percent. This rate is very high compared with other countries in the region.

Communicable diseases causing substantial disease burden

Helminths

Parasitic diseases (such as flukes, roundworms, tapeworms) are a common public health problem in Vietnam and rank 5th among specific causes of disease burden, mainly due to the high number of years living with the disease. Most surveys to date show that there are disparities in the helminth infection rate across regions. Helminth prevalence in the North is higher than in the South (ranging from 10 to 90 percent). Hookworm disease causes anemia. Hookworm is widespread nationally and hookworm prevalence depends on soil conditions. The helminths prevalence rates in the Red River Delta, Northern midlands and mountain areas, the Central Highlands, and in the South are 30 percent, 85 percent, 47 percent, and 68 percent respectively. Prevalence is lowest in the Mekong River Delta, at only 10 percent. Helminths can cause acute consequences such as pain, bowel obstruction, anemia, dehydration, or long term consequences like malnutrition, slow physical development, micronutrient deficiencies, fatigue, mental retardation, and low birth weight. Trematodes (flukes) can cause severe diseases in the liver, lungs, and brain.

Parasitic diseases transmitted from animals to humans (such as seafood, pork) play an important role with high prevalence and heavy burden in the community. Helminths transmitted through the ground are widespread nationwide. Favorable conditions for the growth of helminths include lack of hygiene in food processing, lack of safe water or food, poor environmental sanitation and personal hygiene, and habits of eating unprocessed food, all of which are widespread in Vietnam. As a result, the risk of parasitic infection transmitted through food is very high and widespread across the country. Parasitic zoonoses are an issue of great concern in Vietnam today [23]. There should be a comprehensive and further study on this issue.

Hepatitis

Hepatitis is an infectious disease caused by a virus attacking the liver, which can cause acute (Hepatitis A and E) and chronic disease (Hepatitis B, C, and D). In 2005 there were 8.4 million people with hepatitis B. It is forecast that the figure for 2025 will be 8 million cases, with 40 000 deaths [24]. Hepatitis B and C, like HIV, are spread through contact with blood or other body fluids of infected patients. Hepatitis A and E are transmitted through unsafe water and food and have lighter health impacts. The likelihood that Hepatitis B virus infection becomes chronic depends on the age at which a person is infected. Hepatitis B virus infection in children under age six is more likely to become chronic. Specifically, 80 to 90 percent of infants infected with hepatitis B will be infected with the chronic virus. Some 30 to 50 percent of children infected with hepatitis virus B before age six will be infected with chronic disease. The severity of hepatitis B and C ranges from a mild illness lasting for a few weeks to a serious long-term condition that can lead to liver cirrhosis or liver cancer.

Hepatitis B vaccine has been used since 1982 and is 95 percent effective in preventing infection of Hepatitis B and its chronic consequences. There is not yet a vaccine against hepatitis C, however this disease can be treated with antiviral drugs, but access to treatment in Vietnam is limited.

Hand, foot, and mouth disease

According to disease surveillance reports of the Pasteur Institute and National Institute of Hygiene and Epidemiology, in 2010, the number of cases of hand, foot, and mouth disease in the whole country reached 18 781 in 47 localities, and the number of deaths was 52 in 10 provinces/municipalities. The disease is concentrated mainly in the age group one to three years. This is an emerging disease and dangerous for children. In 2013, there were 37 788 contracted cases and 13 deaths. Compared to the same period in 2012, the contracted cases have fallen 40.57 percent, the number of deaths have fallen 63.89 percent. From January to May 2014, the number of cases of hand, foot, and mouth disease in the whole country was 17 410, including 2 deaths.

1.3.2. Health issues related to pregnancy and the perinatal period

Preterm birth complications

Preterm birth complications (due to birth before 37 weeks of gestation) are a leading cause of child deaths worldwide. Children who survive often face difficulties due to disability, mental retardation, and hearing and vision disorders. Some causes of prematurity include multiple births, reproductive tract infections, and chronic diseases such as diabetes and hypertension in pregnant women.

Approximately 75 percent of premature infants can be saved with feasible cost-effective interventions such as antenatal corticosteroid treatment (injections given to expectant mothers who are at risk of preterm birth to strengthen the fetus), kangaroo mother care,⁴ and treatment of neonatal infections with antibiotics.

In Vietnam in 2010 about 43 percent of newborn infants (0 to 6 days of age) died from preterm birth complications. Complications of prematurity are a leading cause of death in 16 percent of children under five.

Congenital anomalies

Congenital anomalies can lead to death or permanent disability. The most common severe birth defects are congenital heart defect, neural tube defects and Down syndrome, causing a burden for each individual child, their family and the whole society. Many birth defects can be prevented through Rubella vaccination, syphilis treatment for expectant mothers, ensuring adequate folic acid and iodine for pregnant women, caution about using drugs or having physical contact with chemicals during pregnancy, full antenatal care and avoiding pregnancy in older ages and consanguine marriage.

Birth asphyxia and trauma

Birth asphyxia and trauma are important causes of neonatal mortality or permanent disability due to cerebral palsy, hematoma, and intracerebral hemorrhage. Factors leading to birth trauma include fetal-pelvic disproportion, delivery that is too fast or too slow, breech birth, and delivery interventions such as forceps, suction or cesarean birth.

Interventions for resuscitation of infants with birth asphyxia can reduce the mortality rate. Basic tools include suction instruments and tools to resuscitate breathing (e.g. newborn bag and mask ventilator), but most importantly are qualified midwives who are capable of infant resuscitation. Trauma can be prevented through providing theory and practical training on midwifery skills for health workers so that they can handle difficult cases and transfer expectant mothers to medical care facilities capable of providing necessary interventions. In addition, provision of Vitamin K injection soon after birth can reduce hemorrhage in neonates.

1.3.3. Injuries

Road injuries

According to statistics of the Road and Railway Traffic Police Department (C67), there were 31 266 traffic accidents (including road, train, waterway and airways), with 9805 deaths and 32 253 injuries in 2013. Compared with the same period in 2012, traffic accidents decreased by 5008, down 13.8 percent, deaths increased by 44, up 0.45 percent, and the number of injuries fell by 6229, down 16.18 percent. Among these, road traffic accidents accounted for the greatest share. In 2013 there were 30 874 road traffic accidents, with 9627 deaths and 31 982 injuries. Compared with 2012, road traffic accidents fell by 4946 cases, down 13.8 percent, while deaths increased to 87, up 0.91 percent and injured people fell by 6188, down 16.21 percent. Among these accidents in 2013 were 58 particularly serious traffic accidents, killing 219 people and

⁴ Method of care for premature or underweight babies in which the infant is placed directly on the mother's skin for warmth and frequent nursing.

injuring 203 people. In total in 2013 there were 19 479 traffic collisions with 23 968 people injured [25].

The role of the health sector in traffic accidents focuses on provision of first aid and medical transport of victims to medical care facilities for prompt treatment. Information about the impact of emergency transport on mortality from traffic accidents remains inadequate. The Traffic Safety Committee of HCMC in collaboration with Cho Ray Hospital has announced the results of scientific research on traffic safety, which shows that victims of traffic accidents who are given surgical interventions and patients receiving treatment within the golden period (from the time the accident occurs till receiving medical interventions) of 12 or fewer hours have a 2.6 times higher chance of surviving than victims whose care was delayed. The study also shows that in HCMC the main means for transporting victims of traffic accidents to Cho Ray Hospital is motorcycles, which suggests a quick reaction. However, doctors warn that motorcycles are unsafe for patients with spinal injuries, especially the cervical spine. Thus, improper first aid could even make the injury more severe [26].

Drowning

Every year approximately 3500 Vietnamese children drown. Numerous incidents of drowning (especially among children under age 10) are due to parental neglect and lack of necessary supervision to ensure child safety. Most drowning result from the fact that many children, including those living in areas with open water bodies, do not know how to swim. The Mekong River Delta is flooded for several months each year, but only 35 to 36 percent of children aged 12 to 15 years in this region know how to swim. Less than 10 percent of children in the North know how to swim. Moreover, children who can swim often still drown due to lack of skills to prevent drowning. In recent years, many interventions have been implemented to reduce child drowning, but the results are unsatisfactory. Mass media contains frequent warnings about drowning, but does not pay adequate attention to high-risk groups, such as the poor. An effective communication method involves active collaborators working in the field of child protection and care in the community. However this network remains weak. Training in swimming skills for the community through the Ho Chi Minh Communist Youth Union and the school system is a measure with some potential for improving the situation. Recently, the Department of Child Protection and Care under the Ministry of Labor - Invalids and Social Affairs collaborated with the Department of Student Affairs under the Ministry of Education and Training to develop a roadmap for inclusion of swimming in the mandatory program for high school students by 2015 [26].

2. Health determinants

Health status depends on many different determinants. Therefore it is necessary to analyze health determinants in order to determine interventions and assign responsibility to each ministry for care, protection and improvement of the people's health. Demographic and socioeconomic factors affect health indirectly. According to global studies on the burden of disease, direct risk factors include diet, lifestyle, environment, physiology, occupation and violence. In addition, lack of access to quality health care can also be considered as a factor affecting health. The section below analyzes health determinants including indirect factors (demographic and socio-economic factors) and direct factors.

2.1. Demographic and socio-economic factors

2.1.1. Demographic factors

Population size and growth

The estimated population of Vietnam was 89.71 million in 2013 (50.54 percent male and 49.46 percent female) [27]. According to the General Office for Population - Family Planning, Ministry of Health, by 1 November 2013, the population of Vietnam reached 90 million. The population size is large and increasing; population density increased from 231 people per km² in 1999 to 271 people per km² in 2013. Substantial efforts to promote family planning in Vietnam have led to below replacement fertility rates starting in 2006, an achievement maintained until the present. However, 26 provinces have not yet reached this target, and 10 of these provinces have high fertility rates (more than 2.5 children per woman). The number of women in child bearing age (15-49 years) accounts for 55 percent of total females in the population and life expectancy continues to rise; both of these factors contribute to annual population growth rates of 1.05 percent during the period 2011 to 2013, higher than the health sector target of reducing the population growth rate to below 0.93 percent a year. In 2012 and 2013 the crude birth rate increased, making it difficult to achieve the goal of reducing birth rates by 0.1‰ per year set by the National Assembly. The population has increased by about 1 million people between 2012 and 2013. Nevertheless, even if these rates of population growth are sustained, the goal of the five-year plan of maintaining the population under 92 million people and the goal of the national target program (NTP) on population and family planning of under 93 million people are both achievable by 2015 (Table 7).

Table 7: Basic indicators of population in the five-year plan, 2010-2015

	Indicator	2010	2011	2012	2013	2015 target
1	Population (million people)	86.93	87.84	88.77	89.71	<93*
2	Annual rate of decline in fertility (‰)	fall 0.50	fall 0.50	rise 0.30	rise 0.10	fall 0.10*
3	Population growth rate (%)	1.05	1.04	1.06	1.05	0.93
4	Sex ratio at birth (boys/100 girls)	111.2	111.9	112.3	113.8	≤113

Notes: Targets set in the Plan for the protection, care and promotion of the people's health 2011-2015. *Target adjusted in the NTP for Population and Family Planning 2012-2015.

Source: GSO. Survey of Population Change and Family Planning 1/4/2012.

Imbalance in sex ratio at birth

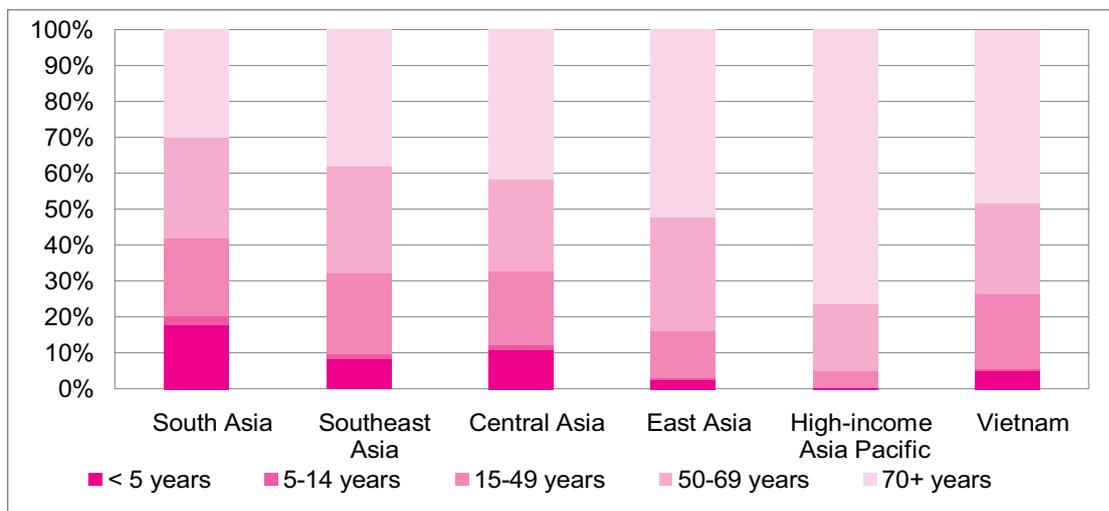
Imbalance in the sex ratio at birth is a critical problem that needs to be addressed. Imbalance in the sex ratio at birth has increased every year over the past decade, especially in the past 5 years. In 2010, it was estimated that there were 111 boys per 100 girls. The figure for 2013 was 113.8 boys born per 100 girls [27], indicating the inability to control the sex ratio at birth at or below 113 as set out in the Five-year health sector plan. The causes of imbalance in the sex ratio at birth include: prevalent attitudes towards revering men and disregarding women; belief that maintenance of family line is through having male children; desire for a son to take care of the parents; and increased access to ultrasound for detecting fetal sex in both public and private facilities. Effective inter-sectoral interventions are needed to address these causes.

Age structure and mortality

The proportion of the population under age 15 dropped from 33.1 percent in 1999 to 23.9 percent in 2012. In contrast, the share of population aged 15-64 years (key labor force ages) increased from 61.1 percent in 1999 to 69 percent in 2012. With this golden population structure⁵ Vietnam has many advantages for economic growth [28]. However, with adolescents and youth (aged 10-24 years) accounting for about one third of population, issues of building healthy lifestyles and reproductive health care pose substantial challenges for society and the health sector.

The proportion of people aged 60 or more increased from 8 percent in 1999 to 10.2 percent in 2012. Mortality patterns vary by age structure and income. Wealthier regions have a lower share of population dying prematurely (death under 70 years) (Figure 21). In high income Asia-Pacific countries, approximately 25 percent of deaths occur below age 70 years, while in Vietnam more than half of all deaths occur under age 70, nearly the same as in the East Asia region. The number of deaths in the under-14 age group in Vietnam accounts for about 5 percent of total deaths, higher than in East Asia and high-income areas, but less than other Asian regions. The share of all deaths occurring to people in working ages in Vietnam (15-69 years old) was 46 percent, the same as in Central Asia and East Asia. However, mortality in East Asia is more concentrated in older groups while in Vietnam and Central Asia, the mortality rate in the age group 15-49 accounted for nearly 20 percent of total deaths.

Figure 21: Age structure of mortality by international region, 2010



Source Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

Population aging

The structure of Vietnam's population has seen significant changes with an increasing trend towards aging. The proportion of the population aged 60 years or more increased from 8 percent in 1999 to 10.2 percent in 2012. The proportion of the population aged 65 or older

⁵ According to UNFPA, "golden population structure" occurs when for each dependent there are 2 or more people in working ages.

increased from 5.8 percent in 1999 to 6.4 percent in 2009, reaching 7.1 percent in 2012. The aging index (total number of people aged 60 or more per 100 people under 15) increased from 24.3 percent in 1999 to 43.5 percent in 2013 [27]. Having a high proportion of elderly people in the population will increase demand for health care services in the coming years. In Vietnam, social and health care for the elderly (including lonely elderly) is still limited. Although many elderly people have children and grandchildren, they still lack care because their children work away from home or do not have time to look after them.

Morbidity patterns among the elderly (70 or older), including highly fatal diseases and other diseases entailing many years lived with disability, lower the quality of life, and create high demand for health care. About half of deaths in Vietnam each year are among the elderly. In 2010, deaths from the ten most deadly diseases in the elderly made up of 66 percent of total deaths in this group; with deaths from hemorrhagic and other non-ischemic stroke accounting for 27 percent of total deaths among the elderly. Besides NCDs, 2 out of 10 leading causes of deaths in the elderly are infectious diseases, including lower respiratory tract infections and TB (Table 8). Ten diseases/conditions causing the highest burden of disease in terms of YLD accounted for 64 percent of YLD among the elderly and consisted mainly of chronic NCDs such as hearing and vision disorders, musculoskeletal disorders (lower back pain, neck pain, and osteoarthritis), neurological disorders, and mental disorders (including Alzheimer’s disease and depression).

Table 8: Specific causes of death and years of life with disability among the elderly (aged 70 and older), 2010

	Cause of death	Percent of deaths		Cause of years living with disability	Percent of YLD
1	Hemorrhagic and other non-ischemic stroke	27%	1	Vision and hearing disorders	19%
2	Ischemic heart disease	8%	2	Lower back pain	10%
3	COPD	7%	3	COPD	9%
4	Lower respiratory infections	5%	4	Osteoarthritis	5%
5	Trachea, bronchus and lung cancer	4%	5	Falls	5%
6	Liver cancer	3%	6	Alzheimer and other dementias	5%
7	Diabetes	3%	7	Depression	4%
8	TB	3%	8	Diabetes	3%
9	Ischemic stroke	2%	9	Neck pain	2%
10	Stomach cancer	2%	10	Ischemic heart disease	2%
	Total	66%		Total	64%

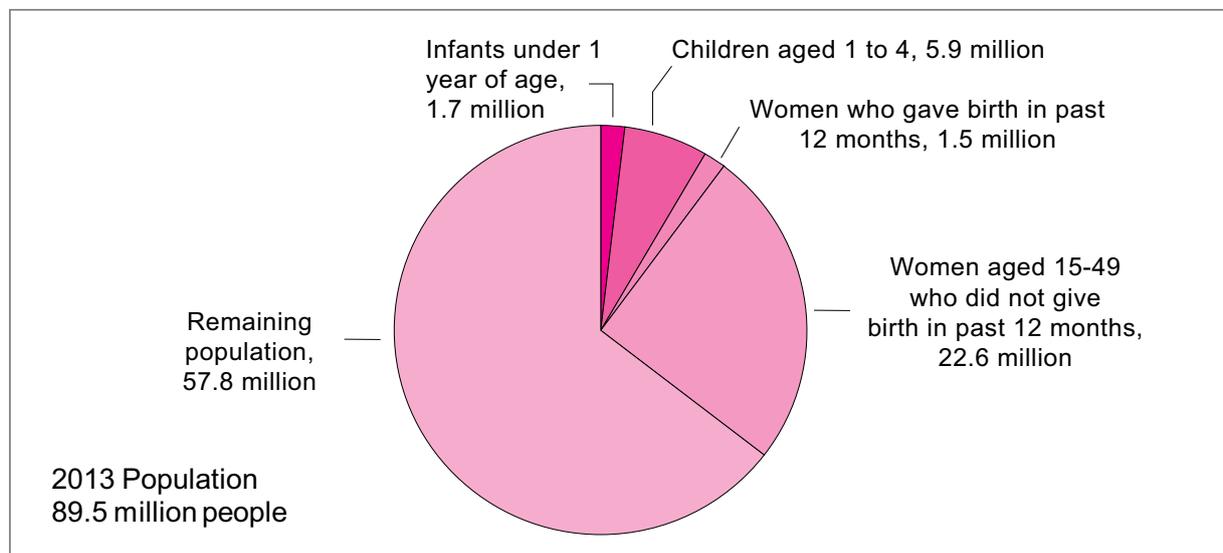
Source: Calculated from data of the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

Mothers and children

Mothers and children are priority groups with special demands for health care. The burden of disease among women in childbearing ages is not high, however they still have

substantial need for care. Children under age five are a high risk group for mortality; demand for vaccination, prevention of malnutrition, diarrhea, pneumonia and injuries in this group is very high. Women of childbearing age, including both married and single women, have great demand for family planning services to prevent unwanted pregnancy. Demand for family planning is not yet satisfied; in 2012, a total of 88 783 married women had abortions. Information about the total number of unmarried women having abortions is not available. Approximately 1.5 million pregnant women have demand for antenatal care each year. The maternal and child population group is receiving both national and international attention as evidenced in the MDGs aimed at reducing maternal and child mortality. Figure 22 shows that this group is very large, accounting for 35.4 percent of the population, including 1.7 million children under age one, 5.9 million children aged one to four years, and 24.1 million women in childbearing ages in 2013 [27].

Figure 22: Size of mother and child groups, 2012



Source: GSO, Survey of Population Change and Family Planning [27]

Groups with difficult geographic access and migration

The population living in rural mountainous and maritime areas faces greater difficulty in accessing health services than others. Rural areas of the mountains and highlands are considered areas with low geographic access to health services. In 2012, 11 percent of the population was living in the rural part of the Northern midlands and mountain areas and 4 percent of the population was living in rural areas of the Central Highlands. The Government has identified the 62 poorest districts in the country where the poverty rate exceeds 50 percent, almost all of which have poor access to good quality health services because they are in mountainous or border areas. It is estimated that the population of the poorest districts is 2.4 million people, of which 90 percent are members of ethnic minorities.⁶ Maritime areas, i.e. coastal areas and islands, have also been identified as having high need and low access to health services. The population living in these maritime areas is estimated at about 32 million people⁷. Among this population, about 250 000 people live in island districts.

⁶ Government Resolution No. 30/A/2008/NQ-CP dated 27 December 2008: on the Program for rapid and sustainable reduction in poverty for 61 poor districts.

⁷ Prime Ministerial Decision no. 52/2009/QĐ-TTg dated 9 April 2009 approving the Project to control population in maritime areas for the period 2009-2020.

The annual number of migrants is very large. Migrant status has important links with health. In the 12 months prior to 1 April 2013, a total of approximately 535 000 people migrated between regions and 1.8 million migrated between rural and urban areas. The main interregional migration flow is from the Mekong River Delta and North Central and Central coastal areas into the Southeast. There are also many migrants from the North Central and Central coastal areas migrating to the Central Highlands and the Red River Delta. From 2012 to 2013 there were 39 000 rural to urban migrants. However, the largest migrant flow moves from rural areas to other rural areas (656 000). Migrants are generally healthier than non-migrants since migration is concentrated in the 15 to 34 year age group (for study or work). The rate of migration was higher in the group with higher levels of education [27].

Migration can have both positive and negative links to health. The positive impact of migration on health is due to the fact that migrants have higher income and can send money back to their family members to pay for medical services when necessary [29]. Health insurance coverage among migrants working in the industrial sector is higher compared with non-migrants working in household businesses or on farms. However, negative linkages also exist. Health insurance coverage among migrants is still low because not all employers comply with the law on compulsory health insurance. Difficulties for migrants to use their health insurance leads to lower access to health services for this group. Migrants have higher health risks than non-migrants, especially sexually transmitted diseases and HIV/AIDS. Smoking prevalence and use of alcohol among migrants to the South also increases the risks to their health. Migrants tend to not be fully aware of health care and the need to avoid risk behaviors like smoking, using alcohol /beer, and drugs, etc. [30].

2.1.2 Socio-economic determinants

A stable and developed economy facilitates increased investment in health care. Generally, the more the economy develops, the higher the investment in the health sector. Vietnam's economy has overcome many difficulties and challenges. The macro economy is generally stable with a sustained growth rate leading to increased potential and size of the economy. The annual average economic growth rate has not fallen below 5 percent in the period from 2005 to 2013. The estimated GDP per capita in 2013 was 39.8 million VND [31].

Employment

Employment is an important factor affecting health since it is related to income for ensuring living conditions (including food, accommodation, health, etc.), and ensured income is a protective factor for mental health. Employment provided by employers who comply with regulations on social security and pay health insurance premiums for employees ensures workers' access to health services. It is estimated that up to 1 January 2014, the labor force aged 15 or more amounted to 53.65 million people, among which over 6 million are elderly.

The labor force is divided between three sectors, the agricultural sector (46.9 percent), industry and construction (21.1 percent), and services (32.0 percent). The informal sector accounted for 34.2 percent of the total workforce aged 15 or more. This group is more likely to not have health insurance coverage. The estimated unemployment rate of working age people is 2.2 percent and the underemployment rate 2.9 percent. The estimated youth unemployment rate (in the 15 to 24 year age group) was 6.4 percent [11].

Poverty

In 2013, 426 700 rural households suffered from hunger, a decrease of 5.2 percent compared with 2012, and equivalent to about 1.8 million people. The estimated poverty rate in 2012 was 9.9 percent down 1.2 percentage points compared with 2012 [11]. A relatively large number of residents in major cities live in slums with poor hygienic conditions that affect their health. Many workers of industrial zones with low incomes resort to sharing small rented houses with each other, and often suffer from lack of safe drinking water and basic sanitation, factors associated with adverse health outcomes.

Education and training

By the end of 2013, some 61 out of 63 provinces had achieved targets for universal primary education of primary school age children. Four of these provinces had achieved even higher standards of universal primary education, an increase of one province compared to 2012. In the 2012-2013 academic year some 8900 pupils dropped out of primary school, down by 0.1 percent compared with the previous school year; among lower secondary level, about 44 000 children dropped out, down by 0.3 percent and at the upper secondary level, about 42 000 children dropped out, down by 0.2 percent.

In 2013, the education and training sector continued to receive priority for development investments. Total funds allocated from the state budget for education and training in the year 2013 amounted to 194.4 trillion VND, increasing by 14.1 percent compared with 2012. Recurrent expenditures amounted to 164.4 trillion VND, up by 17.3 percent, while 30 trillion VND was allocated for basic construction, equivalent to the previous year.

2.2. Risk factors for burden of disease

The global burden of disease study, relying on research about various diseases and injuries attributed to different risk factors, also provided information on the total DALYs, YLLs, YLDs and deaths associated with various disease-specific risk factors. This section analyzes risk factors including environment, lifestyle, nutrition/diet, physical activity, physiological factors, occupation, and violence to provide important evidence for developing policies and plans.

Table 9 shows the proportion of all deaths and DALYs attributed to each risk factor group. According to these data, the leading risk factor is unhealthy diet, either inadequate intake of healthy foods like vegetables and fruit, or overconsumption of foods that are harmful to health such as processed meat or sugar-sweetened beverages. The second leading risk factor group includes physiological risk factors, like hypertension and high total cholesterol, followed by tobacco smoking and air pollution.

Table 9: Structure of risk factors in terms of deaths and DALYs, 2010

	Percent of deaths	Percent of DALYs
Unimproved water and sanitation	0.2%	0.4%
Air pollution	15.2%	13.7%
Other environmental risks	1.6%	1.2%
Tobacco smoking	14.8%	14.7%
Alcohol and drug use	5.4%	10.4%

	Percent of deaths	Percent of DALYs
Dietary risk factors	31.3%	25.3%
Child and maternal under nutrition	0.7%	4.8%
Physical inactivity	2.5%	2.5%
Physiological risk factors	26.4%	20.3%
Occupational risk factors	1.5%	5.3%
Violence	0.2%	1.5%
	100.0%	100.0%

Source: Calculated from data of the Institute for Health Metrics and Evaluation (IHME). Global Burden of Disease Study 2010 (GBD 2010) Risk Factor Attribution Results 1990-2010 - Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

2.2.1. Environmental risk factors

Safe drinking water and basic sanitation

Lack of or insufficient safe drinking water or inadequate sanitation are important causes of many diseases, mainly diarrheal diseases such as rotavirus, cholera, typhoid and paratyphoid fevers. Other diseases/conditions related to water and sanitation are hepatitis A, helminths, trachoma, mosquito-borne diseases (e.g., malaria, dengue fever, and Japanese encephalitis) and drowning. Many countries have committed to the implementation of the MDG to ensure sustainable access to safe water and basic sanitation. As analyzed in the section on Implementation of the health-related MDGs in Chapter II, Vietnam has achieved the MDG target of 75 percent of the population having access to improved latrines and 95 percent of the population using safe drinking water. As a result, the share of the burden of disease related to inadequate water, toilets and sanitation in Vietnam remains low, accounting for only 0.2 percent of total deaths and 0.4 percent of total DALYs. However, this is likely to be an underestimate since the burden of disease study only covers the impact of safe water and sanitation on cholera and typhoid, and does not yet include impact of this factor on other diseases such as helminths, hepatitis A, trachoma, and mosquito-borne diseases in Vietnam.

Despite these promising results from reducing this risk factor, there are still many issues that need to be addressed. The process of industrialization and urbanization are leading to water pollution and hindering the ability to ensure safe drinking water for the population. In particular it is difficult to manage water pollution because of the large number of small-scale production facilities dumping waste into the waterways without adequate inspection to catch such violations. There is a need for legislation to restrict and monitor water pollution caused by wastewater from industrial production and domestic consumption, and to ensure that people can live in a clean and safe environment. In addition, a relatively high share of households in rural areas still share a toilet, use unhygienic toilets or have no toilet to use. Awareness of and conditions for washing hands after using toilets/latrines or before eating remains limited in many households and schools.

Air pollution

Air pollution sources includes household solid fuel use, ambient particular matter pollution from production facilities, plants and factories near residential areas, traffic, and ambient ozone. The impacts of these factors on health include respiratory tract infections,

trachea, bronchus and lung cancers, ischemic heart disease, stroke, COPD and asthma. It is estimated that 13.7 percent of the burden of disease and 15.2 percent of deaths result from air pollution, mainly due to stroke and ischemic heart disease.

Together with industrialization and urbanization, air pollution is worsening, which directly affects health. Among facilities identified as severe causes of pollution, 13 percent are cited for causing severe air pollution, including cement factories, traditional handicraft villages using charcoal for fuel and garbage dumps. In urban areas, traffic is the main cause of air pollution (70 percent). Air pollution caused by dust in urban residential areas is a serious problem that severely affects people's daily life and health.

Solid waste

Waste and waste treatment methods have large impacts on people's health. The main form of concentrated waste disposal used in Vietnam is open landfills. In the list of facilities causing severe environmental pollution, 52 landfills are identified as being in need of closing, moving, upgrading and being regulated. Only 17 out of 91 landfills nationwide meet sanitary standards. In many places, solid waste disposal by individuals is common, through methods like burning, burying, or dumping into rivers and canals. Open landfills cause many environmental problems for the surrounding communities, such as water and soil pollution due to the leaking of untreated substances and air pollution due to burning. These are factors leading to an increase in skin, digestive, and respiratory diseases. Junk collector at landfills, especially children (accounting for 9 percent) are most vulnerable to diseases due to solid waste.

Medical waste

Medical waste is increasing in quantity and becoming more complex in types. Funds for upgrading waste treatment facilities have increased in recent years, however they remain inadequate, particularly for operating these waste treatment facilities. The system to handle toxic and biological waste in many health care facilities, especially at the grassroots health network, is incomplete and often does not comply with environmental laws, especially the medical wastewater treatment systems. The amount of wastewater is increasing proportionally with the increase in the number of patients, which worsens pollution.

Climate change

Vietnam is among the most vulnerable countries to climate change. The impact of climate change on health is analyzed through four aspects. The first is through socio-economic factors such as access to clean air, safe water, food security and safe housing. The second is through an increase in temperature, which leads to a rise in morbidity and mortality from cardiovascular and respiratory diseases, health problems due to high temperature, or indirectly through an increase in air pollutants or allergens, such as pollen. The third is through the impact of climate on water-related diseases and water disease vectors, such as mosquitoes, that spread malaria and dengue fever due to prolongation of the epidemic season or expansion of the areas where vectors thrive. The fourth is through the frequency and levels of natural disasters caused by climate change such as sea level rise, floods and storms that force people to move to other areas or live in unsanitary conditions, with health problems relating to lack of safe drinking water, starvation, and high risk of drowning. Drought can reduce the amount of water available for drinking, farming and sanitation.

Natural and man-made disasters

In 2013, Vietnam was hit by 15 powerful typhoons. Post-typhoon rain and floods caused serious losses including deaths and property damage in many localities. According to preliminary reports from the provinces, natural disasters caused 313 deaths and missing persons, injuries to 1150 people and damage or destruction of 6401 houses. More than 692 houses were flooded and damaged. Some 88.2 km of dykes, dams and 894 km of roads were broken and suffered landslides. Approximately 8 000 electrical poles were broken. Over 17 000 hectares of rice fields and 20 000 hectares of crops were lost. About 117 000 hectares of rice fields and 154 000 hectares of other crops were flooded causing severe crop loss.

Fires and explosions have increased in recent years, causing loss of human life and property. From 15 November 2012 to 15 November 2013, 2500 fires and 65 serious explosions occurred across the country, causing 127 deaths and injuring 339 people.

2.2.2. Lifestyle factors

Lifestyle risk factors include many different kinds, however this section only focuses on tobacco smoking and alcohol and drug use. Because tobacco smoking and alcohol use are two of the most important risk factors for NCD disease burden, they are analyzed in greater detail in Chapter IV. This section summarizes contents related to NCDs and analyze in depth other diseases related to these two risk factors.

Tobacco smoking

Tobacco smoking is a risk factor leading to many diseases, mainly NCDs such as various types of cancer, cardiovascular disease, stroke, diabetes, COPD and other chronic lung diseases. Smoking also increases the risk of infectious disease like TB and respiratory infections. Vietnam has the 19th highest male smoking prevalence rate in the world [32]. Results of a 2010 survey showed that 47.4 percent of men and 1.4 percent of women smoke, although women and children are also strongly affected by secondhand smoke [33]. Tobacco smoking causes approximately 16.9 percent of total deaths and 8.8 percent of disease burden measured in DALYs [34].

The Vietnamese National Assembly approved the Law on Tobacco Control in 2012, which came into effect on 1 May 2013. The government has developed decrees and circulars guiding the implementation of tobacco control activities in order to strengthen existing interventions, such as banning and penalizing smoking in public places and crowded areas.

Harmful use of alcohol

Harmful use of alcohol leads to many NCDs such as gastrointestinal cancers, urinary tract cancer, liver cancer, breast cancer, cardiovascular disease, stroke, liver cirrhosis, diabetes, epilepsy, and alcohol-related mental disorders. Use of alcohol is also linked to TB, lower respiratory infections, poisoning, traffic accidents, and many types of injuries, and violence. In May 2014, a Conference for implementation of the National policy for prevention and control of harmful use of alcohol to the year 2020 took place. Information presented included evidence that the Vietnamese people are currently consuming more than 3 billion liters of beer and 68 million liters of alcohol per year. According to research of the Health Strategy and Policy

Institute, 4.4 percent of Vietnamese people are suffering from diseases attributed to their alcohol use. Each year, as many as 60 percent of traffic accidents, 68 percent of domestic violence cases and 38 percent of social disorder incidents are caused by alcohol use. Overall, use of alcohol/beer caused 5 percent of total deaths and 8 percent of the disease burden measured in DALYs in 2010 [34].

Vietnam is one of the Asian countries with the highest use of alcohol among people participating in traffic. Violations due to consumption of alcoholic beverages before driving vehicles in traffic account for 5 to 6 percent of administrative violations dealt with by the traffic police. More than 30 percent of traffic accident deaths and 60 percent of injuries requiring hospital admission occurred to people with blood alcohol concentrations higher than the allowed limits for driving in traffic (the highest was 458/100 ml of blood, 9 times higher than the allowed amount). Most drunk driving violations are males, and about 75 percent are youth [35]. According to statistics of the National Assembly Committee on Social Affairs, every year, about 12 000 people are killed in traffic accidents, 10 percent of which were attributed to alcohol use. It was estimated in 2012 that every year, 2.6 percent of GDP, or about 3.5 billion USD is lost due to traffic accidents, one third of which is related to alcohol use [36].

Illicit drug use

Use of illicit drugs is associated with certain NCDs such as liver cancer and cirrhosis, but is mainly linked to mental disorders including schizophrenia as well as self-inflicted injuries and infectious diseases like HIV/AIDS and hepatitis due to sharing needles. Currently, the use of illicit drugs and the number of illicit drug users is increasing rapidly in Vietnam. According to the Ministry of Public Security, in June 2010, there were more than 118 400 identified drug addicts. This figure increased to 131 000 in September 2010. The number of unidentified drug addicts working as civil servants and government workers is suspected to be relatively high. Injecting drug use is the main route of HIV/AIDS infection in Vietnam. It is estimated that 45 percent of HIV/AIDS patients, and a large share of hepatitis patients are infected through injecting drug use [37].

2.2.3. Nutrition, diet and food safety

Child nutrition

Risk factors related to child nutrition include discontinuation of breastfeeding for children aged 6 to 23 months, non-exclusive breastfeeding for babies under 6 months of age and not breastfeeding at all, underweight, iron deficiency, vitamin A deficiency, and zinc deficiency. Diseases related to nutritional factors include gastrointestinal infections, respiratory infections, measles, malaria, protein-energy malnutrition, vitamin A deficiency, hemorrhage due to mothers' lack of iron at birth, sepsis or iron deficiency anemia. The child malnutrition rate continues to decrease over time. It was estimated that in 2010 malnutrition led to less than 1 percent of total deaths and approximately 5 percent of the disease burden measured in DALYs.

Diet

In addition to child nutrition and micronutrients, diet also affects people's health. A diet with adequate fruits and vegetables, whole grains, nuts and seeds (such as cashews, peanuts,

sesame seeds), milk, fiber, calcium, omega 3 fatty acids from seafood and unsaturated fatty acids is beneficial to health. In contrast, a diet abundant in red meat (such as beef), processed meats (such as sausages), sugar-sweetened beverages, salt, and trans-fatty acids leads to disease. Diseases that can be prevented through healthy diet include gastrointestinal cancer, ischemic heart disease, stroke, chronic kidney disease and diabetes mellitus. The burden of disease study estimates that 31.3 percent of total deaths and 25.3 percent of total DALYs in Vietnam are caused by unhealthy diet [34].

Food safety

The situation of food poisoning is very complex. Every year, approximately 200 major food poisoning incidents (involving 30 or more victims) take place. The total number of food poisoning victims nationally is estimated to range from 1.2 million to 1.5 million. The number of deaths from food poisoning is about 35 to 40 per year. In the first 8 months of 2013, Vietnam reported 125 food poisoning incidents with a total of 3145 victims, 2807 hospital admissions, and 19 deaths. Laboratory testing and clinical exams indicate that 49.6 percent of these food poisoning cases were caused by microorganisms, 17.6 percent were caused by natural toxins, 2.4 percent were caused by chemicals and the remaining 30.4 percent have undetermined causes. Compared with the same period in 2012, the number of food poisoning incidents and hospital admissions decreased by 7 incidents, 910 victims, 406 hospital admissions and 6 deaths. Food poisoning in households and cafeterias decreased considerably compared with 2012.

The proportion of food poisoning cases and deaths related to natural toxins, poisonous mushroom and chemicals is still high. Noncompliance with the regulation on use of chemicals and food additives is widespread during cultivation, ingredient processing and food production, while the capacity of the provincial Food Safety Departments remains weak due to the fact that these units have only recently been established and are still lacking in facilities and human resources. Capacity of food quality testing laboratories remains limited and does not meet the urgent need for surveillance and identification of the causes of food poisoning cases.

2.2.4. Physical activity

Physical activity is strongly linked with health. Physical inactivity is an important risk factor for osteoporosis, osteoarthritis, back pain, obesity, depression, anxiety, stress, prostate cancer, and colorectal cancer. About 2.5 percent of total deaths and 2.5 percent of the disease burden measured in DALYs in 2010 are attributed to physical inactivity. Cardiovascular disease, diabetes and cancer are the main health problems related to physical inactivity according to current evidence for Vietnam.

The proportion of Vietnamese people participating in regular exercise and sports has increased over time. However, this proportion is still low, reaching only 27 percent in 2013 (Table 10). The proportion of families participating in regular physical exercise and sports is even lower at only 18.6 percent [38]. Large cities lack space for people to participate in physical activities, such as walking, playing badminton and soccer. Open spaces are occupied or used for other purposes. A more positive development is that, in 2013 approximately 95 percent of schools implemented physical education programs. This is the first step towards mobilizing Vietnamese people to get physical exercise and improve their own health. Information on physical activity will be presented in more detail in Section 3.2.

Table 10: Proportion of individuals and families participating in regular physical exercise, 2010-2013

	Proportion of individuals regularly participating in physical exercise	Proportion of families regularly participating in physical exercise
2010	23.6%	15.8%
2011	24.1%	16.0%
2012	25.5%	16.6%
2013	27.2%	18.6%

Source: Ministry of Culture and Tourism. Basic indicators and data for the culture, sports and tourism sector. Accessed on 9/8/2014. <http://bvhttdl.gov.vn/vn/thong-tin-thong-ke/0/18/index.html>

2.2.5. Physiological risk factors

Physiological factors leading to the burden of disease include high fasting plasma glucose, hypertension, high blood cholesterol, high body mass index, and low bone density. Diseases related to physiological factors are mainly NCDs such as diabetes, cardiovascular disease, chronic kidney disease and stroke. Overweight (high body mass index) also leads to diseases like cancer, lower back pain and osteoarthritis. Physiological factors are analyzed in more detail in Chapter III.

2.2.6. Occupational risk factors

More than 80 percent of the 3 billion workers in the world live and work in conditions that lack access to basic occupational health services. Nearly half of the 4 billion people in the Asia-Pacific region are workers, excluding the informal sector. The informal sector may account for up to 40 to 60 percent of urban employment in Asia. In 2000, some 430 000 lives and 14 million DALYs were lost due to occupational hazards in the Asia-Pacific region [39].

A Global Action Plan for workers' health 2008-2017 was approved in the 60th session of the World Health Assembly in May 2007 with the following goals: develop and implement policies on workers' health; protect and improve health at the workplace; strengthen the implementation of and access to basic occupational health services; provide evidence for action and implementation; and integrate workers' health problems into other policies and projects. The WHO Western Pacific Regional Office has developed a Regional Framework for Action for Occupational Health 2011-2015.

In 2013, approximately 46.8 percent of workers in Vietnam were employed in the agriculture, forestry and fishery sectors. The figures for the industry and construction sectors are 15.0 percent and 6.2 percent respectively [40]. In 2011, small and medium-sized enterprises accounted for 97.6 percent of a total of 324 691 businesses across the country [41].

Vietnam has achieved great success in socio-economic development as a result of promoting industrialization and modernization. Nevertheless, Vietnam has to face many challenges in occupational safety and health. Many new risks have arisen in the process of industrialization such as new chemicals used in the footwear and toy manufacturing industries and various types of herbicides and insecticides used in agriculture. In addition to common occupational diseases such as occupational dermatitis, occupational lung diseases such as silicosis, occupational hearing loss, chemical poisoning, etc., other occupation-related diseases

are also common, including musculoskeletal disorders, diseases caused by occupational stress and psychosocial factors. Up through 2012, the total cumulative number of workers receiving compensation for occupational accidents and occupational diseases in Vietnam was 27 246 people. Some 75 percent of these were infected with siliceous pneumoconiosis and 15 percent of these suffered from hearing loss due to noise [42]. The system of occupational health care services and working environment, especially in small businesses and in the informal sector industries such as agriculture and traditional handicraft villages needs to be strengthened.

2.2.7. Accidents, injuries, violence

Accidents and injuries

The number of accidents and injuries, especially road traffic accidents, has increased over the past 10 years. Various type of traffic accidents and injuries are one of the leading causes of mortality. Every day 30 people die and 70 people are injured due to road traffic accidents. In addition to traffic accidents, other accidents and injuries are also common, such as poisoning, fires, explosions, electric shocks, drowning, etc., which present a substantial challenge to health care facilities, especially emergency surgical units.

According to the Health Statistics Yearbook 2011, there were 20.1 traffic accident deaths per 100 000 people (3.5 times higher for men compared to women: 31.9/100 000 among men and 8.5/100 000 among women). The study on the burden of disease and injury in Vietnam in 2008 carried out by Hanoi School of Public Health showed that the number of DALYs due to unintentional injuries among men were 2.5 times higher than for women (1229 compared to 505). Among unintentional injuries, traffic accidents caused the heaviest disease burden, accounting for 8 percent of DALYs among men and 4 percent among women. Falls and drowning were also two main causes of the disease burden in both genders [43].

Domestic violence

Domestic violence seriously affects physical and mental health, especially among women. According to research of the Vietnam Women's Union, 6 percent of all women hit by their husbands had to seek hospital treatment. The national survey on domestic violence against women in 2009-2010 showed that 58 percent of women experienced at least 1 of 3 types of violence (physical violence, sexual violence or emotional abuse) in their lives. Some 27 percent of women had experienced such violence within the past 12 months. Approximately 3 percent of women reported being sexually abused before the age of 15. Most women said that the perpetrators were strangers, but in some cases they were family members or acquaintances. According to the survey, three times more Vietnamese women experienced violence at the hands of their husband than any other individual. About 26 percent of women who experienced physical violence or sexual violence from their partners were injured as a direct result of this violence. 60 percent of these said that they had been injured two or more times and 17 percent of these had been injured 5 or more times. Women abused by their husbands were more likely to state that their health status was poor or was declining. They also had more difficulty with mobility and performing daily activities. They also suffered from pain, loss of memory, stress, negative thoughts, miscarriage, abortion, and stillbirth. Women with children aged 6 to 11 years who experienced violence from their husbands said their children had more behavioral problems, such as nightmares, bedwetting, aggressive behavior, and poor academic performance than

children whose mothers were not abused by their husbands. The impact of domestic violence on mental health is evident in the proportion of women with depression.

2.3. Risk factors related to access to health services

Health service delivery system

The network of health service providers in Vietnam has nationwide coverage, from the central, provincial, district to commune and village levels.⁸ The health service provider system is gradually being renovated and upgraded in order to meet people's growing demand for health care. Many advances in science and medicine have been applied to diagnosis, early detection of disease and treatment. Many highly complex technologies are being implemented in hospitals such as liver and kidney transplants and endoscopic interventions.

Despite these achievements, the provision of health services in Vietnam at present is facing many difficulties such as: many changes in the organizational structures; limitations in grassroots and primary health care capacity; lack of continuity of care between levels of the health care network; fragmentation of the curative and preventive care services; and medical services focused mostly on curative care. Overcrowding in central hospitals is common. Health financing policies have many shortcomings, especially provider payments methods. Some problems have arisen in the implementation of the hospital autonomy policy, such as over-prescription of health services, particularly diagnostic testing and drugs. Hospital management capacity suffers from many limitations. There are inadequate coordination and regulatory instruments to ensure transparency and accountability in the process of implementing operational and financial autonomy, leading to gaps in equity of service delivery and efficiency in health service provision. Effective systems and criteria for health services quality management have not yet been developed for application in both state and private medical care facilities.

3. Priority issues

This section presents some priority health issues and challenges that the health system must address in the next Five-year health sector plan for the period 2016-2020.

3.1. Priority health issues

Communicable disease including diseases with high prevalence and mortality such as HIV/AIDS, TB and dengue fever; diseases with potential for elimination/eradication such as malaria, Japanese encephalitis, rabies and leprosy; emerging diseases with potential for pandemic such as MERS-CoV, Ebola and some zoonotic diseases such as influenza A(H5N1), influenza A(H1N1), influenza A(H7N9), and influenza A(H5N6). In addition, some diseases should be prioritized because they cause high burden of disease for children such as pneumonia, diarrhea, encephalitis, meningitis, hand-foot-mouth disease, congenital anomalies, birth asphyxia and trauma, and drowning.

NCDs that cause high morbidity and mortality, such as cardiovascular disease (hypertension, stroke, ischemic heart disease), cancer, COPD, diabetes, mental and neurological disorders (schizophrenia, epilepsy, depression, alcohol and drug use disorders) and traffic accidents.

⁸ In this report, the term "district level" refers to both urban and rural districts, provincial towns and provincial cities, "commune level" refers to rural communes, urban wards and district towns.

Regional and demographic disparities in basic health indicators (IMR, U5MR, MMR, child malnutrition rate) as well as in accessibility to health care services.

3.2. Health determinants

Population aging increases the need for health care services, increases the burden on the household containing elderly members and increases health spending burden of the whole society, particularly the costs of treating chronic NCDs and end of life care. The health care system currently is not keeping up with these enormous changes.

Increase in risk factors due to effects of industrialization, modernization and urbanization such as: air pollution from industrial pollution and traffic; water pollution and food contamination; pollution due to improper treatment of solid waste; occupational disease and work accidents; stressful work environment and many pressures related to the process of migration and urbanization.

High prevalence of behavioral and lifestyle risk factors, particularly inappropriate diet (inadequate foods beneficial to health and excess of items harmful to health), smoking, harmful use of alcohol, illegal drug use, inadequate physical exercise, along with increases in **physiological risk factors** such as high blood pressure and elevated blood cholesterol.

3.3. Limitations of the health care delivery system

The health service delivery system is currently fragmented between levels and between preventive and curative care services; integration and continuity of care are not well implemented; and need for NCD prevention interventions is not being met.

The health services network at the district level and below remains weak and lacks the means and motivation to meet the growing demand of 90 million Vietnamese people, particularly the high demand for care among the elderly, mothers, children and people in reproductive ages. Quality of services is not adequately controlled.

4. Recommendations

On the basis of the above assessment of health status and determinants, the report recommends several groups of policy options summarized below.

4.1. Develop appropriate strategies for priority health problems

4.1.1. Communicable disease

- Closely monitor and guide surveillance and reporting on the global and national communicable and epidemic disease situation. Consult WHO recommendations and advice when planning emergency response to epidemics.
- Consolidate and strengthen activities to ensure safe immunizations. Study and consider introduction of additional cost-effective vaccinations into the EPI.
- Develop evidence-based options for prevention and treatment of respiratory infections, diarrhea, encephalitis, meningitis and helminths, especially in children.

- Continue to strengthen health IEC to increase awareness and action by the public for implementation of disease prevention measures. Continue to mobilize the people to develop the movement for health cultural villages, and rural household sanitation, with investments in clean drinking water, sanitary toilets and showers, to eliminate health problems related to unsanitary lifestyles and habits or environmental pollution.
- Continue to implement effective activities in screening and treatment of patients with HIV/AIDS, TB and dengue fever. Invest and closely monitor the implementation of goals for eradicating Japanese encephalitis, measles, malaria, leprosy and rabies; study various options for integration of sub-projects within the national health target program on prevention of diseases especially dangerous to the community.
- Mobilize funds, human resources and physical infrastructure in the provinces, including community and business resources, for HIV/AIDS prevention and control. Integrate HIV/AIDS prevention and control into the mainstream health system and local socio-economic development projects and programs.
- Promote IEC activities related to HIV/AIDS and TB; focus efforts on appropriate target groups, mountainous regions and areas with large ethnic minority populations.
- Expand and increase the quality of intervention activities, especially promoting treatments of opiate addiction through methadone replacement therapy for districts with more than 250 drug addicts.

4.1.2 NCDs, accidents and injuries

- Encourage screening of NCDs and physiological factors linked to these diseases in the community, the workplace and associations, such as the elderly association, for early detection and effective management of NCDs.
- Increase interventions to reduce traffic accidents, including health IEC encouraging full compliance with the Law on Traffic Safety, particularly avoidance of driving when consuming alcohol and use of good quality helmets.

4.1.3. Reduce regional disparities

- Implement effective measures to rapidly and sustainably reduce child malnutrition, especially stunting, infant and child mortality rates, and the maternal mortality ratio in disadvantaged regions (Northern midlands and mountain areas, Central Highlands, maritime areas, and the 62 poorest districts). Focus on appropriate investments for meeting the needs of local people according to their morbidity patterns.
- Increase investment in socio-economic development for disadvantaged, remote and isolated areas; ensure safe drinking water and basic sanitation; and ensure access to health care services and health information to increase understanding of methods for health promotion and avoidance of factors harmful to health.

4.2. Reduce harm from determinants of poor health

- Develop an evidence base about the harmful effects of environmental pollution on health. Advocate for increased investments by relevant ministries and sectors to implement

pollution reduction measures, especially related to air and water pollution, and to ensure safe drinking water and basic sanitation in poor districts and areas lacking these basic conditions.

- Develop, adapt and implement plans for coping with natural disasters, climate change and emerging diseases, based on information from surveillance and evaluations of preparation activities and responses in previous years, in order to continuously improve the health sector response.
- Strengthen and strictly implement monitoring of tobacco and alcohol use, diet, physical activities and impacts of these behaviors on related disease. Advocate for relevant ministries and sectors to adjust, revise and enforce their policies and monitor the impact of various policy instruments on unhealthy lifestyle behaviors.
- Promote IEC campaigns to encourage the population to adopt a healthy diet (e.g., adding messages about diet aimed at reducing the risk of NCDs such as reducing salt intake), increase physical activity, quit smoking, and avoid illicit drugs and harmful use of alcohol. Impose stricter food labelling regulations to identify the manufacturer/processor, to indicate harmful ingredients in industrially processed foodstuffs, and provide other information to facilitate the people's adoption of a healthy diet.
- Develop and promulgate policies to ensure that factories and enterprises, in both public and private sectors pay more attention to the workplace environment and workers' health; raise awareness about working conditions that are harmful to health; implement measures to prevent pollution and minimize the risk of occupational diseases and work accidents.

4.3. Reform and improve capacity for health service delivery

- Review and reform the health service delivery system with an orientation towards strengthening collaboration and integration between levels and between prevention and curative care.
- Prioritize investments on primary health care at the grassroots level, and for vulnerable groups like women, children and the elderly.

Chapter II: Update and situation assessment of the Vietnamese health system

1. Key tasks of the health sector in 2014

To implement Prime Ministerial Resolution No. 01/NQ-CP dated 2 January 2014 on the major tasks and solutions to guide implementation of the 2014 socio-economic development plan and state budget, during the year 2014 the health sector has focused on the following major tasks:

1.1. Health sector governance

- Submitted the Law amending and supplementing a number of articles of the Law on Health Insurance to the National Assembly for approval; Submitted the Law amending and supplementing a number of articles in the Pharmaceutical Law (2005), the Law on blood and stem cells, the Law on population, and the Law on control of harmful effects of alcohol use to the National Assembly for feedback.
- Completed draft decrees guiding implementation of Laws issued in 2014 and circulars guiding decrees, especially the circular guiding implementation of Government Decree No. 85/2012/ND-CP, the circular on the health insurance drug formulary (lists of drugs and medical services reimbursed by health insurance), the circular guiding medical care referrals and referrals covered by health insurance.
- Submitted the project on strengthening capacity of the health inspectorate for the period 2014-2020 to the Prime Minister for approval. Focused inspections on the following areas: compliance with regulations on health insurance, social mobilization in health care, pharmaceutical governance and competitive tendering.
- Strengthened public administrative reforms in the health sector. Began piloting the project to assess the people's satisfaction with public health care services. Initiated the plan for implementing the project on reforming human resources management for civil servants and public servants.
- Boosted implementation of activities to strengthen effective implementation of the code of conduct for medical workers⁹. Effectively implemented use of hotlines for patient complaints and feedback. Implemented Circular 7 regulating the code of conduct for civil servants and employees of state health service units.

1.2. Human resources for health

- Began implementation of the pilot project to send newly graduated doctors to voluntarily serve in mountainous, remote, isolated, border, maritime and other socio-economically disadvantaged areas (with priority on the 62 poorest districts)¹⁰ and the policy of temporary rotations of medical practitioners from higher to lower level facilities.
- Began a study of salary levels appropriate with the special characteristics of the health sector to submit to the Government for approval in order to gradually incorporate salaries into the medical service charges according to the spirit of Government Decree 85 and National Assembly Resolution No. 68/2013/QH13.

⁹ Minister of Health Directive No 03/CT-BYT dated 1 April 2013.

¹⁰ Ministry of Health Decision No. 585/QD-BYT dated 20 February 2013.

- The health sector is in the process of developing long-term plans and comprehensive reforms of the health human resources training system, the quality assurance system for health human resources training, and quality standardization of graduates.

1.3. Health financing

- Focused on implementation of Government Decree No. 85/2012/ND-CP on the operational and financial mechanisms for state health service providers. In the process of developing a schedule of charges that incorporates all component costs of providing medical services to ensure that facilities are able to collect revenues and cover the full recurrent operational costs. Revised and supplemented regulations on social mobilization, joint ventures and partnerships in state hospitals to fit with the current situation (Decree No. 59/2014/ND-CP). Strengthened financial autonomy in state health service provider units. Gradually developing and implementing the roadmap for adjusting medical service charges set out in Decree 85 to incorporate full costs of providing the services.
- The Ministry of Health is in the process of reforming the method for allocating state budget funds to medical facilities towards results based payments and revising provider payment methods for medical services. At the same time, it is developing a mechanism for allocating state budget funds for preventive medicine facilities and other organizations and units such as those charged with quality control, accreditation, population and family planning, health information, education and communication.
- Focused on implementing the roadmap for universal health insurance (538/QĐ-TTg dated 29 March 2013); expanded health insurance coverage of the population, depth of the service package and financial protection for the insured. Continuing to implement Politburo Resolution No. 21-NQ/TW on strengthening leadership of the Party in social insurance and health insurance work for the period 2012-2020 and National Assembly Resolution 68/2013/QH13 dated 29 November 2013 on strengthening implementation of health insurance legislation.
- Ensured adequate funds for state budget purchase or subsidy of health insurance for the poor, people of merit, social welfare beneficiaries, to gradually shift state budget subsidies from providers to users, increased health insurance coverage to reduce the financial burden on the people seeking medical care.

1.4. Pharmaceuticals and medical equipment

- Ensured adequate essential drugs and medical equipment to serve preventive medicine and curative care needs and implemented effective measures to stabilize drug prices.
- Strengthened verification and monitoring to ensure drug quality and implementation of measures to ensure safe and rational use of drugs. Gradually reducing inappropriate use of drugs in medical treatment at both state and private medical facilities.
- Provincial health bureaus and state health service units are effectively implementing competitive tendering for procurement of drugs according to regulations in order to contribute to stabilizing drug prices. Strengthened the campaign promoting use of domestically produced drugs.

- Developed an action plan for implementing the National strategy on development of the pharmaceutical sector in Vietnam for the period to 2020 and a vision to 2030 and an action plan for the project promoting use of domestically produced drugs.

1.5. Preventive medicine, epidemic control and food safety

- Continued to strengthen health information, education and communication. Effectively implemented national health target programs and activities to prevent disease outbreaks, while quickly controlling the spread of any outbreaks that did occur.
- Focused on guiding food safety and hygiene activities. Guided activities to maintain high rates of immunization. Developed and implemented activities to prevent, control and manage NCDs, including heart disease, cancer, diabetes, occupational disease and injuries due to accidents.
- Continued to effectively implement HIV/AIDS prevention and control, expand ARV treatment, scale up methadone replacement therapy and implement Vietnam's three reductions (reduce HIV infection, HIV/AIDS-related deaths and stigma). Striving to achieve the United Nations 90-90-90 goal on prevention and control of HIV (90 percent of HIV infections detected; 90 percent of people with HIV receiving ARV treatment; 90 percent of HIV patients undergoing treatment achieving low HIV viral loads). Implementing the project to ensure sustainable financing for HIV/AIDS prevention and control.
- Developed a plan to implement Government Resolution No. 05/2013/NQ-CP on speeding up implementation of the MDGs related to health.

1.6. Grassroots health care

- Completed drafting of legal documents on the organization and activities of the grassroots health care system, including the functions and tasks of the district health center and commune health stations. Developed the project on strengthening the grassroots health system in the new situation.
- Strengthened and refined the grassroots health care network in terms of organization, physical facilities, medical equipment, health human resources and operating mechanisms in order to improve quality of primary health care services, meeting the needs for health care of the people in the community. Strengthened implementation of the family doctor project in order to draw lessons and scale up implementation in the period 2015 to 2016.

1.7. Medical services

- Focused on speeding up implementation of various infrastructure development projects including: completion of the Tan Trieu facility of the National Cancer Hospital (1000 beds); the National Hospital of Pediatrics; the pediatric oncology and cardiology center and outpatient clinic of Bach Mai hospital; and the oncology center and outpatient clinic of Cho Ray hospital. Accelerated progress in implementing some construction projects including the oncology center of general hospitals under the Ministry of Health in Uong Bi and Thai Nguyen. In 2014, began construction of secondary facilities of 5 tertiary care hospitals.

- Localities focused on completing construction and putting into use key district and provincial hospital facilities by concentrating funding from government bond funds allocated for the period 2012-2015 and 2014-2016, provincial budgets and other legal sources of capital.
- Focused on improving outpatient clinics, reducing waiting times for patients, reducing the number of patients seen by a doctor in a day. Working on gradually reducing overcrowding and doubling up in hospital beds. Focused on strong implementation of 15 satellite hospitals specializing in oncology, cardiology, pediatrics, obstetrics, surgery, and trauma.

1.8. Population and family planning

- Flexibly implemented measures to ensure reasonably low fertility and to reduce the imbalance in the sex ratio at birth.
- Proposed revisions and amendments to policies to take advantage of the period of the “golden population”, and to adapt to population aging.

2. Implementation status of the Plan for the protection, care and promotion of the people’s health, 2011-2015

2.1. Strengthen governance capacity in the health sector

2.1.1 Implementation status

1) Improve policymaking capacity and quality of health strategies, plans and policies

Implementation results

The Ministry of Health has collaborated with other related Ministries and sectoral agencies to develop and submit a number of important legal documents and projects to the Government and Prime Minister for approval. These documents serve as the basis for implementing activities in the health sector. Among these the Ministry of Health completed the draft Law revising and amending various articles in the Law on Health Insurance and submitted it to the Government; it was enacted in the 7th session of the National Assembly in June 2014. In addition the Ministry has completed a draft Law revising and amending various articles in the Pharmaceutical Law (2005) and submitted it to the National Assembly in May 2014. However, the Standing Committee of the National Assembly, in official correspondence No. 695/UBTVQH13-PL dated 22 June 2014, requested the Ministry of Health continue to study and prepare a new draft of the Law revising and amending various articles in the Pharmaceutical Law with an orientation towards broadening the scope of adjustments to develop the document into a Revised Pharmaceutical Law. The Ministry of Health is collaborating with relevant ministries and sectoral agencies to study the comments from the Standing Committee of the National Assembly in order to complete a new draft. Research and surveys are underway to develop a draft Law on blood and stem cells, a Law on control of harmful effects of alcohol use and a Population Law.

During 2013, the Ministry of Health has completed 100 percent of legal document development according to plans registered with the Government. Government decrees and resolutions, decisions and projects developed to submit to the Prime Minister for approval include Government Resolution No. 05/NQ-CP dated 13 January 2014 on strengthening implementation of the MDGs related to health; Decree No. 176/ND-CP dated 14 November 2013 regulating penalties for administrative violations in the field of health; and Decree No. 178/ND-CP dated 14 November 2013 regulating penalties for administrative violations in the area of food safety.

Several important prime ministerial decisions have been issued related to management mechanisms, policies and approvals of projects, which serve as the basis for implementing activities in the health sector such as: The Project on reducing hospital overcrowding for the period 2013-2020; the Project to ensure funding for HIV/AIDS prevention and control for the period 2013-2020; the Project on developing the health sector in maritime areas in Vietnam to the year 2020; the National strategy for tobacco control to the year 2020; the Project encouraging training and development of health human resources in specializations of TB, leprosy, mental health, forensic medicine and pathology for the period 2013-2020; the Project for developing a rapid warning system and analysis of food safety risks; the management mechanisms for temporary rotations of medical practitioners from higher to lower level medical facilities; increased subsidies for purchase of health insurance for certain near-poor household members; the Master plan for development of pharmaceutical ingredients to the year 2020 and orientation to 2030; and the Project to strengthen health inspection capacity for the period 2014-2020.

The Ministry of Health has also completed and submitted to the Government and Prime Minister several draft decrees, decisions and projects including: the draft decree detailing regulations for implementing articles in the Law on tobacco control; a draft decree on management of medical equipment; a draft decision on the Master plan for developing the health system to the year 2020 and vision to 2030 to replace Decision 153/2006/QĐ-TTg; and the Project for controlling imbalance in the sex ratio at birth for the period 2013-2020.

Regarding development and issuing of legal documents under the jurisdiction of the Ministry of Health, in 2013 12 joint circulars, 23 Ministry of Health circulars and many decisions have been issued in various areas including: medical examination and treatment, pharmaceuticals and competitive tendering for drug procurement, medical equipment and infrastructure, HIV/AIDS control, maternal and child health, technology and training, traditional medicine, health insurance, population and family planning, health environment management, and information technology. Several projects have also been approved by the Ministry of Health including the pilot project to send newly graduated doctors voluntarily to serve mountainous, remote, isolated, border, island and other socio-economically disadvantaged areas, the Project on satellite hospitals and the Project on family doctors.

The Ministry of Health has organized training on new legal documents including contents on monitoring and assessing the implementation of legislation and implementation skills; has evaluated implementation of legislation; has implemented newly issued legal documents; and has participated in explaining legislation and introducing new laws approved by the National Assembly.

The Ministry of Health is also implementing a review of 30 years of reforming the health sector, preparing contents related to the health sector for inclusion in the documents of the XIIth National Congress of the Communist Party of Vietnam and the Socio-economic development plan for the period 2016-2020.

Difficulties, shortcomings

Implementation of plans for developing legal documents is sometimes slow, thus the proportion of document drafting that was completed according to schedule is low. Some projects in the program for legislation development of the Ministry of Health have been submitted with delays to the Prime Minister, with many postponements of dates for submission.

Research and impact evaluation in legislative drafting programs have lacked funds, time and human resources. Work on dissemination and education about legislation has not received adequate attention. Dissemination, education on legislation and monitoring of implementation of legislation is only evaluated through written reports from various units; implementation of systematic codification of legal documents in the health sector is facing many difficulties.

2) Strengthen, refine and stabilize the organization of the health sector from the central to local levels

Implementation results

The Master plan for the Vietnamese health system to the year 2020 and orientation to 2030 is being finalized to submit to the Prime Minister for approval. The main goal of the Master plan is to ensure the systematic and continuous nature of professional activities within each level and between levels of facilities, to avoid fragmentation, and to improve effectiveness of investments and deployment of human resources, physical infrastructure and medical equipment. For the medical services network, the goal is to rank hospitals by standards, regardless of the administrative level of the facility, gradually moving towards eliminating hospitals that don't meet basic standards. Patients should be able to access medical facilities without constraints of administrative boundaries. For preventive medicine, investments are aimed at reducing the number of different organizations, standardizing and modernizing facilities; gradually reorganizing and integrating various centers to reduce the number of units at the provincial level and set up one provincial-level agency for preventive medicine and disease control.

The Ministry of Health has implemented a review of the organization of health sector units according to Government Decree No. 63/2012/ND-CP dated 31 August 2012 regulating the functions, tasks, authority and organizational structure of the Ministry of Health. The Minister of Health has approved the functions and tasks of the departments and administrations directly managed by the Ministry of Health. The Ministry has also guided each unit in developing and issuing internal regulations (including organizational and operational regulations) for each unit directly under the Ministry of Health and has revised the functions, tasks of several different health sector units.

Regarding the organization of the health sector in the provinces, the Government has issued Decree No. 37/2014/ND-CP regulating the organization of professional agencies under the district level people's committee, including stipulations that the district health bureau is the agency to support the district people's committee to implement state management functions in the area of health. The Ministry of Health continues to develop circulars regulating functions, tasks, authority and organizational structure of the district health centers.

The Ministry of Health is also continuing to draft decrees regulating the organization and management of health workers at the commune level to replace Prime Ministerial Decision No. 58/TTg dated 3 February 1994. The draft has been completed and is in the process of being

reviewed and obtaining feedback of various related ministries before it can be revised and submitted to the Government for approval.

Difficulties, shortcomings

Even though the Ministry of Health is urgently working on development of the Master plan for the Vietnamese Health System to the year 2020 and an orientation to the year 2030, progress has been slower than planned because the contents are complicated, related to many issues of organization, management, human resources at the central and local levels and managerial relations between central and local agencies.

The reorganization of the district health center into district hospital, preventive medicine services and district health office and reassignment of responsibility for supervising commune health stations created instability and disruptions in human resources and capacity to provide services at the grassroots level. Regulations on functions and tasks of district level units have many shortcomings, which have led to impediments to implementing professional tasks. The organizational structure of health facilities, especially at the district and commune levels have not yet been adjusted or completed to meet the changing disease patterns and needs for health care of the people. There is a lack of linkages and collaboration between preventive medicine and curative care, and between commune, district, provincial and central level facilities. Adjustments the district health system organization cannot yet be made because they require adjustments to the Law on organization of the People's councils and People's committees.

There is an imbalance in medical service delivery at different level facilities, lack of continuity of care and communication between different level facilities in the treatment, care and counseling of patients. There are almost no linkages between district and commune levels, especially in districts where hospitals have been separated from district medical centers, because of changes in the models of organization and management of the health sector at the district level that have occurred continuously over the past 15 years.

3) Strengthen the role and capacity for health sector management and planning

Implementation results

Regarding public administrative reforms, the Ministry of Home Affairs disseminated results of the public administrative reform index for 2013 for each ministry and ministry-level agency and provincial people's committee. According to this index, even though the Ministry of Health was ranked the lowest, considerable progress has been achieved, with an increase of 10 points in the index compared to 2012 to reach 74.19 points. The Ministry of Health issued Decision 436/QD-BYT dated 7 February 2014 containing the 2014 plan for public administrative reform of the Ministry of Health including eight areas: institutional reform, administrative procedure reform, administrative apparatus reform, development and strengthening of civil servant quality, public finance reform, implementation of a project to promote public service mechanism reforms and modernization of the administration and leadership.

Regarding planning, the Ministry of Health has evaluated and officially adopted (Decision No. 1058/QD-BYT dated 26 March 2014) the planning framework and guidance for developing plans at the provincial level, with support from the project on health system reform funded by the Rockefeller Foundation and the Health Sector Capacity Support system reform Project funded by the EC.

The Ministry of Health continues to organize training courses to strengthen capacity for health sector management and planning. From May to July 2014, the Ministry of Health organized training courses for officials in the provincial health bureaus and in units under their direct management in order to improve capacity for health sector planning and budgeting funded by the EC and the Rockefeller Foundation. Some training courses on management and planning have also been implemented in the framework of various health sector strengthening projects funded by the Vaccine Alliance (GAVI), the Global Fund, and other international organizations.

Following the training, some localities have begun to develop their provincial health plans following the new planning framework and forms, which has led to some initial improvements.

Difficulties, shortcomings

In the Ministry of Health, the Technical Working Group on Planning and Finance in the Health Partnership Group (HPG) was established in 2012. However by 2013 the activities were still not regularly undertaken, and there is a lack of concrete mechanisms for working to contribute jointly to health sector planning and finance tasks.

Even though all localities have developed plans according to the new guidance, implementation remains difficult because localities can only ensure part of the fixed budget, and face great difficulty in mobilizing additional funds. They are subject to low spending norms so there is a gap between budgeted funding needs (following norms) and actual funding needs. Planning officials do not yet have strong motivation to change their planning methods towards greater detail and concreteness.

Information and statistical data to serve planning needs have not improved much over the past few years. Data are still not received in a timely fashion and suffer from inaccuracies and unreliability, making evidence-based planning and policymaking difficult. Health policy impact evaluation is not regularly implemented to identify problems with policies and make timely adjustments.

4) Strengthen inspections, checking and supervision

Implementation results

The Ministry of Health has developed and submitted to the Government a draft decree on the organization and activities of the health inspectorate. In the face of various events occurring in the health sector (adverse vaccine reactions, copying of laboratory test results from one patient for use by other patients, etc.), the Ministry of Health has developed and implemented a health inspection plan, focused on the following areas: state management of food safety, insecticides and disinfectants used in households and medical establishments, sales and use of infant nutrition products, comprehensive inspection of some central hospitals, private medical facilities, implementation of legislation and policies on health insurance, social mobilization, state management of pharmaceuticals and competitive tendering for drug procurement, drug prices and use of drugs, implementation of the mechanism on financial revenues and expenditures and prevention and control of corruption, and implementation of activities to reduce waste and ensure savings. Through inspections and checking, recommendations have been made to overcome shortcomings of policies and legislation, to stabilize the organization of units directly under the Ministry of Health's administration, and to deal severely with any individuals or organizations that violate regulations.

The health inspectorate in 63 provinces has implemented inspections on food safety, medical services, pharmaceuticals and cosmetics and medical equipment in 703 762 facilities. Through the inspections they have detected violations and imposed fines totalling 30.8 billion VND, closed down 325 medical/pharmaceutical facilities and temporarily withdrawn licenses for 19 pharmaceutical and medical establishments.

Difficulties, shortcomings

Difficulties and shortcomings of the health inspectorate pointed out in the JAHR 2013 report have not yet been fully resolved. These include understaffing, with only a few inspectors in each province and the lack of any inspection functions at the district level. Funds allocated for inspections, checking and supervision are limited, despite the fact that these functions are among the basic functions of state management of the health sector.

Currently, inspection and checking activities are reactive, primarily implemented after incidents have occurred, rather than pro-active to prevent incidents. Supervision has received inadequate attention in state management agencies at the central and provincial levels due to lack of funds, lack of human resources and a large volume of work and large number of units to be checked and monitored. Consequently this management responsibility has not been fully implemented.

The work of internal checking of health service providers has not been fully implemented. There is a lack of instruments for internal supervision and checking for each unit to detect problems on its own within the unit and to intervene in a timely manner before incidents occur.

5) Strengthen participation of stakeholders in the process of policymaking, planning and implementation

Implementation results

The Ministry of Health continues to make major efforts to strengthen participation of stakeholders in the process of formulating policies. This is a mandatory requirement in the health sector policymaking procedures. In the process of developing health sector strategies and master plans attention has been paid to ensuring the participation of stakeholders, gathering evidence, undertaking evaluations, and requesting feedback from a wide range of ministries, sectoral agencies, provincial people's committees, provincial health bureaus, health development partners, and the people. Drafts of various documents and policies of the Ministry of Health have been posted on the Ministry's webpage and the Government webpage to obtain feedback from stakeholders. Workshops and seminars have been organized to gather comments directly and to request written feedback from ministries, sectoral agencies and experts.

Difficulties, shortcomings

Despite the many efforts, the participation of stakeholders in the policymaking process and the implementation of health sector activities remains limited; some channels for providing feedback remain rather superficial, procedural and ineffective.

Little feedback has been obtained from the people, sectoral agencies and mass organizations in response to information posted on the Ministry of Health and Government websites.

6) Promote appropriate social mobilization measures; Encourage all ownership sectors to invest in development of healthcare services

Implementation results

The Ministry of Health has issued Directive No. 05/CT-BYT dated 22 May 2014 on strengthening checking, and making revisions in policies on social mobilization, provision of medical services on request and at higher than administratively set prices within public medical facilities.¹¹ In order to strengthen and bring into play the positive effects of these policies, to detect in a timely manner and correct any negative effects, the Ministry of Health is urgently developing a circular guiding provision of medical services on request in public facilities to revising and amend Circular No. 15/2007/TT-BYT. At the same time, the Ministry of Health has also strengthened checking to detect shortcomings of social mobilization activities in the health sector. At the end of 2013 and the beginning of 2014, the Ministry of Health has organized several evaluation teams and has requested facilities to undertake their own evaluations and reviews.

Regarding the development of the private health sector in the area of medical services provision, according to data of the Medical Services Administration (MSA), currently there are 170 private hospitals nationwide, with 8627 hospital beds, accounting for 11 percent of total hospitals nationally, and more than 30 000 private clinics and other medical service facilities. Private hospital beds account for 4.2 percent of total hospital beds, the equivalent of about 1 hospital bed per 10 000 people [44]. Almost all these hospitals have relatively good physical infrastructure and equipment; the physicians are dedicated and attentive to their patient needs. Development of private hospitals will contribute to increasing the total number of inpatient beds and the capacity to respond to the needs for medical examination treatment of the people.

Regarding strengthening public private cooperation, in February 2014, the Ministry of Health and the World Bank collaborated to organize a workshop on “Building Public Private Partnerships in Providing Medical Services”. The Ministry of Health has organized two seminars on strengthening collaboration between state and private hospitals and implemented the project on reducing hospital overcrowding in southern provinces. Some measures proposed to strengthen cooperation between these two types of hospitals include: cooperation to apply high-tech medicine, professional consulting and support, transfer of patients from state to private hospitals during periods of overcrowding, private hospital participation in the satellite hospital network and establishment of an open mechanism and policy that allows doctors from the public sector to perform examinations and treatments at the invitation of private hospitals or to serve patients in private hospitals after hours.

Difficulties, shortcomings

Results of inspections and monitoring indicate that there remain limitations in the process of implementing social mobilization. Some facilities have not followed correct procedures in implementing social mobilization. For example some units have not developed a project document, have not yet discussed issues openly and in a democratic manner, or have

¹¹ Services on request include, for example, choice of doctor to perform surgery or procedure, patient request to stay in intensive care ward, obtain diagnostic testing or imaging not indicated by the doctor or undertake diagnostic or treatment services using high tech equipment rather than the standard equipment, request to stay in a higher class ward with more amenities, or obtain medical examinations with lower waiting times, in return for patients paying higher fees or additional fees on top of official hospital fees.

not reported to higher level authorities for regulatory monitoring and management. Some have not yet developed the price schedule according to regulations, have not posted prices openly for the people to consult before choosing where to seek care or have tended to seek only ways to increase revenues, which could easily lead to overprovision of unnecessary services, drugs, tests, and low efficiency. The organization of clinics and rooms to provide special services on request (and for higher fees) within public facilities is currently inappropriate, leading patients to feel that they are being discriminated against or causing unease about the lack of transparency between public and private services within public hospitals.

Few of the private hospitals have built up strong reputations, so the proportion of total medical services provided in private hospitals remains low, only about 7 percent of all outpatient visits and 6 percent of inpatient admissions, while 56.9 percent of private hospitals have bed occupancy ratios below 60 percent. Private hospitals currently only serve about 4 percent of total healthcare contacts covered by health insurance reimbursement.

Regarding public-private partnerships, implementation is facing many difficulties due to lack of guidance and regulations. There is not yet a systematic mechanism or a comprehensive policy on public-private cooperation in the health sector covering forms of investment. Procedures for implementation are currently complicated and there is a lack of clarity in the use of state budget funds, which have led public-private partnerships in the health sector being less attractive investments for private investors.

2.1.2. Recommendations for supplementary measures

1) Improve policymaking capacity and quality of health strategies, plans and policies

- Strengthen policymaking capacity of civil servants in departments, administrations and institutes of the Ministry of Health through various measures, starting with organizing training in Vietnam and overseas.
- Determine clearly the sources of funding for plans and strategies, with appropriate fund mobilization approaches, to ensure adequate financial resources for implementation.

2) Strengthen and stabilize the organization of the health sector from the central to local levels

- Organize reviews and evaluation of the provincial and district health sector organizational model to make adjustments to the organization, operating mechanism, functions and tasks of preventive medicine and curative care units appropriate with reality in the localities. Develop a mechanism for collaboration and integration between health sector units and with health programs for provision of preventive medicine, health promotion and curative care service delivery, especially at the grassroots level.
- Promptly complete development of legal documents related to organization of the health service delivery system focusing on improving quality and making primary health care the foundation, in order to achieve effectiveness, accessibility and affordability.
- Develop competency standards for basic service provision for the district and lower level facility network.

3) Strengthen the capacity for health sector management and planning

- Develop incentive mechanisms for reforms of the planning and budget processes in the provinces and districts, including approval of a health sector planning protocol in various sub-sectors, at different levels of the health system and improvements in budget planning for plan implementation.
- Promptly determine the orientation and begin development of the Five-year health sector plan for the period 2016-2020, ensuring consultation with donors so the contents of the plan is tightly linked with priorities of the health sector during the upcoming period. Link development of the plan with annual plans for monitoring and evaluation of the contents of the plan.
- Consolidate components and develop contents and activity programs of the technical working group for health planning and finance to contribute effectively to health planning and finance.

4) Strengthen inspections, checking and supervision

- Strengthen checking and supervision to monitor and evaluate implementation of health policies at the central and local levels in order to detect difficulties and shortcomings in a timely fashion so appropriate policy adjustments can be made.
- The Ministry of Health and the localities must allocate an appropriate share of budget for checking and supervision, and consider these as focal tasks of state management in health.
- Develop a mechanism to gather comments and provide feedback to relevant stakeholders (local implementing agencies, the people, enterprises) in the process of implementing policies.

5) Strengthen participation of stakeholders in the process of policymaking, planning and implementation

- Strengthen policy dialogue between agencies that formulate policies and those that implement them, and between researchers and the people, through seminars, workshops, forums and websites.
- Strengthen development of evidence-informed policies. Implement concrete research in the form of commissioned studies between management agencies and research units so that the output of research can be used directly in policymaking.

6) Promote appropriate social mobilization; encourage all ownership sectors to invest in development of healthcare services

- Strengthen checking and monitoring of social mobilization in the area of medical services at the central and local levels
- Urgently develop a circular guiding provision of medical services on request and at higher prices within public medical facilities; revise and amend Circular 15/2007/TT-BYT guiding social mobilization.

- Develop an adequately strong legal basis, specifically for promoting public-private partnerships in the health sector. Develop and implement pilots of investment programs following specific models of public-private partnership to draw lessons and refine and develop the models. Develop a public-private partnership mechanism that is effective, efficient and overcomes the limitations of the current model of social mobilization in the health sector.

2.2. Health human resources

2.2.1 Implementation status

1) Develop health human resources of sufficient quantity and assured quality, balance the structure and ensure reasonable distribution to meet the task of protection and care of the people's health

Implementation results

The number of health workers of different types has increased over time, including the number of doctors, university-trained pharmacists¹² and nurses. In 2013 staffing in state facilities achieved 7.5 doctors per 10 000 people and 2.1 university trained pharmacists per 10 000 people [45]. Comparison of these achievements with the target of 8 doctors per 10 000 people and 1.8 pharmacists per 10 000 people in the five year health sector plan 2011-2015 indicates that the target for university-trained pharmacists has already been exceeded. The ratio of doctors per 10 000 people is still somewhat low compared to the planned target. Note that these figures do not consider assistant doctors as doctors.

District health facilities have also seen improvements in health human resources. The number of health workers in the public sector increases each year. The number of doctors at the district level increased from 15 521 in 2010 to 16 213 in 2011 and 16 738 in 2012. The number of university-trained pharmacists in district hospitals has also increased from 698 in 2010 to 1009 in 2012. The ratio of university-trained pharmacists to doctors has also increased, rising most rapidly in the Mekong River Delta. The proportion of district hospitals without a university-trained pharmacist has fallen from 21.3 percent in 2010 to 19.9 percent in 2012 [46].

At the commune level, nearly all commune health stations nationwide have health workers. In 2013, 76.9 percent of commune health stations were served by a doctor three or more times per week [45]. This proportion is lower in mountainous districts of the north, in the Central Highlands and in the Mekong River Delta. In some mountainous, remote and isolated districts, the number of commune health stations served by a doctor has declined. Compared to the target of 80 percent of communes being served by a doctor in 2015, the above proportion indicates a substantial shortfall. However, in the context of the current inadequate remuneration regime, ineffective recruitment policy for health human resources and brain drain of doctors, achievement of this target is very challenging. The structure of the health workforce by occupation at the commune level has not changed, with doctors maintaining their share at about 11% of all commune health workers. The proportion of the health workforce consisting of assistant doctors, midwives, junior college and secondary vocational-trained nurses is stable,

¹² The term university-trained pharmacist will be used to refer to only those with a university level degree. All other pharmaceutical staff with lower levels of training will be called pharmacist assistant or pharmacist technician as appropriate.

ensuring the implementation of assigned tasks [47]. Some 97.3 percent of commune health stations have a midwife or obstetric-pediatric assistant doctor (compared to the target of 95 percent); 95.7 percent of villages are served by a village health worker (target was set at 90 percent) [45].

Sources of newly trained health workers are plenty. The number of training facilities and their size continue to grow, although not as rapidly as in the past. The number of medical university graduates continues to rise rapidly, in 2014 the number of newly graduated medical doctors was greater than 7000, an increase of more than 1000 compared to 2013. It is estimated that in the next three years, this figure will continue to increase at the same pace. The number of university-trained pharmacists graduating each year has also increased from more than 1000 in 2009 to more than 2000 in 2012 and about 3000 in 2013. The supply of nursing graduates is quite large, including graduates from universities, junior colleges and vocational secondary schools. With a student recruitment quota for secondary school-trained nurses of about 10 000 in 2006, gradually increasing to 20 000 in 2014; the quota for junior college-trained nurses increasing from more than 1000 in 2006 reaching nearly 15 000 in 2013; and the quota for university-trained nurses rising from more than 1500 in 2006 to nearly 5000 in 2013, the supply of health workers now exceeds the need of the health system. The oversupply is also evident for assistant doctors, secondary-trained pharmacists and in the near future is expected among junior college-trained pharmacists [48].

In order to continue to resolve the irrational distribution of health human resources between regions and specialties, the Ministry of Health continues to develop and implement policies for health human resources development. Prime Ministerial Decision No. 319/QĐ-TTg dated 7 February 2013 approved the Project encouraging training and development of health human resources in the specialties of TB, leprosy, mental health, forensic medicine and pathology for the period 2013-2020. This policy, along with regulations related to preferential policies and salary supplements specifically for these specialties, has begun to resolve the problem of attracting health workers into these specialties [49]. The pilot project to send newly graduated doctors voluntarily to serve in mountainous, remote, isolated, island and other socio-economically disadvantaged areas (priority for 62 poor districts) was approved by the Minister of Health and began to be implemented in 2014. It is expected that by 2016 there will be about 500 newly graduated doctors working in these disadvantaged areas, including in the 62 poorest districts.

In addition to policies for expanding the number of health workers, the health sector is also implementing methods aimed at improving the quality of health human resources. For the first time, all medical practitioners (doctors, assistant doctors, nurses, midwives, medical technologists, herbalists,¹³ owners of a family herbal remedy or treatment method¹⁴) in the public and private sectors, will be issued medical practice certificates, gradually leading to international and regional integration. The Ministry of Health has issued a set of standard core Vietnamese midwifery competencies¹⁵ and is currently finalizing the draft of core competencies required of general practitioners, which are expected to be issued in 2015. Core competencies required of dental doctors and level I specialists in the fields of surgery and obstetrics are

¹³ Herbalist means a person knowledgeable about traditional theories and experienced in providing examination and treatment with traditional medicine methods with or without drugs, which are recognized by the Ministry of Health or provincial-level Health Departments;

¹⁴ Owner of a family herbal remedy or treatment method means a person owning an old remedy or treatment method passed from one generation to another of a family or family line and is recognized by a provincial-level Health Department.

¹⁵ Ministry of Health Decision No. 342/QĐ-BYT dated 24 January 2014.

currently being developed. These documents will serve as an important legal basis for managing the quality of health human resources.

Difficulties, shortcomings

There is a lack of health workers with advanced qualifications and strong skills at the commune and district level and in socio-economically disadvantaged regions, making it difficult to satisfy health care needs in these localities. At the central level, 45 percent of health human resources have university or higher training, while in the provinces this figure is 23 percent. In the provinces, 50 percent of doctors and 69 percent of university-trained pharmacists work at provincial level facilities, 34 percent of doctors and 31 percent of university-trained pharmacists work at the district level and 17 percent of doctors and 1 percent of university-trained pharmacists work at the commune level [9].

Distribution of health human resources remains imbalanced, with university-trained health workers mainly working in municipalities and other economically developed regions. In 2010, 48 percent of all university-trained pharmacists worked in Hanoi and HCMC. Some 92 percent of university-trained pharmacists in these two municipalities work in the private sector. These university-trained pharmacists in the private sector of the two major municipalities account for more than half of all private university-trained pharmacists nationwide [50]. The ratio of doctors per 10 000 people nationally has increased steadily and in some localities it is rather high, yet in some provinces of the Mekong River Delta and Southeast, these ratios remain low [47]. One of the reasons for this situation could be related to the movement of medical doctors from the public to the private sector and from provinces to municipalities. In the northern region in general and the mountainous areas in particular, the private health sector is less developed, so when doctors graduate from medical school (mostly from programs upgrading assistant doctors to medical doctors), they tend to work mainly in the public sector, as seen in the rapid increase in the ratio of doctors per 10 000 people. On the other hand in the south, the private health sector is more developed, paying higher incomes to staff than in the public sector, making work in this sector more attractive, leading to a higher proportion of doctors working in the private sector in that region.

Province health facilities of mountainous and remote areas have experienced difficulties in recruiting medical doctors and university-trained pharmacists to meet their personnel needs. Within hospitals, doctors prefer to work in the specialties that allow them to earn higher income, which consequently leads to shortages of doctors in some fields, such as infectious disease and pediatrics [51]. In provincial general hospitals, the number of university-trained pharmacists account for 19.6 percent of all pharmaceutical staff of these hospitals. Regional disparities exist in availability of university-trained pharmacists working in hospitals. The average number of university-trained pharmacists per provincial hospital is highest in the Southeast (8.8 pharmacists per hospital) and lowest in the Central Highlands (3.6 pharmacists per hospital), while in the five municipalities¹⁶ the total number of pharmacists is higher than the total for all other provinces combined. So far no region or area has achieved the recommended ratio of one university-trained pharmacist for every 8 to 15 doctors according to Circular No. 08/2007/TTLT-BYT-BNV [52].

District facilities still face problems with the quality of health human resources. The proportion of health workers with only secondary vocational training is high, in some areas

¹⁶ Hanoi, Hai Phong, Da Nang, HCMC and Can Tho.

up to 84 percent. There is a situation in which doctors request transfers or quit their jobs [53]. Some district health centers must assign doctors to work at the commune level some of the time, adversely affecting the workload of the remaining doctors [54]. The number of university-trained pharmacists in district hospitals has increased, but distribution is not even across regions, being highest in the Red River Delta (18 percent of district hospitals) and lowest in the Central Highlands (9.2 percent of all district hospitals) [46]. Almost all districts are without a university-trained pharmacist [47].

Nationally over 70 percent of commune health stations are served by doctors, but in disadvantaged regions, the proportion of commune health stations served by doctors is as low as 30 percent. The most socio-economically disadvantaged regions of the Northwest, Central Highlands, North Central and Central coastal areas and the Mekong River Delta have the most severe shortages of doctors. The proportion of commune health stations served by a doctor in remote and isolated regions is very low such as in the provinces of Lai Chau (4.1 percent), Dien Bien (18.8 percent), Dak Nong (38 percent) and Quang Nam (24.2 percent) [18]. The competencies of commune health workers is weak, the rates of appropriate diagnosis and rational prescription of drugs are low, the proportion of patients referred is high and diagnostic tests are overused [55].

The ratio of nurses to doctors in medical facilities is relatively low, with only 1.3 nurses for every doctor, despite the large number of nurses graduating with secondary vocational through university degrees each year. The reason for this imbalance is that hospitals are not hiring sufficient numbers of nurses because they are not implementing comprehensive care models. At the same time the implementation of hospital autonomy motivates health facilities to cut costs of inputs, such as nurses.

According to the Law on Examination and Treatment, medical practice certificates are issued to all practitioners with the relevant diploma after completing a certain period of practice post-graduation. These medical practice certificates are valid for the entire medical career of medical practitioners, which makes it difficult to ensure a basic quality standard among practitioners who have similar diplomas, such as medical doctors, but granted in different years.

In the pilot project sending new medical school graduates to voluntarily serve disadvantaged areas, each newly graduated doctor will serve the disadvantaged area for a period of 3 years, yet they will have been accepted into permanent employment at a higher level hospital prior to their period of service in the disadvantaged area. Thus, after about 3 years, these localities will again have to find new health workers. Attention must be paid to funding to support these newly graduated doctors, otherwise sustainability of the project is not assured.

2) Continue efforts and strategies for deployment of health human resources

Implementation results

The Ministry of Health continues to implement measures to improve quality of health human resources and strengthen competencies at lower levels through several projects. Project 1816 continues to be implemented, although the modality has been transformed from supporting health workers in lower level facilities towards training and technology transfer. Implementation of the Satellite hospital project for the period 2013-2020 has begun. In the first phase, from 2013 to 2015, 14 hub hospitals have been assigned responsibility to develop 45

satellite hospitals in 32 provinces [49]. The main activities of the project include hub hospitals training health workers, transferring technology, providing medical equipment and advising on medical examination and treatment from a distance through the internet (telemedicine) for satellite hospitals. The project on developing the model of family doctor for the period 2013-2020 was approved by the Minister of Health in Decision No. 935/QD-BYT dated 22 March 2013, with the goal of developing a family medicine clinic model in the health system nationwide to provide basic, comprehensive, and continuous health care services for individuals, families and the community, thus contributing to reducing hospital overcrowding. Nationally, HCMC is the locality that has taken the lead in implementing the family medicine clinic model. By the end of 2013, HCMC had about 200 doctors trained in family medicine. This model is considered to have great potential to reduce overcrowding of higher level hospitals and to gradually strengthen quality of grassroots health care [56]. The health sector also has various programs, projects and activities for technical assistance, mostly focused on the provincial level (about 50 percent), followed by the district level (36 to 38 percent). These technical assistance projects have strengthened medical equipment in regional and provincial hospitals [57].

To resolve the problem of inappropriate conduct of health workers when dealing with patients, the Ministry of Health has organized 11 training courses on communication skills, proper treatment, improved professional and medical ethics, and learning and modelling behavior based on the ethics of Ho Chi Minh for 5042 key health workers in hospitals throughout the country [49]. The attitudes and behavior, and treatment of patients by health workers in some health facilities has begun to change in a positive direction, leading to increased satisfaction rates among patients [58].

Governmental Decree No. 117/2014/ND/CP stipulating the organization and human resources management policy for commune health workers was approved to replace Prime Ministerial Decision 58/TTg dated 3 February 1994 after being presented at many workshops to obtain feedback from localities and comments from other relevant ministries and sectoral agencies.

Difficulties, shortcomings

No remarkable changes have occurred in the deployment and recruitment mechanisms for health workers in localities and at health facilities. The salary and remuneration policies for health workers remain inappropriate, not in line with the long periods of training, labor effort and working environment and conditions, especially in mountainous and rural areas. The policy to attract health workers to work at the grassroots level, in disadvantaged areas is inadequate and [51]. Some localities have not yet fully implemented new remuneration policies, including the special salary supplement for health workers (for overnight and weekend duty, for surgery and procedures) according to Decision No. 73/2011/QD-TTg, and raises have not been paid on time due to budgetary difficulties following the increase in the minimum wage [49].

Health worker conduct towards patients remains a major problem of the health sector and has been a major source of dissatisfaction of society, patients and relatives in recent years. The proportion of patients giving bad evaluations of health worker attitude remains high [59]. Patients and their caregivers are dissatisfied with many aspects of health care quality in hospitals, including quality of service and communication with doctors and other health workers [60].

Implementation of the Satellite hospital project and Project 1816 faces some difficulty. Many localities have not yet determined concretely which technologies need to be transferred,

and technology transfer has not taken into consideration conditions of physical infrastructure and medical equipment at lower level facilities [61]. Even though the Satellite hospital project and Project 1816 have been implemented over several years, overcrowding in central level facilities has not seen much improvement. Many technical assistance activities are dependent on external assistance [57].

Human resources management in some localities and medical facilities remains weak. Sending health workers to lower level facilities sometimes leads them to quit their regular position, because remuneration is inadequate, they have to live far from their family, and working conditions in the receiving facility are weak. The mechanism for managing health facilities and deploying leaders and managers at different levels within the health facility has many shortcomings, particularly the reduction of health workers performing medical work when they become managers [51]. The work environment at medical facilities does not meet requirements for providing quality medical services; in many localities equipment is inadequate or obsolete, causing hardship for health workers in performing their work.

3) Continue to improve quality of training at medical training establishments

Implementation results

On 4 November 2013, the 8th plenum of the 11th Central Committee of the Communist Party of Vietnam issued Resolution No. 29-NQ/TW on fundamental and comprehensive reforms of education and training, including the guiding perspective that it is necessary to reform even the leadership of the Communist Party, state management, and administrative activities of education and training facilities, mobilize the participation of the society, community, students/pupils, and implement reforms at all levels and fields of study. The Ministry of Health is currently developing an action plan to implement this resolution.

The legal system guiding training of health human resources is being developed and refined in order to achieve the goal of improving training quality. Circulars guiding training for Specialist I, Specialist II and resident doctors are being developed to replace existing circulars that are no longer appropriate. Currently drafts have been sent out for feedback from relevant units such as training establishments and employers of health workers. In order to resolve the situation of low quality of training in programs for upgrading skills in the health sciences, especially training of assistant doctors to become doctors, the Ministry of Health is developing a new circular guiding upgrade training from junior college to university level in the health sciences. This circular will replace Circular No. 06/2008/TT-BYT used previously to guide recruitment into upgrade training and official letter No. 1915/BYT-K2DT dated 8 April 2013. At the same time, the Ministry of Health has also sent various documents to the Ministry of Education and Training proposing control over quotas for recruiting students into some medical fields that have a surplus of graduates, regulation of upgrade training and training of local people who are committed to returning to their origin locality, and imposing tighter regulations over new codes for various fields of training. The Ministry of Health has also begun to organize development of legal documents related to linkages between hospitals and medical schools for practical training to replace Circular No. 09/2008/TT-BYT dated 1 August 2008 that guided collaboration between health worker training establishments and training hospitals for training, scientific research and health care of the people. These regulations are no longer appropriate in the context of financial autonomy at hospitals and the severe lack of opportunities for students to obtain practical training (see difficulties below).

In 2014, the Ministry of Health began to implement a project on health professional education and training to serve health system reform, aiming at: (i) reforming health human resources education through developing an education quality accreditation system and reform of training curriculum; and (ii) strengthening capacity for the grassroots health system. The Health human resources sector development program funded by the Asian Development Bank continues to be implemented in 17 medical and pharmaceutical universities and junior colleges, investing in training equipment for core courses, and training of instructors and development of training curricula for core subjects. It is expected that after completion of the first phase, the project will continue to support schools in a second phase of the project. Many other ODA projects also involve training activities to strengthen capacity of health workers in both professional medical work and management.

Education quality assurance activities are beginning to be implemented on a regular basis by medical schools. University and junior college training establishments all have quality assurance units and have implemented self-assessment activities following Ministry of Education and Training guidelines.

Difficulties, shortcomings

Training quality of medical schools, especially hospital-based practical training, is a major issue in need of greater attention. Because of the very large number of students recruited each year at all levels and small number of training hospitals, it is difficult to arrange opportunities for students to undertake clinical practice in hospitals. In addition, the hospital financial autonomy mechanism disincentivizes hospitals from creating costly practical training positions for students. The quality of training for a given medical occupation, for example doctors, is not uniform across schools or between different modalities of training such as upgrade training and formal pre-service training because of the quality of students recruited and different requirements during the training process. This situation leads to different quality of graduates from different schools, while the health sector lacks a national exit examination after training for ensuring health human resources certified to practice medicine have similar core competencies.

Medical training quality assurance remains ineffective. Implementation of Ministry of Education and Training regulations on quality accreditation and ensuring quality of education in schools requires all schools to implement self-assessment and establish quality assurance units within schools. However, quality assurance in many schools remains superficial, consisting of a form of coping with the regulations rather than truly contributing to improving quality of training in medical schools. If quality assurance is not implemented strictly, not only will it be ineffective, but it will lead to waste of resources.

4) Continue to improve management of continuing medical education

Implementation results

The Ministry of Health is gradually completing the legal system for managing health human resources training. In order to determine policies and strategies for upcoming years related to continuing medical education of health workers, the Ministry of Health is in the process of developing a Strategy on continuing medical education for health workers. Circular No. 22/2013/TT-BYT dated 9 August 2013 was issued to replace Circular No. 7/2008/TT-BYT

dated 28 May 2008 guiding continuing medical education for health workers. The Ministry of Health sent an official letter No. 2034/BYT-K2DT dated 18 April 2014 to provincial health bureaus, hospitals, and research institutes under the Ministry of Health instructing them on strengthening quality of continuing medical education. This document emphasized quality assurance for continuing medical education courses and requires that training courses related to technology transfer must have concrete competency standards that each trainee must achieve in order to be issued a training certificate. The Ministry of Health is beginning to organize development of a circular on the organization of post-graduation practical training requirements for obtaining medical practice certificates.

The number of approved continuing medical education training establishments continues to increase. The Ministry of Health currently issues permits for units that participate in continuing medical education such as hospitals, provincial health bureaus, health centers and medical schools. Two training centers for health managers have been set up in the Hanoi School of Public Health and the HCMC Institute of Public Health and have taken on the task of management training for health workers throughout the health sector.

Difficulties, shortcomings

The number of continuing medical education training courses has fallen as international assistance, which has played a leading role in organizing continuing education, has declined. The quality of many continuing medical education courses is not assured through an accreditation system. Many courses that have issued training certificates have been assessed as having low effectiveness by the facilities sending staff for training. Many health workers at the grassroots level cannot access continuing medical education courses due to lack of funds, long distance to reach the courses or lack of courses to meet specific current needs. In some locations, the shortage of health workers makes it impossible for health facilities to release staff for training to improve their qualifications, especially for long-term training [51].

2.2.2. Recommendations for supplementary measures

In order to successfully implement the five-year health sector plan for the period 2011-2015, the health sector and related agencies should implement the following measures:

1) Develop health human resources of sufficient quantity and assured quality, balance the structure and ensure reasonable distribution to meet the task of protection and care of the people's health

- Collaborate between public and private facilities to ensure sufficient health workers in regions with a highly developed private health sector.
- Ensure strong compliance with regulations on recruitment, deployment, and implementation of preferential policies (for disadvantaged areas), as well as in organization of pre-service training, clinical training and continuing medical education.
- Preferential policies for recruitment should go beyond those put in place by the health sector; provincial authorities facing shortages of health workers must also develop policies and preferential remuneration of their own to be able to attract health workers with university-level training including doctors and pharmacists.

- Develop policies to attract pharmacists to work in the provinces and districts. Regularly organize training courses on clinical pharmacy and management of cosmetics for pharmacists in the provinces. Study the possibility of integrating the current tasks of commune health workers with tasks of pharmaceutical technicians to take drug samples for testing, and deploy pharmacists appropriately at commune health stations.

2) Continue efforts and strategies on deployment of health human resources

- Implement existing human resources management mechanisms and policies; ensure implementation of existing preferential salary supplements for health workers.
- Pilot comprehensive patient care in selected medical facilities, evaluate results and scale up in order to strengthen deployment of nurses. Practitioner attitude and conduct towards patients must be improved as part of the pilot.
- Revise the Law on Examination and Treatment, replacing the lifetime validity of medical practice certificates with time-limited certificates. Make participation in continuing medical education one of the main requirements for renewing medical practice certificates. Develop competency testing before issuing medical practice certificates to medical practitioners to ensure that they meet basic competency standards, regardless of where they studied and which form of training they have obtained.

3) Continue to improve quality of training at medical training establishments

- Implement accreditation for education programs in the health sciences, especially imposing standards for practical training within hospitals.
- Require medical schools to develop strategies to ensure quality of education and training, including consideration of the appropriate size of enrollment to avoid large classes negatively affecting quality.

4) Continue to improve management of continuing medical education

- Implement quality assurance for continuing medical education establishments and programs.
- Require health facilities to develop continuing education and professional development plans for their personnel, using various strategies for capacity building.

2.3. Health financing

2.3.1 Implementation status

The section below provides an assessment of implementation of health financing tasks of the Five-year health sector plan and priorities for 2014 following Government Resolution No. 01/NQ-CP (2014). It covers implementation status, difficulties, challenges and proposals for supplementary measures.

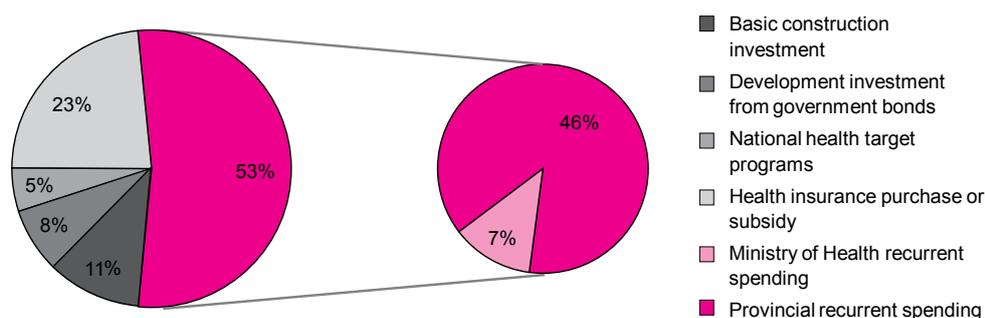
1) Increase state budget spending on health, increase the public share of total health expenditure, reduce the out-of-pocket health spending share

Implementation results

In the period 2013-2014, in the context of a challenging and difficult macroeconomic situation, the Government’s policy has been to tighten control over state expenditures. Nevertheless recurrent spending funds continue to be allocated to implement certain priority tasks including: spending on curative care and preventive medicine, allocations to the reserve fund for prevention and control of epidemics, budget for salary reform (including implementing preferential salary supplements for health workers in direct contact with patients or working in less attractive specialties in the public sector according to Government Decree No. 56/2011/ND-CP dated 4 July 2011), and projected funding amount for amending and revising special salary supplements for epidemic control, performing surgery and procedures and for overnight duty for health workers in public health facilities according to Government Decision No. 73/2011/QD-CP dated 28 December 2011. The state budget also ensures partial funding for implementation of national health target programs according to decisions of the agencies in authority. The state budget also ensures adequate funds for purchase of health insurance for the poor, children under age 6, and premium subsidies for individuals in agricultural households and near poor households, for school pupils and students to obtain health insurance according to the Health Insurance Law and other priorities of the Government following Resolution No. 01/NQ-CP in 2014.

Total state budget spending on health includes not only recurrent spending, but also counterpart funds on ODA projects, investment funds for basic construction, spending from lottery revenues and government bond funds. Out of total state budget spending on health (reconciled budget 2012), recurrent spending accounted for 53 percent, of which 46 percent was provincial budget allocations on a per capita basis for health services (Figure 23). State budget spending for full or partial subsidies of health insurance premiums for eligible beneficiaries according to the Law on Health Insurance accounts for 23 percent of total state budget spent on health in 2012. Public funds obtained from government bond sales and allocated to upgrading of health facilities account for 8 percent, including funds for the Project to upgrade district hospitals in Prime Ministerial Decision No. 47/2008/QD-TTG and the Project upgrading provincial general hospitals in mountainous areas and selected central specialist hospitals according to Prime Ministerial Decision No. 930/QD-TTg (2009) and investments in district health centers and commune health stations according to Prime Ministerial Decision No. 950/QD-TTg (2007).

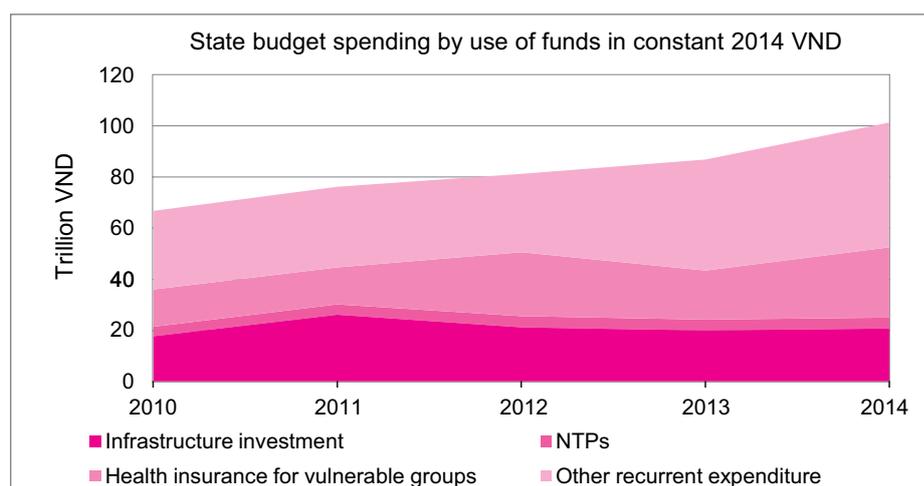
Figure 23: Structure of state budget spending on health, 2012 estimate of reconciled budget



Source: Data from the Department of Planning and Finance, Ministry of Health, 2014.

State budget planned health spending, adjusted for inflation using GDP deflators, show a steady upward trend (Figure 24). The year 2011 was an important year for infrastructure development allocations. In 2012, when the Health insurance law subsidy for middle income farmers came into effect, a large budget allocation was made, but not spent, so this allocation was reduced in 2013. In 2014 the rise is due to an overall increase in budget allocations for all groups receiving government subsidy for health insurance coverage. According to the planned budget, NTP spending was to remain relatively constant in real terms, but overall recurrent spending for other items continued to increase. While these are the planned amounts, it does not necessarily mean that this amount was actually spent. Estimated reconciled accounts for 2010-2012 indicate that while 2010 budgets were generally implemented, in 2011 and 2012, overall actual spending was only 88 to 89 percent of budget spending. Underspending was found in infrastructure investment and NTP implementation for both 2011 and 2012, but for health insurance only in 2012 when implementation of health insurance subsidies for farmers were budgeted, but not fully implemented, and in 2011 for overall recurrent spending, which fell short of budgeted amounts.

Figure 24: Trends in state budget planned spending by use of funds in constant 2014 VND, 2010-2014



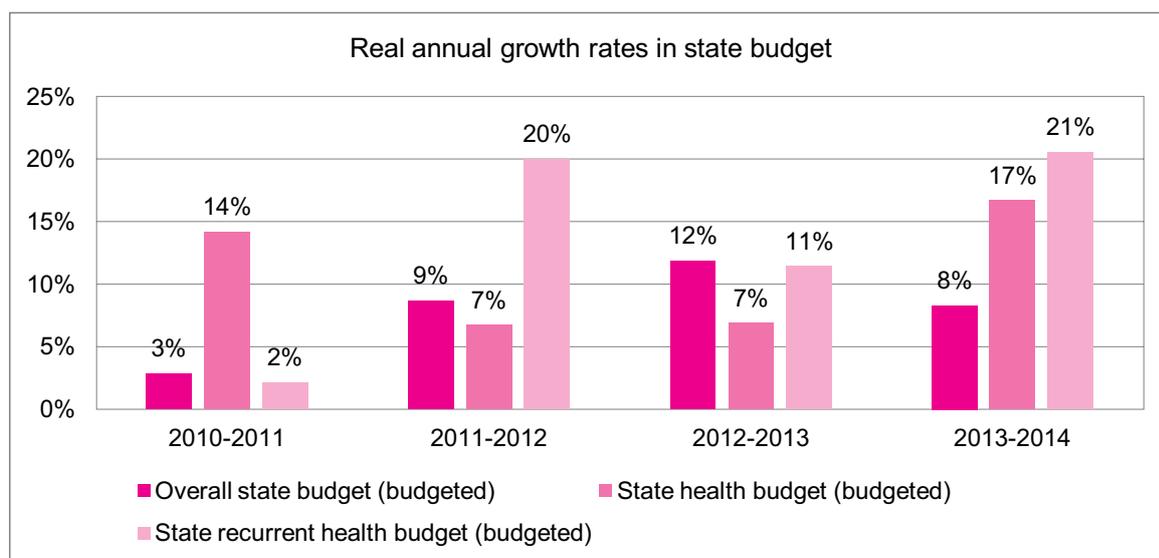
Source: MOH, Department of Planning and Finance- Estimated and draft budgets for health 2010-2014. Adjustment to real prices using GDP deflators of the GSO.

In the context of planned cuts in external assistance to Vietnam from several donors, the health sector continues to pursue mobilization of external assistance for health. Between 2012 and 2013, even though the number of ODA projects managed by the Ministry of Health declined from 52 to 41 projects, the total value of the projects was maintained at 1.5 billion USD in both years [62].

Difficulties, shortcomings

Macroeconomic difficulties have affected implementation of the goal to increase state budget spending on health. Based on planned budget estimates from the Ministry of Health, from 2010 to 2011, planned health budget increased 14.2 percent in price adjusted terms compared to overall budget increasing only 2.8 percent. However, growth in planned health budget for the period 2011-2013 was slow, less than 7 percent per year in real terms compared to growth in overall budget of over 9 percent. However, in 2014, the health budget plan grew quickly at 16.7 percent compared to 2013, almost double the growth in overall state budget (Figure 25).

Figure 25: Annual growth rates in state budget overall and for health, 2010-2014



Source: MOH, Department of Planning and Finance- Estimated and draft budgets for health 2010-2014. Adjustment to real prices using GDP deflators of the GSO.

The target of the health share of state budget spending reaching 10 percent will be difficult to achieve. The share of state health spending out of total state budget in 2011 reached 8.5 percent, declining in 2012 and 2013, but then increasing to 8.6 percent in 2014 (based on state budget plans).¹⁷ With these low shares, state budget spending is inadequate to effectively and completely fulfill some important public functions in the health sector such as inspections, verification, health statistics, health IEC and NCD prevention and control in the community.

The public share of total health expenditures (including state budget, health insurance and external assistance) in the past few years has followed a downward trend, from 46.6 percent in 2010 to 42.6 percent in 2012 according to the latest national health accounts estimates from 2014 [63]. This situation makes it difficult to achieve the goal of public spending accounting for 50 percent of total health expenditure by 2015. The negative consequence of this trend is that household out-of-pocket health spending, which had been on a desired downward trend, is now starting to show an increasing trend, reaching 48.8 percent in 2012 (Figure 26).

Figure 26: Household out-of-pocket spending share of total health expenditures, 1998-2012



Source: National health accounts 2010-2012

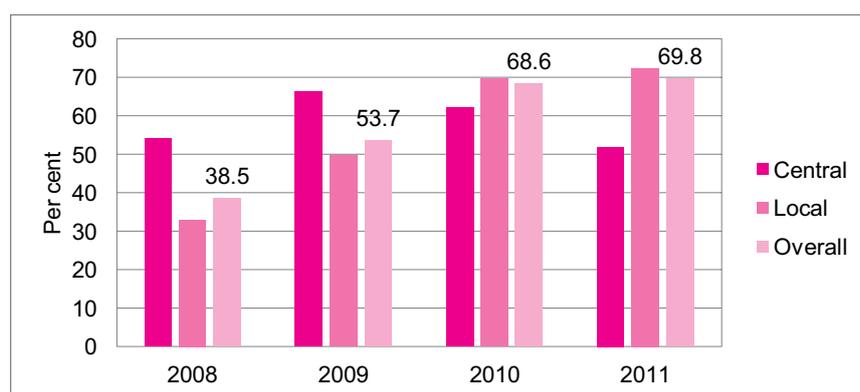
¹⁷ MOH, Department of Planning and Finance- Estimated and draft budgets for health 2010-2014.

2) Prioritize state budget health spending on preventive medicine, grassroots health network, primary health care and implementing social policies in the health sector

Implementation results

The policy for prioritizing state budget health spending on preventive medicine continues to be implemented according to the criteria determined in Resolution No. 18/2008/QH12 “Reserve at least 30 percent of state budget health spending for preventive medicine”. According to data from the national health accounts, out of total state budget spending, including central and provincial budgets, the share spent on preventive medicine and health promotion accounted for 69.8 percent in 2011 [64]. The preventive medicine share of state budget health spending at the provincial level has increased steadily over time (Figure 27). However, it is important to note that this share is an estimate of total preventive and promotive health spending compared to the total state budget as defined in the State Budget Law, and includes “fees collected from service provision that are contributed to the state budget”. If the share of preventive and promotive spending were estimated as a share of total state health budget from tax revenues, it would be only 43.9 percent, and in relation to total health spending it is only 27.9 percent.

Figure 27: Share of state budget health spending for preventive medicine and health promotion, 2008-2011



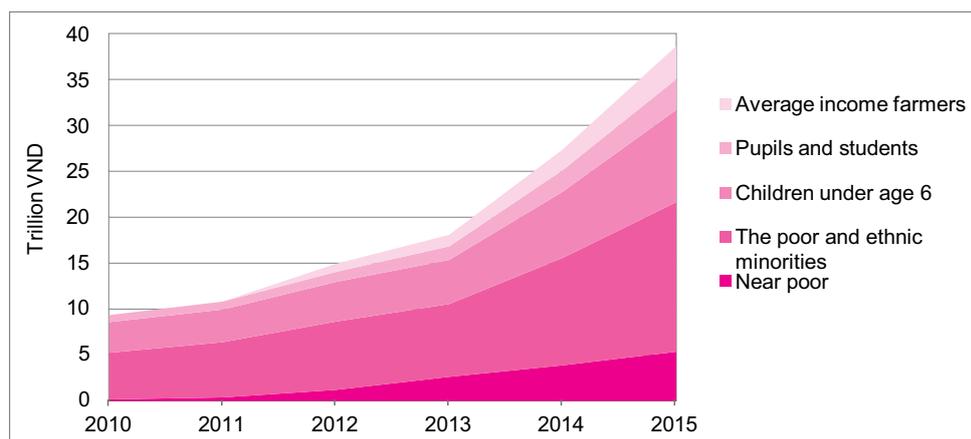
Source: National health accounts, 2008-2011.

Out of a total of 3.9 trillion VND for implementing health NTPs in the period 2011-2013, 82.8 percent came from the state budget. In 2013, total funds for implementing national health target programs was 1.5 trillion VND, of which 30 percent came from external assistance funds [65]. In the effort to achieve universal healthcare, strengthening of the grassroots health network and strengthening primary health care play important roles. The Ministry of Health is currently preparing a draft resolution and project on “Strengthening Grassroots Health Care in the New Situation” to submit to the Prime Minister for approval. Once it is approved for implementation, the project is expected to create a breakthrough with comprehensive changes in organization, physical infrastructure, medical equipment, health human resources and operational mechanism aimed at improving quality of medical services and meeting primary health care needs of the people in their communities, contributing to reducing overcrowding in higher level hospitals, ensuring equity, efficiency and development in the protection, care and promotion of the people’s health. The project will serve as an important legal basis for allocating financial resources to implement the goals of strengthening the grassroots health system, which has received inadequate investment in the past.

By December 2013, according to preliminary reports from VSS, a total of 2 234 597 health insurance cards had been issued to the near poor, reaching 38.8 percent of all near poor people. Many localities such as Nam Dinh, Ninh Thuan, Binh Duong, have effectively implemented Prime Ministerial Decision No. 797/QD-TTg (2012), allocating funds from their provincial budget to subsidize the remaining 20 to 30 percent of the health insurance premium for the near poor not currently subsidized. The issuing of Prime Ministerial Decision No. 705/QD-TTg (2013) ensures financial resources to cover full subsidies to pay health insurance premiums for the near poor who have only recently escaped poverty or are living in disadvantaged regions.

Implementation of social policy in the health sector has been made concrete through ensuring state budget to provide direct support to vulnerable groups. Each year, funds from the central state budget are allocated for purchase of health insurance cards for the poor, ethnic minorities and children under age 6 and to pay part of the subsidy for the near poor, school pupils and students, and agricultural households with average or lower living standards as determined in the budget plan each year. Total funds allocated from the state budget to support purchase of health insurance for these beneficiaries has increased over time (Figure 28).

Figure 28: State budget funds allocated for subsidizing health insurance for eligible beneficiaries according to the Law on Health insurance, 2010-2015



Source: Data from the Planning and Finance Department, 2014

Difficulties, shortcomings

Some localities have not yet allocated adequate funds for health according to the Ministry of Finance requirement for local contributions to spending, the fund allocation for health in some provinces is lower than the required norm.

Assured sources of funding for basic construction at the commune level according to Project 950/QD-TTg (2007) are not yet available, leading to delays in upgrading commune health stations, while funds for upgrading central, provincial and district hospitals have been prioritized.

Fund allocations for health NTPs have been cut in 2014. In 2013, funds for IEC were cut leading to difficulties for running the activities of various programs and projects. By 2014, almost all health NTPs had their budgets cut due to state budget revenue shortfalls. NCD prevention and control project budgets have been severely reduced, by over 66 percent for the mental health, COPD/asthma and diabetes projects. At the same time, the recurrent state

budget spending for preventive medicine is rather low (in some provinces non-payroll recurrent spending amounts to only 13 million VND per state health worker) [49]. It is possible that by 2015 no more funds will be allocated to NTPs. Completely cutting NTPs in the context of not yet fully integrating these programs into overall health services provision of the health system will negatively affect achievement of goals for controlling priority public health problems.

3) Implement the roadmap towards universal health insurance

Implementation results

Over the past year the Ministry of Health has continued to focus on refining health insurance policies and legislation in order to develop sustainable universal health insurance coverage. The Ministry of Health has worked very hard to develop the draft Law revising and amending several articles of the Law on Health insurance, which was approved by the National Assembly on 13 June 2014. In the process of developing the draft, the Ministry of Health organized many consultations to obtain feedback and advice from various units, organizations, individuals and particularly from international organizations, such as WHO, the World Bank, and the EC. New contents of the law include: stipulations about mandatory participation in health insurance; amending the groups who participate in health insurance; participation in health insurance by household rather than individuals; regulations on the basic health care package covered by health insurance; elimination of co-insurance for some groups (the poor, near poor, relatives of people who contributed to the revolution); added benefits; more flexibility for people to choose where to seek care;¹⁸ regulations on use of any annual surplus funds at the provincial level; and division of responsibility to related parties. Along with the Law revising and amending several articles in the Law on Health insurance, the Ministry of Health has also revised Circular No. 09/2009/TTLT-BYT-TC and Circular No. 10/2009/TT-BYT to resolve some inconsistencies and impediments to implementation of the 2008 Law on health insurance. In addition, new circulars are being developed by the Ministry of Health for implementation of the 2008 Law on health insurance including a circular issuing the list of medical consumables and another on the drug formulary that will be reimbursed by the health insurance fund.

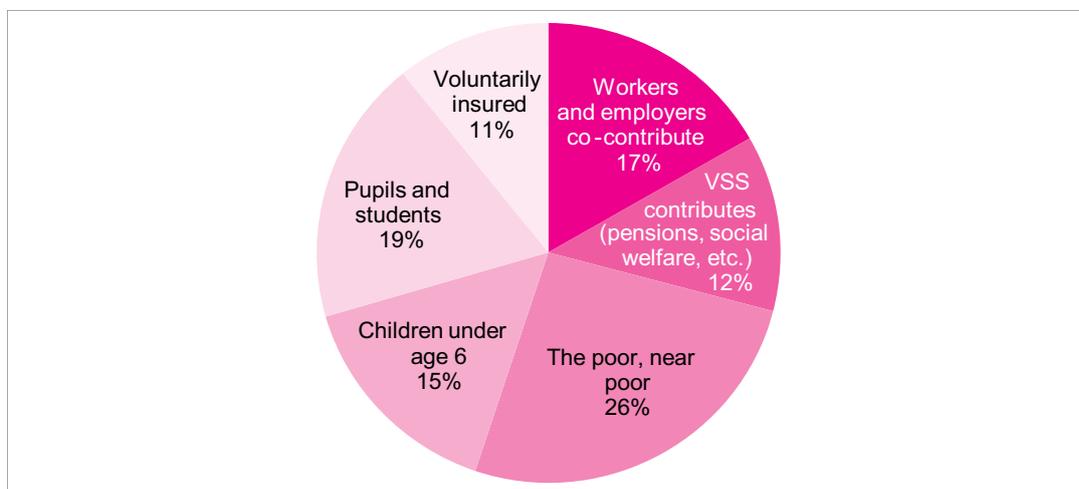
Continuing to expand health insurance coverage of the population is currently a priority health insurance task. After the Politburo issued Resolution No. 21-NQ/TW in 2012, the Prime Minister issued Decision No. 538/QĐ-TTg (2012) approving a project on implementing the roadmap towards universal health insurance for the period 2012-2015 and 2020. The Ministry of Health has requested that the provinces develop implementation plans for the project appropriate with local conditions. The Ministry of Health has collaborated with the Ministry of Finance to develop Decision No. 05/QĐ-TTg approved by the Prime Minister on 8 May 2013 regarding full subsidies for health insurance for the near poor who have recently escaped from poverty to continue for five years and the near poor living in poor districts receiving special assistance from the government. According to data from VSS, by the end of 2013, a total of 61.4 million people were participating in health insurance, equivalent to 68.5 percent of the population.¹⁹ Among the people covered by health insurance, the poor and near poor account for a high share

¹⁸ The revised Law on Health insurance allows the poor and ethnic minority people living in disadvantaged areas to bypass the commune to seek care at the district hospital, or to seek inpatient care at provincial or central hospitals and still receive health insurance reimbursement. In 2016 the policy allows all health insurance patients to seek health care at any district or commune health facility within the province and still receive full reimbursement even if it is not the facility where they are registered for care.

¹⁹ Document to submit for approval of options for balancing the health insurance fund for the period 2015-2020.

(26 percent) (Figure 29). Groups whose health insurance is fully or partially subsidized by the state budget account for 60 percent of the insured.

Figure 29: Structure of health insurance beneficiary groups, 2013



Source: VSS, 2014

Difficulties, shortcomings

The pace of expanding health insurance coverage has slowed in recent years. No effective solution has yet been found to overcome the bottleneck in implementation of the roadmap for universal health insurance coverage related to the lack of legislation and policies and limitations in their implementation. There is a lack of legal regulations that can ensure compliance with mandatory participation in health insurance, and a lack of regulations allowing VSS to implement its role as a medical service purchaser to satisfy criteria of safety, effectiveness, quality and acceptability. Management and use of the health insurance fund lacks sustainability and effectiveness, provider payment mechanisms are not yet appropriate, management capacity of the VSS does not meet requirements, the system of managing information remains weak, fraud and abuse of health insurance fund seems to have increased. Important services such as HIV testing and treatment are not yet covered by health insurance.

Implementation of the roadmap towards universal health insurance is mainly relying on full or partial state budget subsidies covering more than 60 percent of health insurance beneficiaries. Macroeconomic difficulties and a tight public spending policy negatively affects expansion of health insurance coverage.

Besides the expansion of population covered by health insurance and improvements in the benefits package, health financial protection remains limited. The main reason is that indirect costs of examination and treatment in Vietnam are high (i.e. transportation, food, accommodations for people accompanying the patient), while health insurance only covers part of the direct costs of medical care.

4) Reforms of the operational and finance mechanism in state health service facilities

Implementation results

In recent years the Ministry of Health has focused on developing legal documents guiding implementation of Decree No. 85/2012/ND-CP on the operational and financial mechanism

and medical service prices for application in state health service facilities issued on 5 October 2012. This includes a circular stipulating the full price to incorporate all cost components. Joint circular No. 04/2012/TTLT-BYT on the adjusted price schedule for 447 medical services has been applied in all provinces, relieving some financial difficulties for hospitals.

Implementation of adjustments in service prices according to Circular 04 has been implemented appropriately. Under the direction of the Prime minister, the Ministry of Health has collaborated with the Ministry of Finance to guide and organize implementation of service price adjustments following a roadmap, appropriate with the socio-economic conditions, health insurance coverage rates and income of the people in different localities in order to achieve the goal of controlling inflation and stabilizing the macro-economy. This roadmap includes two main measures. The first is to avoid implementing the price adjustment nationwide all at once, by adjusting prices in 2012 for some central hospitals, sectoral hospitals and 45/63 provinces (5 provinces in June and July, 14 provinces in August, 19 provinces in September, 6 provinces in October and 1 provinces in November); an additional 17/63 provinces implemented the new prices in the first eight months of 2013 and finally HCMC implemented adjustments starting 1 June 2014. The second measure to minimize impact of the price adjustment is that the prices were not allowed to be set at the maximum allowed level. Instead they were set at about 60 to 80 percent of the legal maximum for most hospitals and 90 percent for special hospitals, that treat severe patients with rare diseases using high tech medicine. The service price still only includes three cost components.

The Ministry of Health has implemented a preliminary assessment of the results of one year of implementing medical service prices. Almost all comments from hospitals and provinces concluded that adjustments to administered prices resulted in ensuring additional revenues to hospitals, facilitating cost recovery when serving patients and contributing gradually to improving quality of medical services. Hospitals have reserved 15 percent of revenues from providing medical services and inpatient care (for some hospitals as much as tens of billions of VND) to invest in outpatient clinics and improving, equipping and ensuring hygiene in inpatient rooms, improvements in the process of providing medical services, including the collection of medical charges to reduce waiting times thus increasing patient satisfaction. Benefits to patients with health insurance have increased, because additional amounts for buying medicines and medical consumables or top-ups in addition to co-insurance are no longer charged like they were when health insurance reimbursements to hospitals were too low. Lower level hospitals are being encouraged to learn and adopt new technologies, contributing to improving lower level professional qualifications and ability to provide quality services to insured patients.

Difficulties, shortcomings

Issuing of legal documents guiding implementation of Decree 85 has been slow compared to plans. In the process of developing these regulations, several difficulties have been faced related to implementing other policies such as social mobilization and management of public service prices.

There exist many problems limiting efficiency in use of resources at public facilities including: inadequate control of waste, limitations in the ability to ensure rational drug prescription and use of medical diagnostic and treatment services, and an inappropriate provider payment mechanism. No rigorous evaluations have been implemented to determine factors influencing medical service activities and health insurance reimbursements, ability to balance the health insurance fund and burden of out-of-pocket payments on the people.

Implementation of financial autonomy in public facilities is difficult if financial resources are not ensured to balance the facility budget. Some localities have not allocated adequate funding for provision of medical services according to the levels the Ministry of Finance has determined to achieve budget balance, and in some provinces the allocation to the health budget is lower than the official financing norms for health sector budget allocations (in some provinces only 25 to 37 million VND are allocated per hospital bed). Hospitals are facing difficulties in ensuring human resources because the service price schedule for 447 services currently only covers 3 out of 7 cost components, although the plan is that in 2015 payroll costs will be added and in 2018 all cost components will be included. Many provinces have approved service prices which are much lower than the service price schedule (only 60 to 70 percent of the maximum) even though the service price schedule was set based on careful calculation of costs, which means the more services provided to patients the more they lose. Preventive medicine spending is low and allocated unreasonably because almost all provinces allocate more funds to hospitals with revenues than hospitals without revenues, and the allocation norms for provinces are higher than for districts.

5) Provider payment reforms for medical services

Implementation results

The Ministry of Health in recent years has been paying special attention to guiding provider payment reforms, with a focus on reforming capitation payments and strengthening the pilot for case mix payments. On the basis of a survey analyzing the situation and consideration of advice from both domestic and international sources, the committee drafting the revision to capitation payments has considered various options for revising capitation payments and has implemented various options as pilots, to serve as the basis for developing a circular guiding implementation nationwide. On 30 December 2013, the Minister of Health signed Decision No. 5380/QĐ-BYT approving the project to pilot capitation payments for medical services paid by health insurance including 2 options. The pilot is being implemented in 4 provinces. Among these, Bac Ninh and Ninh Binh provinces are applying the model of capitation only for outpatient services at district and commune levels while Thua Thien Hue and Khanh Hoa are applying an inclusive capitation model covering outpatient and inpatient services at the district and commune level. Implementation and evaluation of pilot results on these two revisions will serve as the basis for developing a new circular guiding capitation payments nationally starting in 2016. Results of the project will provide a basis for choosing the optimal model in order to complete the new circular on capitation payments after evaluating results of implementing revised options, including design features such as the capitation fee, scope of services to be covered and implementation factors.

The project piloting case mix payments with 26 common diagnostic groups in the Health human resources sector development program funded by the Asian Development Bank continues to be implemented. Implementation of case mix payments has seen some positive developments. The Ministry of Health has guided development of a pilot project on case mix payments to ensure better coordination, effectiveness and convenience in mobilizing resources to implement these reforms. In the past few years, capacity building of health sector officials on case mix payments has also been promoted. The Ministry of Health has organized two groups of officials to go to Thailand to learn about case mix payments. The Ministry of Health is implementing development of care pathways and clinical quality standards, and mechanisms

for clinical quality accreditation for about 20 diseases to aid in controlling service quality and costs for when case mix payments are scaled up.

Difficulties, shortcomings

Provider payment reforms are difficult and complicated because they are related to the interests of many stakeholders, so in addition to technical issues, cooperation, coordination and consensus among the stakeholders, especially between the health sector at the central and local levels, are extremely important. The coordinating mechanism must be clear and effective.

Capacity for providing medical services is limited and there are large disparities in these capacities across facilities even at the same level of care, same class of hospital or even the same locality. This complicates provider payment reforms striving to have a uniform payment system when quality is not uniform.

Hospital service prices do not yet include the full costs of providing services, and they are not uniform across hospitals of the same class throughout the country. The legal basis is inadequate for regulating service provision, which leads to difficulties and inconsistencies when applying new provider payment methods.

Implementation of new provider payment mechanisms requires certain conditions in terms of technical capacity, responsiveness of data systems and supporting research. In Vietnam's current conditions these conditions are very limited.

2.3.2. Recommendations for supplementary measures

1) Increase state budget spending on health and the public share of total health expenditures while reducing the out-of-pocket share of total health expenditures

Priority issues

- Implement the goals for state budget spending on health that were approved by the National Assembly.
- Reduce household out-of-pocket spending on health care.

Recommendations

- Strengthen supervision over implementation of tasks and targets for ensuring state budget spending on health that were approved by the National Assembly.
- Develop budget plans for recurrent spending on activities that are currently underfunded in order to implement them effectively, such as health inspections, pharmaceutical management, health IEC and implementing health statistics tasks.
- Pay careful attention to developing strategies and policies for controlling health care costs in order to ensure that health spending does not grow more rapidly than the ability to pay of society (GDP), particularly the ability to pay of social health insurance and the state budget.

2) Prioritize state budget spending on preventive medicine, grassroots health care, primary health care and implementing social policies in the health sector

Priority issues

- Ensure adequate funds to pay full or partial subsidies for health insurance premiums of the poor, meritorious and social welfare beneficiaries, gradually shifting allocation of state budget from supply-side subsidies to hospitals towards demand-side subsidies for eligible beneficiaries through full or partial subsidies for health insurance.
- Ensure resources for implementing effective primary health care to meet the needs at the commune level in the current situation.

Recommendations

- Prioritize allocation of funds to implement Project 950 on strengthening physical infrastructure at commune health stations.
- Finalize the project on strengthening grassroots health care in the new period to submit for approval and mobilize international assistance for implementing the project.
- Monitor and evaluate implementation of state budget subsidies to purchase health insurance for eligible beneficiaries.
- Develop a basic medical service package for primary care at the grassroots level to serve as a basis for allocating funds from the state budget to the health insurance fund.
- Consider the possibility of using funds from the tobacco control fund for implementation of preventive medicine activities and IEC related to NCDs.

3) Develop sustainable universal health insurance; implement the roadmap towards universal health insurance coverage

Priority issues

- Increase the proportion of population covered by health insurance to reduce the financial burden on the people when using medical services.
- Focus on implementing the roadmap towards universal health insurance coverage; expand health insurance in terms of population coverage, the medical service package and the extent of financial protection for the insured.
- Continue to implement Politburo Resolution No. 21-NQ/TW on Strengthening leadership of the Communist Party in social insurance and health insurance for the period 2012-2020 and National Assembly Resolution No. 68/2013/QH13 dated 29 November 2013 on strengthening implementation of health insurance legislation.

Recommendations

- Complete the plan for developing legal documents on health insurance, especially regulations guiding implementation of the Law revising and amending various articles of the Law on health insurance, quickly remove barriers inhibiting implementation of the health insurance policy.

- Implement measures to strengthen effectiveness in use of health insurance funds including: review the drug formulary and the lists of medical consumables and medical services reimbursed by health insurance; strengthen use of evidence for health technology assessment when setting priorities; strengthen monitoring and supervision over use of medical services and health insurance payments through a system of databases on health insurance reimbursements for medical services.
- Develop and estimate the cost of a basic health insurance benefit package.
- Implement health insurance on a household basis, with a clear roadmap for implementation and at the same time strengthen the system of information databases.

4) Reform the operational and financial mechanism for state health service providers

Priority issues

- Focus on implementing Government Decree No. 85/2012/ND-CP on the operational and financial mechanism for state health service providers. Develop and issue a schedule of medical service prices that ensures the charges include all cost components to use at hospitals capable of collecting revenues to cover all recurrent operating costs; revise and amend regulations on social mobilization, joint ventures and partnerships in public hospitals that are more appropriate with the actual situation.

Recommendations

- Develop and implement a roadmap for adjusting medical service prices by incorporating all cost components into the prices according to Decree 85; ensure conditions for maintaining and developing medical facilities, appropriate with socio-economic development.
- Develop a set of indicators for monitoring and evaluating efficiency of public hospital operations in parallel with strengthening hospital information management systems.
- Revise and amend regulations on social mobilization, joint ventures and partnerships in public hospitals to fit with the actual situation.
- Develop circulars guiding payment for preventive medicine services.

5) Reform the provider payment system for medical services

Priority issues

- Reform of the provider payment system.
- Develop and issue a mechanism for allocating state budget to preventive medicine facilities and units implementing other functions of the health system such as quality assurance of pharmaceuticals, accreditation, population and family planning services and health IEC.

Recommendations

- Carefully monitor and evaluate implementation of the pilot project on capitation payments to propose the design of a model for national application.

- Urgently implement standardization of the information system to serve design and monitoring of the payment system for VSS to use in purchasing services from medical service providers. Implement research and obtain international advice to finalize the design of a capitation payment mechanism appropriate for Vietnam's conditions.

2.4. Pharmaceuticals and medical equipment

2.4.1 Implementation status

1) Ensure adequate essential drugs to serve treatment needs

Implementation results

- The health care system basically achieves the goal of ensuring adequate supply of quality drugs at relatively stable prices to meet people's needs. This priority task is set out in legal documents and policies on pharmaceuticals. The National Strategy for the development of the pharmaceuticals sector to the year 2020 with a vision to 2030 also sets the overall goal of "Ensuring timely supply of adequate, high quality and reasonably priced drugs".²⁰
- The Ministry of Health has issued the VIth national essential drug list in 2013.²¹ This list includes 466 active ingredients with 29 groups of pharmacological effect. After 8 years since the last update in 2005, the essential drug list has been updated. The VIth national essential drug list includes 111 more active ingredients covering an additional 2 groups of pharmacological effect compared with the 335 active ingredients in the Vth national essential drug list.
- In addition to the essential drug list, there is also the reimbursement drug list (or health insurance drug formulary), a list of basic drugs that are used in competitive bidding for the procurement of drugs in hospitals and are reimbursed by the health insurance fund. At the beginning of 2014, the Ministry of Health issued a unified health insurance drug formulary and guidance for its implementation to replace the former list.²²
- According to annual statistical reports, the total value of drugs used has increased over the years, reaching 2775 million USD in 2013, of which 1300 million USD was domestically produced drugs (not including the value of exported drugs); the value of imported drugs was 1848 million VND (not including the value of imported pharmaceutical ingredients). The average per capita drug spending has also increased from 22 USD in 2010 to 31.2 USD in 2013 [66].

In order to achieve the goal of ensuring adequate supply of essential drugs, the National strategy for the development of the pharmaceutical sector to the year 2020 and vision to 2030 places a special emphasis on domestic production of drugs and tax policy measures to support the production, supply and use of domestically produced drugs, especially generic drugs. The value of domestically produced drugs in 2012 is estimated at 1.2 billion USD, accounting for 48.2 percent of the total value of drugs used in Vietnam [9]. Domestically-produced drugs cover two-thirds of all active ingredients in the Vth national essential drug list. The proportion

²⁰ Prime Ministerial Decision No. 68/2014/QĐ-TTg dated 10 January 2014

²¹ Ministry of Health Circular No. 45/2013/TT-BYT dated 26 December 2013.

²² Ministry of Health Circular No. 01/TTHN/BYT dated 23 January 2014.

of domestically produced drugs has increased significantly, in terms of volume and value, thanks to regulations prioritizing domestically produced drugs in the bidding process for drug procurement. According to a rapid assessment of bidding for the procurement of drugs carried out by the Drug Administration of Vietnam in 7 Provincial Health Bureaus and 8 hospitals and institutes under the Ministry of Health, the volume and value of domestically manufactured drugs nearly doubled between 2012 and 2013. The volume of domestically manufactured drugs procured by these 7 Provincial Health Bureaus in 2013 was 700 million units compared to 338 million units in 2012. The total value of domestically manufactured drugs used by these localities in 2013 was 768 billion VND compared with 385 billion in 2012. The volume of domestically manufactured drugs used in central hospitals in 2013 was 73 million units compared with 38 million units in 2012 while the total value of domestically manufactured drugs in 2013 was 256 billion VND compared to 120 billion VND in 2012.

In addition to issuing of regular drug import and export licenses, the Drug Administration of Vietnam also resolves cases of importation of rare drugs, drugs specific to the therapeutic requirements of tertiary hospitals, drugs to supply pharmacy chains that achieve good pharmacy practice (GPP), and parallel imports of drugs to meet the drug needs for prevention and control of disease among the population. The Prime Minister has issued Decision No. 42/2013/QĐ-TTg revising and amending some articles of Decision No. 151/2007/QĐ-TTg containing regulations on import and export of drugs not registered for use in Vietnam to resolve issues of delays in drug importation of drugs that lacked conditions for registration.

In 2012, with a nationwide network of drug suppliers and an average density of 2269 people per retail drug outlet, people's access to drugs is rather favorable. The government is putting efforts now into developing the network of drug retailers in maritime and remote areas.

With regards to vaccines, although Vietnam does not have a highly developed pharmaceutical industry, nevertheless domestically produced vaccines meet the basic needs of the EPI. Currently 10 out of 11 types of vaccine in the EPI are domestically produced (with the exception being the *Haemophilus influenzae* type B (Hib) vaccine). Since 2006, the production of 10 domestically produced vaccines for the EPI has exceeded demand, with the exception of Quinvaxem, which is not yet domestically produced [67].

Difficulties, shortcomings

Besides the achievements mentioned above, there are still some shortcomings and difficulties in ensuring adequate essential drugs for the population.

The supply and use of essential drugs in provision of medical services under health insurance reimbursement faces some limitations. Only 316 out of 1143 drugs on the list of drugs reimbursed by health insurance are also on the Vth list of essential drugs [68]. At commune health stations, the situation of delays, shortages and inappropriate mix of drugs to meet therapeutic needs is still common [69].

Ensuring supply of drugs to meet treatment needs for diseases covered in national health target programs, like HIV/AIDS, TB and malaria, will be a major challenge in the near future because of a decrease or termination of external assistance programs, which up till now have been a major source of drugs to treat diseases of NTPs, especially ARV for HIV/AIDS patients. These difficulties are related to many issues, including the organization of procurement, supply and health insurance reimbursement.

There are not yet mechanisms for monitoring inventories or forecasting needs for vaccines that are not part of the EPI. This leads to supply-demand imbalances, and difficulties in meeting demand.

Lack of monitoring mechanisms leads to inadequate information about the extent to which essential drugs are meeting the need for prevention and treatment. In the reporting system about use of drugs in medical facilities, there are no indicators on use and spending of essential drugs.

2) Control of drug prices

Implementation results

The Ministry of Health has paid much attention to control of drug prices and has achieved certain positive results in recent years. The drug market has basically remained stable, meeting the need for drugs and controlling the rise in drug prices. In 2013, the pharmaceutical price index rose 3.45 percent, compared to a rise in general consumer prices of 6.04 percent, placing drug prices 9th out of 11 basic consumer goods in terms of inflation. The pharmaceutical price index in the first 5 months of 2014 rose 1 percent, compared to general consumer price index of 1.08 percent, and it is forecast that in 2014, the pharmaceutical prices will rise more slowly than the overall consumer price index. A comparison of winning bid prices in Vietnam compared to prices of similar drugs in Thailand and China found that prices in Vietnam are 2.25 to 3.17 times lower. A study on generic and branded drug prices using the WHO methodology also showed that Vietnam's winning bid prices are lower or about average compared to prices of similar drugs in other countries [66].

One of the most important measures for controlling drug prices currently is implementing regulations on competitive tendering for drugs procured with funds from the state budget, health insurance and user charges at public facilities. Currently, facilities are implementing competitive tendering according to recently revised regulations.²³ The Drug Administration of Vietnam has improved provision of information to support health facilities and provincial health bureaus to implement competitive tendering according to Circular 1 on developing competitive tendering plans as well as in assessing bids and approving results of the bid winner. Supply of information on brand name drugs, lists of drugs with certificates of bioequivalence, lists of drugs whose visas have been withdrawn are regularly updated on the website of the Drug Administration of Vietnam and other legal document databases.

The implementation of legal documents on control of drug prices and bidding for the procurement of drugs has begun to show positive outcomes, helping to reduce drug procurement costs in hospitals. In many localities, the winning bid prices have fallen by 20 to 30 percent compared to the planned prices for the tender package [49]. According to statistical data on results of competitive tendering in 26 provincial health bureaus and central hospitals, the new regulations on competitive tendering have helped to reduce winning bid prices by 35.33 percent [66]. The domestic share of total value of drugs procured through competitive tendering in hospitals has increased 1.01 percent in central hospitals and 2.41 percent in provincial and

²³ Joint Circular No. 01/2012/TT-BYT-BTC dated 19 January 2012; Joint Circular No. 36/2013/TTLT-BYT-BTC dated 11 November 2013 revising and amending Joint Circular No. 01/2012/TT-BYT-BTC; and Ministry of Health Circular No. 37/2013/TT-BYT dated 11 November 2013 guiding the preparation of drug procurement tender invitations in medical facilities to replace Circular No. 11/2012/TT-BYT dated 28 June 2012.

district hospitals. These levels of increase meet the goals laid out in the project promoting Vietnamese people to use domestically produced drugs.

VSS has increasingly strengthened its role in controlling the costs and the prices of drugs paid by the health insurance fund through purchasing drugs and health services for approximately 60 million people. Results of bidding for the procurement of drugs and medical supplies in all health facilities and localities are regularly published on the website of VSS. If there are any problems related to the winning bid drug prices and the price of drugs paid by health insurance, VSS sends timely comments and feedback to hospitals and localities.

Difficulties, shortcomings

Consensus has not yet been achieved on the organization and allocation of responsibility for leadership in state management of drug prices. The management of drug prices at levels appropriate for purchasing power of the people and health insurance fund faces many difficulties because there is not yet any effective mechanism for assessing the reasonableness of drug prices in price declaration when drugs are registered.

There are not yet effective measures for control of drug prices for retail sales of drugs in pharmacies independent of medical facilities. The amount of drugs dispensed in the market by private pharmacies accounts for 65 to 70 percent of total drug value. The project to pilot drug price management using caps on wholesale drug margins has been implemented since 2013, but there are no reports monitoring or assessing impact.

Regulations on bidding for procurement of drugs that takes into consideration the costs for a full treatment dose have not yet been devised. There is not yet any mechanism to encourage prescribing doctors to consider the costs to patients of the drugs they prescribe.

Information on drug prices including declared prices, redeclared prices and results of competitive tendering on the website of the Drug Administration of Vietnam are not updated in a timely fashion, they are not standardized (e.g. spelling of the name of drug active ingredient or dosage), and much information is duplicated, or inaccurate.

3) Strengthen drug quality management and safe and rational use of drugs

Implementation results

Ensuring drug quality is related to the entire series of activities from manufacturing to storage to quality assurance through testing. For the process of manufacturing and storage, implementation of good practice standards is the basic method used to ensure drug quality. The Ministry of Health is actively implementing a policy of comprehensive management of drug quality through application of good practice principles throughout the system from manufacturing (GMP), storage (GSP), laboratory testing for quality assurance (GLP), distribution (GDP) and dispensing of drugs to end users (GPP). Currently all manufacturers of modern pharmaceuticals in Vietnam meet GMP standards, all quality assurance labs meet GLP standards. The number of units reaching good practice standards has increased over time (Table 11).

Table 11: The number of facilities meeting good practice standards, 2008-2013

	2008	2009	2010	2011	2012	2013	June 2014
GMP	89	98	105	113	121	127	131
GLP	88	98	104	113	124	142	136
GSP	106	126	137	158	164	142	227

Note: Data on GMP from 2010 to 2014 includes all 4 vaccine production facilities in Vietnam; Data on GLP includes independent drug quality assurance laboratories; Data on GSP includes private and provincial health bureau medicine storage facilities.

Source: Drug Administration of Vietnam [66].

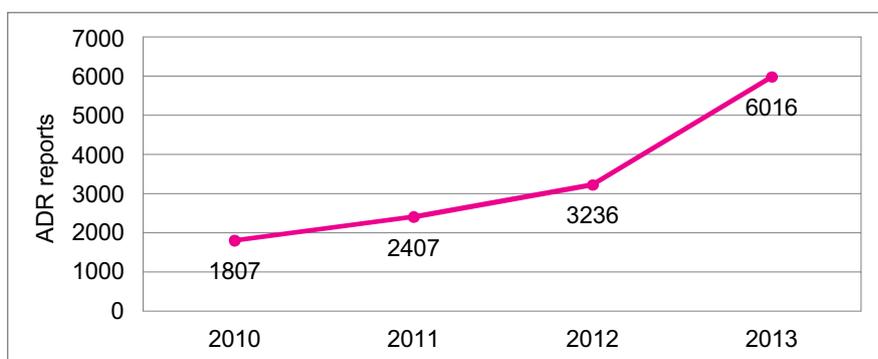
Strengthening verification and surveillance to ensure drug quality has received much attention in state management of pharmaceuticals. The capacity of the drug quality control laboratory system from the central to the provincial level has been strengthened in recent years. The Health systems strengthening project, funded by the Global Fund for the period 2012-2013, supported the system of drug quality control laboratories nationwide under the National Institute of Drug Quality Control. The project helped with investments in equipment for analysis and procurement of standard materials, organizing technical training, developed information systems and reported on drug quality for the whole drug quality control system nationwide, thus contributing to improving capacity for verification and surveillance of drug quality in the state drug quality control sector. With funds from the state budget and external assistance, equipment for the drug quality control system was improved through increasing the amount of equipment, diversifying the types of equipment and ensuring the equipment incorporates modern technologies. The current drug quality control system can check the quality of almost all essential drugs. In 2013, the drug quality control system checked quality of more than 56 000 drug samples, including 40 000 samples taken by the authorities for drug quality verification, and implemented assessment of bio-equivalence for 75 drugs manufactured in Vietnam [66]. Results of drug quality control testing detected many substandard or counterfeit drug samples. Sampling in the pharmaceutical market for purposes of drug quality control testing and strict imposition of penalties on substandard drugs have been strengthened. The Drug Administration of Vietnam has promptly issued decisions to withdraw drug registrations for drug batches that don't meet quality standards, increased inspections and imposed penalties for violations of regulations on drug advertising and information. In 2013, circulation of 28 drug batches was halted according to notices of the Drug Administration of Vietnam. A total of 22 drug batches were withdrawn from circulation in 2014 (up to June).

Implementation of measures for safe and rational use of drugs and gradual reduction in inappropriate prescriptions in curative care in state and private health facilities is being strengthened. In order to consolidate and bring into full play the role and activities of the Drug and Therapy Committees in hospitals, the Ministry of Health has issued Circular No. 21/2013/TT-BYT regulating the organization and activities of the Drug and Therapy Committees in hospitals; the Ministry of Health has also issued an official letter No. 2299 dated 28 April 2014 sent to all provincial health bureaus and hospitals nationwide to remind them of the need to strengthen guidance and verification of implementation of the regulations on drug prescribing for outpatient care, including special emphasis on the role of the Drug and Therapy Committees in checking and monitoring of prescriptions to ensure safety, rationality and effectiveness. In the face of the alarming antibiotic resistance situation in Vietnam, the Ministry of Health has issued Decision No. 2174/QĐ-BYT dated 21 June 2013 promulgating the National Action Plan

on antibiotic resistance for the period from 2013-2020 with six concrete goals, of particular importance is the goal on strengthening the finalization of the national surveillance system on use of antibiotics and antibiotic resistance and strengthening infection control measures.

Monitoring and surveillance of adverse drug reactions (ADR) has improved. The Ministry of Health issued Decision No. 1088/QĐ-BYT (2013) guiding ADR surveillance in medical facilities. The National Center of Drug Information and ADR Monitoring has stabilized operations and is becoming more effective. Since 1 January 2010, all voluntary ADR reports nationwide are sent to the National Center of Drug Information and ADR Monitoring. The number of reports on ADR sent to the Center has increased over time (Figure 30). Almost all reports were sent from hospitals (over 90 percent). The Center has developed a searchable database on drug information and prepared and critiqued many technical monographs on drug information and put them into the MEDLIB medical library software system.

Figure 30: Number of adverse drug reaction reports sent to the National Center for Drug information and ADR monitoring, 2010-2013



Source: The National Center of Drug Information and ADR Monitoring

Difficulties, shortcomings

- Information on drugs withdrawn from circulation has not been consolidated systematically in the form of a database to ensure convenience for searching and consultation.
- No information system currently exists for surveillance of safe and rational use of drugs according to Ministry of Health treatment guidelines. Inappropriate use of pharmaceuticals for treatment at state and private medical facilities has not been fully or carefully assessed.
- There is a shortage of highly trained pharmacists working in the provinces, especially in remote and isolated areas. The number of clinical pharmacists and pharmaceutical personnel working in management of cosmetics is inadequate.
- There are not yet clear regulations on development of drug distribution models to ensure drug quality appropriate for the situation in Vietnam.

4) Promote development of traditional drugs and drugs from medicinal materials

Implementation results

The issuing of the VIth essential drug list in Vietnam includes an important change compared to previous versions; a list of essential traditional drugs and drugs from medicinal

materials was added into the VIth essential drug list according to Ministry of Health Circular No. 40/2013/TT-BYT. This change reflects the policy of raising the status and promoting the use of traditional drugs and drugs from medicinal materials in Vietnam.

On 30 October 2013, the Prime Minister issued Decision No. 1976/QD-TTg approving the master plan for development of medicinal ingredients to the year 2020 and an orientation to the year 2030. The contents of this master plan not only include plans for conserving and exploiting natural medicinal materials and cultivation of medicinal materials, but also a plan for facilities to process and extract active ingredients, store medicinal materials and consolidate the system of distribution and supply of medicinal materials. This master plan contributes to resolving problems of the medicinal materials industry that has not developed in line with its current potential. The need for traditional medicine in Vietnam is very large because of customs, traditions and habits of consumers. Currently the annual demand for medicinal material inputs for manufacturing of drugs used in traditional medicine is about 40 000 to 50 000 tons, covering about 500 different types, to meet 50 percent of the amount of demand for medical care and drug manufacturing. Many activities are being implemented aimed at developing sources of medicinal materials and strengthening their sustainable management, exploitation and use. Development of regions for cultivation of medicinal materials according to good agricultural and collection practices (GACP) at an industrial scale is being implemented in collaboration between the Administration of Traditional Medicine, the Drug Administration of Vietnam and the Vietnam Pharmaceutical Corporation (Vinapharm). The National Institute of Medicinal Materials is leading a project on development of a center for research and cultivation of medicinal materials. The plan for implementing the National strategy for development of the pharmaceutical sector in Vietnam has proposed six sets of activities in order to implement the tasks of “issuing preferential policies for research on manufacturing of drugs from Vietnamese medicinal materials with a national trademark.”²⁴

The Ministry of Health has paid much attention to management of the origins and quality of medicinal materials. Regulatory documents related to traditional medicine materials are being developed and refined, such as the draft circular guiding management of origins and quality of medicinal materials used according to traditional medicine principles. Quality control for medicinal materials and traditional medicines is being implemented in some provinces (such as Thanh Hoa and Cao Bang provinces). Two courses have been organized for traditional medicine practitioners related to verification and control of quality of medicinal materials and traditional medicines in Dong Thap and Yen Bai provinces. According to an assessment by the Traditional Medicine Administration, the stringency of quality control of medicinal materials is increasing, especially in traditional medicine treatment facilities [70].

The production of drugs from medicinal materials in recent years has developed strongly. Drug manufacturing enterprises have researched and produced many types of drugs from medicinal materials, with new formulations to make them convenient for use. In addition, many drug manufacturers are changing their orientation towards production of tonics, functional foods, cosmetics, and perfumes in order to avoid the tight control by drug management regulations, and at the same time responding to the consumer trends towards increasing use of functional foods [71].

²⁴ Ministry of Health Decision No. 2614 dated 16/07/2014 issued the plan for implementing the National strategy for development of the pharmaceutical industry in Vietnam for the period to 2020 and a vision to 2030 according to Prime Ministerial Decision No. 68/QD-TTg dated 10 January 2014.

Difficulties, shortcomings

Development of medicinal materials is still unplanned and exploitation of naturally growing medicinal materials is not regulated.

There are substantial difficulties in management of origins and quality of traditional medicines and medicinal materials by manufacturing facilities and suppliers. Currently sourcing of medicinal materials is heavily dependent on imports. At the same time control over imports, in terms of origin, prices and quality, is limited.²⁵ Quality of medicinal materials is not regularly controlled.

Quality of production of drugs from medicinal materials is very limited. Out of 322 manufacturing facilities producing drugs from medicinal materials, only 10 have achieved GMP standards. More than 200 manufacturing facilities are household enterprises, with limited conditions, equipment and physical facilities.

5) Strengthen domestic manufacturing of medical equipment

Implementation results

National policy on medical equipment and research on domestic production of medical equipment continues to be implemented according to instructions of the Government. The Ministry of Health and the Ministry of Finance are collaborating in research to propose preferential tax policies for enterprises producing medical equipment in Vietnam. Nationally there are more than 1000 hospitals and 50 medical equipment production and trade companies or units. Out of the domestically produced equipment, about 600 types have been approved and certified for circulation, however most of these are relatively low technology devices, such as hand-held mechanical devices, beds, syringes, IV tubes, rubber gloves, sterilizing equipment or laser physical therapy machines.

In the management of imports of medical equipment, the Ministry of Health has gradually applied information technology in issuing permits for importation of medical equipment as part of public administrative reforms. The Ministry of Health has collaborated with the Office of Inspections, Vietnam Customs and other relevant units to resolve in a uniform manner the conflicts related to distinguishing the categories between similar types of medical equipment.

Difficulties, shortcomings

There is still no preferential policy for procurement and use of medical equipment produced in Vietnam.

6) Strengthen physical infrastructure of medical service facilities

Implementation results

At the central level, the Ministry of Health has focused on speeding up implementation of key projects such as: Completing the Tan Trieu facility of the National Cancer Hospital (with 1000 beds); the National Hospital of Endocrinology; the National Hospital of Pediatrics; the project for a pediatric oncology and cardiology center at Bach Mai Hospital; an oncology center

²⁵ Drug Administration of Vietnam (2013), Project for unifying the national drug policy for the period to 2020 and a vision to 2030.

and outpatient clinic at Cho Ray Hospital; and speeding up progress in implementation of various projects for oncology centers in Central General Hospitals in Uong Bi and Thai Nguyen. In 2014, construction was begun on secondary facilities for five central and tertiary hospitals, and the Prime Minister approved the project for investing in construction and upgrading of traditional medicine hospitals for the period 2014-2025 (Decision No. 362/QD-TTg dated 11 March 2014). Results among 11 projects managed by the Ministry of Health include completion of part of the projects on Phuc Yen Central TB and Lung Hospital, the National Cancer Hospital (Tan Trieu facility) and basic elements of the Can Tho University of Medicine and Pharmacy. The Prime Minister has approved the project for investment in developing five new central and tertiary hospitals in HCMC (Decision No. 125/QD-TTg dated 16 January 2014).

Regarding the provincial health network, Project 47 implemented over the period 2008-2012 has upgraded or constructed 460 district hospitals (fully completed or select components completed and put into use) and 70 regional polyclinics. Project 930 for the period 2008-2012 included 73 hospitals that have been completed and put into use (including fully completed or elements completed that could be put into use) including upgrading and improving physical infrastructure and medical equipment, personnel training and provision of essential medicines.

In addition to funding from government bond sales for the two above projects, health system strengthening projects funded with ODA and World Bank loans in some areas have contributed to considerable improvements in technical capacity of provincial and district hospitals. Adjustment of regulations related to the district health system are being studied. The hospital master plan is being implemented according to Decision No. 30/2008/QD-TTg. Currently the Ministry of Health is developing and refining a new master plan for the health sector, including the medical services network. The project on the master plan for central and regional hospitals is being developed to submit to the Government.

Difficulties, shortcomings

There are not yet any assessments of the current situation of medical equipment and consumables from which to develop an appropriate strategy for investment in medical equipment for different levels of the health system.

There are still 185 district hospitals that have not yet finished construction/renovations according to Project 47: certain items of medical equipment on the list of essential equipment are not yet in place and substantial amounts of infrastructure construction have not yet been completed.

The provincial and district hospital networks that received investments in Project 47 and 930 were implemented with delays because of difficulties in mobilizing funds through government bonds leading to cuts in some capital investments. Some projects had to be postponed or cancelled to await further investments after 2015, while others changed to other forms of investment. Some localities using government bond funds have spread the funds too thinly across many projects, rather than focusing resources on priority projects, leading to difficulties in ensuring effective investments. The splitting off of specialist hospitals (e.g. pediatrics, obstetrics) in some provinces has negatively affected quality because of the lack of human resources.

2.4.2. Recommendations for supplementary measures

1) Ensure adequate essential drugs to serve treatment needs

Priority issues

- Effective implementation of supply and use of essential drugs for medical services provided to the insured, since this is considered as part of the basic package of medical services in the Law revising and amending some articles of the Law on Health insurance from selection of drugs, procurement, dispensing and use.
- Development of a roadmap and sustainable financing mechanism to ensure supply of therapeutic drugs for diseases that are currently reliant on external assistance sources, such as HIV and TB. Removal of barriers and diversification of funding sources to replace external assistance funds to maintain drug supplies
- Promotion of production and use of domestically produced drugs, with a focus on essential drugs.

Supplementary measures

- Consider amending into the Pharmaceutical law various regulations on generic drug policy, policy on essential drugs and ensuring availability of drugs, policy on developing a drug distribution network and support for the people to access drugs.
- Review and strengthen the management system for supplying drugs for use by insured patients during medical examination and treatment.
- Review barriers and propose solutions to implement provision of treatment drugs through health insurance for diseases currently reliant on external assistance such as TB and HIV.
- Develop preferential policies to promote research, production, supply and use of essential drugs produced in Vietnam and importation of essential drugs that are not yet produced in Vietnam.

2) Control of drug prices

Priority issues

- Revising and enacting a revised Pharmaceutical Law, including regulations on organization, division of responsibility, and state management mechanisms for drug prices.
- Implementing effective methods to stabilize drug prices.
- Implementing the competitive tendering policy for drug procurement according to regulations.
- Implementing the campaign “Vietnamese people use Vietnamese drugs”.

Supplementary measures

- Strengthen monitoring and supervision over results of implementing competitive tendering for drug procurement.

- Evaluate and draw lessons from implementing the pilot project on wholesale drug markup controls for drug price management. Develop an appropriate policy for management of drug prices in wholesale and retail drug outlets.
- Revise regulations on competitive tendering that take into account the full cost of an episode of treatment, rather than the cost per unit of drug. Determine a method to encourage doctors to pay attention to cost-effectiveness when prescribing medicines.

3) Strengthen drug quality management and safe and rational use of drugs

Priority issues

- Strengthening verification and monitoring to ensure drug quality.
- Strengthening implementation of solutions for safe and rational use of drugs, gradually reduce inappropriate prescription of treatment drugs at both state and private facilities.

Supplementary solutions

- Strengthen capacity of drug quality control laboratories, quality assurance for vaccines, and facilities that assess bio-equivalence in order to develop a roadmap to expand the list of drugs requiring bio-equivalence testing.
- There is a need for policies to attract pharmacists to work in the provinces, districts and communes, implement pharmaceutical training of local people with commitments to return to serve their origin areas upon graduation; Ministry of Health study and advise the Ministry of Home Affairs on regulations related to pharmaceutical staff in commune health stations and district health offices, and norms for pharmaceutical technicians to undertake drug quality control sampling according to Circular 09/2010/TT-BYT dated 28 April 2010 guiding management of drug quality.
- Strengthen monitoring of the safe and rational use of drugs in medical facilities, especially the hospital information management systems.
- Implement the National Action Plan on control of antibiotic resistance, including development of indicators for evaluating safe and rational use of drugs, especially with regard to antibiotics.

4) Promote development of traditional drugs and drugs from medicinal material

Priority issues

- Implementation of projects according to the Master plan for development of medicinal materials to the year 2020 and an orientation to 2030.
- Completing the system of legal documents on management of quality of traditional drugs and drugs from medicinal materials.

Supplementary measures

- Strengthen inspections and verification of the origin and quality of traditional drugs and drugs from medicinal materials in production and supply facilities.

- Develop a plan for implementing the Master plan for development of medicinal materials to the year 2020 and an orientation to 2030.
- Implement activities for development of drugs from medicinal materials with a national trademark.

5) Strengthen domestic manufacturing of medical equipment

Priority issue

- Putting in place the Action plan for the implementation of the Strategy for development of production and supply of medical equipment.

Supplementary measures

- In addition to encouraging production, a preferential policy on procurement and use of medical equipment produced in the country should be developed.
- Develop a database on medical equipment to help medical facilities in procurement of medical equipment and at the same time to serve development of medical equipment statistics system and the health technology assessment unit.

6) Strengthen physical infrastructure of medical service facilities

Priority issues

- Focusing on strengthening projects for key medical facility development that have already been approved.
- Concentrating government bond funds mobilized in the 2012-2015 and 2014-2016 period, local budgets and other legal sources of funds for completion of district and provincial hospitals so they can be put into use.
- Ensuring essential medical equipment required for preventive medicine and medical treatment.

Supplementary measures

- Review and evaluate the situation and needs for medical equipment in medical facilities at all levels; update the list of essential medical equipment for medical facilities.
- Develop a master plan for the medical service network for the period 2015-2020, and a vision to 2030 with appropriate geographic distribution of medical facilities, and appropriate with changes in morbidity patterns and needs of the people.
- Pay attention to standardization and uniformity in the construction design and investments in physical infrastructure and medical equipment for medical facilities at all levels.
- Speed up disbursements of state budget funds for projects supporting development of infrastructure for provincial and district hospitals.
- Review the list of facility investments in Project 47 that require extensions, in order to request additional funding for the period 2014-2016 according to National Assembly Resolution No. 65/2013/QH13.

- Prioritize allocation of funds for implementing Project 950 to strengthen physical facilities of commune health stations.

2.5. Health information systems

2.5.1. Implementation status

1) Complete policies and plans for development of the health information system to the year 2015 and vision to 2020

Implementation results

In the past two years, the Government and the Ministry of Health have paid much attention to strengthening the statistical information system in general and health statistics in particular. A number of important policies related to statistical work have been issued including:

Decree No. 79/2013/ND-CP dated 19 July 2013 stipulating penalties for administrative violations in the field of statistics. This decree stipulates clearly the behavior that constitutes an administrative violation; the forms and levels of penalties; other methods for overcoming the consequences for different types of administrative violations; jurisdictions for imposing penalties; concrete levels of fines for different personnel positions and the jurisdiction for imposing these fines in the field of statistics.

The information dissemination policy issued according to Prime Ministerial Decision No. 34/ 2013/QD-TTg dated 4 June 2013 came into effect on 1 August 2013. According to this regulation, statistical information of the State that is to be disseminated according to the Law on statistics and other legal documents must be disseminated on time, openly and transparently indicating the source of information. The information dissemination policy aims to increase effectiveness of collaboration in statistical activities between the ministries and sectoral agencies in production, provision, dissemination and sharing of statistical information in order to create a statistical information system that is standardized, unified, comprehensive and effective between the general statistical system and the statistical systems of various ministries and sectoral agencies.

The Statistical reporting regime to be applied by ministries and sectoral agencies was issued according to Prime Ministerial Decision No. 15/2014/QD-TTg dated 17 February 2014 to replace Decision No. 111/2008/QD-TTg that was used by ministries and sectoral agencies since 2008, in order to meet requirements of the national statistical indicator system (issued according to Prime Ministerial Decision No. 43/2010/QD-TTg dated 2 June 2010). Ministries and sectoral agencies assigned state management responsibility in a given area are responsible for gathering and synthesizing information on that area including statistical information of units under the management jurisdiction of other ministries, sectors or localities.

The Comprehensive plan for development of the information system for the period 2014-2020 and a vision to 2030 was issued in Ministry of Health Decision No. 3040/QD-BYT dated 14 August 2014 with the overall objective to the year 2020 that the health information system would contribute to strengthening health of the people, fair distribution of resources, health sector reforms, improvement in management capacity, monitoring and evaluation of health policies and strengthening of public administrative reforms.

Ministry of Health Decision No. 4445/QD-BYT (2013) stipulates regulations for a Ministry of Health spokesperson to provide information to the press. According to this regulation, the spokesperson who provides information to the press, should be assigned this responsibility by the head of the state management agency. The function, tasks and authority of the spokesperson are regulated in detail including the timing of releasing information to the press and the contents to be released. The name, position, phone number and e-mail of the spokesperson are to be disseminated in writing to press agencies and the state organization that manages mass media and should be downloadable from the Ministry of Health website. These regulations will create conditions for providing information that is open, transparent and at the same time helps ensure increase effectiveness of the work of spokesperson and information provision to the press, in order to meet the needs for communication and orientation of information provided to the population.

Many policy documents on information technology development have been issued such as Ministry of Health Decision No. 2565/QD-BYT (2013) on changes and strengthening of the steering committee for application and development of information technology in the health sector; Ministry of Health Decision No. 2035/QD-BYT (2013) on announcing the technical protocols for application of information technology in the health sector; Decision No. 04/QD-BYT (2013) issuing the regulations on review, verification and approval of information technology projects in the health sector.

Difficulties, shortcomings

The Ministry of Health has not yet allocated adequate funds for implementation of tasks related to the general statistical system, administrative data of health sub-sectors and health sector surveys.

There is an inadequate legal basis for dissemination of statistical information in the health sector to stipulate which information must be disseminated, which unit is responsible, and the form of information dissemination in different sub-sectors within the health sector.

There are inadequate policies stipulating collaboration, division of responsibility and assignment of tasks for providing and sharing information between the Ministry of Health and other ministries and sectoral agencies such as the General Statistics Office, the Ministry of Finance, the Ministry of Justice, Vietnam Social Security, etc.

The Ministry of Health and the Ministry of Home Affairs have not yet stipulated the positions, titles, and norms for staff performing statistical work in units of the health sector.

2) Complete the system of health statistical indicators, registers and reports for the state and private sectors. Issue the circular on indicators and standardization of the basic indicator system in the health sector

Implementation results

Over the past two years, the Ministry of Health has actively updated and revised important legal documents in order to reform, refine and improve quality in health information gathering activities. Ministry of Health Circular No. 06/2014/TT-BYT, dated 14 February 2014 issued a list of the basic health sector indicator system to meet the information needs of the National statistical indicator system (According to Prime Ministerial Decision No. 43/2010/QD-TTg

dated 2 June 2010), serving management and administration needs of the sector, the need to report on progress towards achieving the MDGs and supplying information for regular reports of international organizations. The basic indicator system of the health sector is organized around the six building blocks of the health sector and indicators are categorized as input, process, output, results and impact indicators according to WHO and IHP+ recommendations. Many indicators in the list are disaggregated by gender, region and ethnicity in order to monitor and evaluate the situation of gender equality and assess inequalities in access and use of health services. The Ministry of Health has issued a set of basic indicators to be gathered and calculated at a decentralized levels, i.e. the province, district and commune levels.²⁶ A dictionary of indicators including standardized concepts, methods of calculation, sources of data, major disaggregations and comments is attached to the circular issuing the basic statistical indicators²⁷ to facilitate health workers referring to and using the indicators easily.

The 2009 health information reporting regime²⁸ was replaced with a new regime laid out in Circular 27,²⁹ which stipulates the system of statistical forms for nationwide application at the provincial, district and commune levels and provides guidance on information to be gathered in a standardized and consistent way to avoid duplication, facilitate information sharing and avoid overload of statistical forms to fill in at the grassroots health level.

The private sector continues to develop and contributes a sizable amount to medical service provision for the population. In the past year, the Ministry of Health and provincial health bureaus have begun issuing medical practice certificates to medical practitioners and operating licenses for medical facilities. Procedures for issuing medical practice certificates and operating licenses are publicly available on the website of provincial health bureaus. The Ministry of Health has issued Circular No. 29/2014/TT-BYT dated 14 August 2014 stipulating specific duties and responsibilities of medical facilities in the private sector for updating and reporting data on medical practice certificates and human resources and the duty of the provincial health bureaus and district health offices to synthesize these facility reports into reports at their administrative levels. These are mandatory requirements for private medical facilities in order to serve the national health information system.

Difficulties, shortcomings

Quality and timeliness of reports are negatively affected by the large number of indicators and the disaggregations (sex, age, ethnicity, etc.) that are reported to meet the needs of health sector managers combined with the slowness in applying information technology in the health information field.

There is not yet a mechanism for providing feedback about information so data quality has been slow to improve.

There is not yet a mechanism of sanctions to ensure compliance with statistical reporting by private sector facilities.

Decree No. 79 on penalties for administrative violations in the field of statistics was issued but there are not yet any specific guiding regulations developed in the health sector.

²⁶ Ministry of Health Circular No. 32/2014/TT-BYT dated 30 September 2014.

²⁷ Ministry of Health Circular No 28/2014/TT-BYT dated 14 August 2014.

²⁸ Ministry of Health Decision No. 3440/QD-BYT dated 17 September 2009.

²⁹ Ministry of Health Circular No. 27/2014/TT-BYT dated 14 August 2014

3) Strengthen the ability to meet needs of data and information users; to synthesize, analyze and process data; and to disseminate health information in diverse and appropriate forms

Implementation results

Currently the Ministry of Health is gathering information and compiling about 127 basic statistical indicators for the health sector in many different sub-fields including indicators of health status, implementation of activities in various sub-sectors, national health target programs and activities and situation of other related sectors. The network for gathering statistical information covers the entire country from villages to the central level, mainly through the periodic information reporting system. This system generally meets the basic needs of managers and planners at all levels. The Ministry of Health has a plan for information sharing regarding information to be disaggregated by province, age, gender, income level, etc. from results of analyzing sample surveys or the Census of population and housing of the General Statistics Office. In addition, the health sector has various research studies and regular specialized surveys, such as the Annual Nutrition Survey, to help provide useful information for managers. The data integration center of the Ministry of Health has concrete plans for uniformly integrating data from different sub-sectors of the health sector and between the health sector and other sectors such as Vietnam Social Security and the Ministry of Justice.

With support from the EC, the Department of Planning and Finance of the Ministry of Health has prepared training materials for training of trainers related to health statistics information. The Ministry of Health has organized six training courses for trainers who are officials in the provincial health bureaus and reproductive health centers. Officials involved in statistical work at lower level facilities will be trained by the provincial health bureaus using provincial funding sources. The Ministry of Health has organized training courses on reforming planning processes at the provincial level, including strengthening capacity for gathering and using data as evidence in planning, monitoring and evaluation. Supervision of data collection and reporting has been implemented on a regular basis in various national health target programs and in various departments and administrations of the Ministry of Health.

The health statistics yearbook has been published on a regular basis, disseminating basic health sector indicators in Vietnam and overseas. Statistical data in the health statistics yearbook provide information for research and situation assessments for implementing the Five-year health sector plan and developing strategic objectives for subsequent years. In the area of preventive medicine, a yearbook is also produced covering prevalence, incidence and mortality from communicable diseases and epidemics in the provinces over time. The Joint Annual Health Review (JAHR) is also considered an important publication in the health information system. In the past few years, the JAHR report has contributed importantly to the process of developing plans and policies, such as in priority setting of the health system, monitoring and evaluating implementation of policies and annual plans and in-depth analysis of specific priority topics to propose policies and solutions in the short and long-term.

Besides statistical data there are also many useful information products to strengthen understanding of the people about health care and disease prevention and to increase knowledge of health workers through journals or webpages such as the Health and Life Magazine, Family and Society Newspaper, the Ministry of Health website, the website of the HIV/AIDS control program, the Journal of Practical Medicine, the Journal of Pharmacy, Medical and Pharmaceutical Information, and Vietnam Medicine Journal, etc.

An additional channel for supplying information related to health is the various publications of the General Statistics Office, such as the Statistical Yearbook of Vietnam, the Survey of population change and family planning, the MICS survey and the Household living standards survey.

Difficulties, shortcomings

There are a large number of statistical indicators that need to be gathered and the main method is through the periodic reporting system. This creates a large amount of work for health workers responsible for gathering and recording information in statistical reporting forms, which may negatively affect the quality of information.

Currently the issuance of medical practice certificates to practitioners and operating licenses to private facilities suffers from incomplete coverage of the medical system because it has only recently been started.

The number of private medical facilities is quite large and most have not yet received training on recording information in statistical registers, preparing reports and calculating health sector statistical indicators. There are inadequate health statistics officials to supervise the quality of information reported by private and public health facilities.

Utilization of information to serve as evidence for planning and management remains weak, especially at the district and commune levels because of the lack of human resources with adequate professional qualifications to analyze data and make projections.

No assessment of information user needs has been implemented. Information products are still limited despite the existence of many sources of information related to health. The mechanism to officially disseminate information is unclear, since the health sector has not assigned responsibility to any one unit for data dissemination, including health-related data from other sectors.

Administrative databases at different levels are weak, data are not arranged in a standardized and clearly documented way. These databases do not comprehensively cover all fields or sources of information.

4) Gradually modernize the health information system, apply information technology in the area of health information

Implementation results

Application of information technology is one of the priorities of the health sector and of many sub-sectors. The Ministry of Health has issued a list of technical protocols for use in applying information technology in the health information system to serve as the basis for activities that apply information technology throughout the sector. This overall architecture for e-health is being studied and applied in a few areas. Administrative procedures are being prioritized for on-line use including pharmaceutical and cosmetics registration, issuing medical practice certificates and guiding hospital quality management.

Many information technology projects have been approved by the Ministry of Health and are currently being implemented, including projects at hospitals and central level institutes. Various pilot projects are being implemented including electronic health insurance cards for

managing insured patients and electronic patient records. With the financial and technical support of the Asian Development Bank, the MSA has developed an on-line information system for registering to obtain medical practice certificates, which should be able to provide information on human resources working in the public and private sector.

The Ministry of Health ranks towards the middle (14/24) of various ministries and sectoral agencies in terms of an index of readiness and development of the application of information technology (CNTT-TT-ICT) in 2013. However, this index also indicates that in terms of the organizational environment and policies for information technology, the Ministry of Health ranks higher than other ministries and sectoral agencies that have higher overall index rankings for development of information technology. This confirms the special attention that the Ministry leadership has placed on this issue. The Ministry of Health is preparing contents for cooperation in information technology and telecommunications with Viettel Group, a unit that has been assessed as having the capacity for providing modern, uniform and professional services in Vietnam in the area of information technology. In the negotiations for cooperation, Viettel Group will collaborate and help the Ministry of Health with high speed cable infrastructure, application of information technology in general management and administration and management of medical services, health insurance, etc. This cooperation will open up new directions for applying information technology uniformly throughout the health sector.

Difficulties, shortcomings

At the grassroots health facilities, data are still mainly processed and synthesized manually, use of information technology is very limited. There is still no on-line data synthesis software for application in commune health stations for reporting to higher levels.

Standardized categories for indicators, and coding of medical facilities, clinical procedures, drugs, technical services and medical terminology, all need to be implemented along with standards for applying information technology.

Information available on the Ministry of Health website and provincial health bureaus is not regularly updated.

2.5.2. Priority issues

- Reformulation of investment in the health information system from a vertical approach towards a horizontal approach. Investments in the health information system need to be oriented towards the structures of the health sector at the provincial, district and commune levels.
- Strengthening of the organization and network for health statistics: assigning adequate human resources with professional qualifications.
- Training to strengthen capacity of statistical workers through various forms of in-service and short-term training courses, as well as formal long-term training. Strengthening of short-term training on basic statistics, use of computers, use of analytic software and statistical forecasting.
- Updating basic indicators and standardizing instruments for gathering data from public and private health facilities.

- Application of information technology: Completion of the overall architecture for application of information technology in various sub-sectors of the health sector. Development of an integrated database warehouse. Developing on-line databases starting at the central and provincial levels, followed by the district and commune levels. Standardization of categories within indicators and coding of medical facilities, health workers, drugs, clinical procedures and protocols.

2.5.3. Recommendations for supplementary measures

1) Complete policies and plans for development of the health information system

- Ministry of Health should formulate a project on strengthening statistical work for the period 2014-2020 to present to the Ministry leadership to consider and approve.
- The Ministry of Health should develop a collaboration mechanism and assign responsibilities and duties for providing and sharing information between units within the health sector and with other relevant ministries and sectoral agencies, especially with the General Statistics Office.
- The Ministry of Health should develop a Circular to issue regulations on dissemination of health statistics information.

2) Complete the system of health statistics indicators, registers and reports for the public and private sectors; issue the circular on indicators; standardize the basic indicator system of the health sector

- Disseminate the list of national statistical indicators, and standardized content for each indicator. Issue the system of decentralized indicators to be processed by the provincial, district and commune levels.
- Develop a mechanism for ensuring data quality.
- Implement Decree No. 79/2013/ND-CP stipulating penalties for administrative violations in the area of statistics within the health sector.

3) Strengthen the ability to meet the needs of data and information users; the ability to synthesize, analyze and process data and disseminate health information in diverse forms.

- Strengthen preparation of statistical information products based on available data; widely disseminate information products in many forms.
- Train to strengthen capacity of statistical workers and planners on strengthening data use, analysis and forecasting. Provide training on filling out statistical forms and synthesizing reports based on newly issued regulations for public sector facilities and private medical facilities.
- Develop a statistical information database and national health database.
- Survey information needs; develop a Ministry of Health circular on dissemination of statistical information.

- Study and develop a system for gathering information on deaths and cause of death integrated into the management information system.
- Strengthen the network for gathering information on NCDs.
- Organize surveys according to the allocation of responsibility to the health sector for undertaking national surveys related to health according to Government decisions.

4) Apply information technology in the health information system

- Develop the overall architecture for e-health in specific fields.
- Develop software for on-line general statistical reporting at all levels. The software should be compatible with related areas such as medical examination and treatment, health insurance, etc.
- Create a coding system for medical facilities and standards for specific professional sub-fields to create optimal conditions for rolling out application of a standardized and uniform information technology system.

2.6. Health service delivery

2.6.1. Implementation status

1) Strengthening and consolidating the preventive medicine system and grassroots health care network

Implementation results

Up till now, almost all localities have stabilized their organization and have the full set of service units serving the various preventive medicine functions. In recent years the health sector has focused on consolidating the health network in maritime areas. NCD prevention and control activities are beginning to be implemented at the commune and district level.

In 2009, the Prime Minister approved the Project on population control in maritime areas, islands and coastal regions for the period 2009-2020 including the task of meeting the management and administrative requirements of the population and family planning program in order to contribute to the Vietnam maritime strategy to the year 2020. Up till now, the project has been implemented in 151 districts and the communes of 28 coastal provinces. Some 169 medical-family planning teams and 19 mobile teams have been set up under the provincial level reproductive health centers.

In 2013, the Prime Minister issued Decision No. 317/2013/QĐ-TTg approving the Project on developing the health sector in maritime areas in Vietnam to the year 2020 with objectives of strengthening capacity of the health services network, developing health human resources appropriate with the health care protection and emergency medical transport needs in maritime areas, increasing knowledge and skills of the population living and working in maritime areas. Specific targets focus on developing standards for health care in maritime areas and ensuring that 100 percent of preventive medicine centers in coastal provinces and sectors have at least one unit with adequate capacity for providing services including preventive examinations, health counselling for occupational disease prevention and dealing with health problems that

are typical of maritime areas, and ensuring training to increase knowledge for doctors in 70 percent of district hospitals and health centers in maritime areas related to maritime area health needs. Ensure that 100 percent of independent island communes have commune health stations, of which 50 percent meet health standards for maritime regions. Provide training and equipment so that at least 40 percent of district hospitals and health centers on islands are able to implement surgical techniques on the level of a standard II hospital. Develop two models for telemedicine and four 115 emergency centers appropriate for special needs of maritime areas that will work in collaboration with six hospitals assigned responsibility for receiving and treating patients from island and coastal areas. Strive to provide knowledge strengthening for health protection basic first aid for 100 percent of the population and workers in maritime areas.

The grassroots health network continues to be strengthened. The Ministry of Health has issued Circular No. 07/2013/TT-BYT stipulating standards, functions and tasks of village health workers closely linked with commune health stations and serving as an extension of commune health station services to continue strengthening the population's access to health services. The Pilot project to send newly graduated doctors voluntarily to serve mountainous, remote, isolated, border, island and other socio-economically disadvantaged areas with priority on the 62 poorest districts) was approved in Decision No. 585/QĐ-BYT (2013).

Grassroots health care has been developed nationwide, including the village health network, facilitating population access to health services. By 2013, 98.9 percent of communes, wards, district towns had a health station; 76.9 percent of commune health stations were served by a doctor (including communes where a doctor serves 3 days or more per week); 97.3 percent of commune health stations have a midwife or obstetrics-pediatrics assistant doctor; 95.7 percent of villages nationwide are served by village health workers, in urban areas this is 82.9 percent while in rural and mountainous villages it reaches 97.3 percent.

Primary health care has begun to be reformed including expansion of health services at the commune level and pilot implementation of chronic disease management (e.g. asthma, hypertension and diabetes) in the community, in an effort to contribute towards reducing overcrowding at higher levels. About 80 percent of commune health stations are providing medical services reimbursed by health insurance. The program for civilian-military medical cooperation has also invested in civilian-military medical facilities including upgrading health stations, adding medical equipment in 171 health stations in border, remote and isolated regions and key national defense zones and providing financial support for medical equipment in five key civilian-military medical facilities. Health collaboration with the Ministry of Defense included the establishment of eight civilian-military hospitals; and in some localities civilian-medical polyclinics and district level civilian-military hospitals.

Circular No. 43/2013/TT-BYT was issued including over 17 000 medical procedures and services, expanding the number of procedures and services that can be implemented at the district and commune levels. The number of primary health care facilities covered by health insurance has expanded, including commune health stations and private hospitals. The health sector is implementing several models for chronic disease management such as models for hypertension, diabetes and asthma at the district and commune levels. Circular No. 16/2014/TT-BYT guiding the pilot project on family doctors and family medicine clinics has been issued. So far eight provinces will apply this model on a pilot basis, while other provinces can still establish family medicine clinics following the Ministry of Health guidelines. The model for health care for the elderly in the community is also being implemented [72].

Difficulties, shortcomings

Investment funds have been limited and implementation and monitoring of projects investing in physical infrastructure, medical equipment and human resources for preventive medicine centers and grassroots facilities has been weak. This has led to commune health stations, district health centers and various preventive medicine centers at the provincial level receiving inadequate investments and being unable to meet the targets set for meeting national standards (national standards for commune health, standards for provincial preventive medicine centers). This has led to shortcomings in grassroots health facilities ability to provide services both in terms of quantity and quality.

Even though district and commune levels are permitted to provide a wider range of technical medical services, capacity for implementing them at the district and commune levels is still limited. Models for managing chronic illness (such as hypertension, diabetes, asthma) at the district and commune levels suffer from scale of implementation being limited to only a few localities and problems with the health insurance reimbursement mechanism and professional medical capacity to provide appropriate services. Circular No. 16/2014/TT-BYT guiding the pilot on family doctor and family medicine clinic has only recently been issued, and will require time for implementation and impact evaluation.

2) Promote preventive medicine activities, implement effectively projects under the national health target program

Implementation results

Prevention of dangerous epidemics and diseases

The project on prevention and control of communicable disease: The new national strategy for prevention and control of TB to the year 2020 and vision to 2030 was issued and is now being implemented.³⁰ The health sector has achieved some results in control of epidemics through implementing the National Strategy for development of preventive medicine to the year 2020, the National strategy for prevention and control of HIV/AIDS to the year 2020 and a vision to 2030, the Plan for the protection, care and promotion of the people's health for the period 2011-2015, strategies for prevention and control of other dangerous diseases like malaria and implementation of national health target programs for the period 2012-2015 according to Decision No. 1208/QD-TTg (2012). The health sector has ensured effective control over most dangerous communicable diseases covered in component project 1 of the national health target program. The EPI, component project 2 of the national health target program for the period 2012-2015, regularly achieves over 90 percent full immunization rates, however in 2013, it only achieved 88 percent (due to lack of trust in the EPI after reports of deaths to children who had received immunizations). The program is making efforts to monitor adverse events after immunization and limit any post-immunization reactions. The health sector has collaborated with the Ministry of Agriculture and Rural Development to ensure control over and prevent outbreaks of the A(H5N1) and A(H1N1) influenzas. The Border quarantine system is operating effectively (both for control over human and animal disease).

The incidence of hand, foot and mouth disease and dengue fever remains high, with cases spread over a large geographic area, but case fatality rates have fallen considerably. A

³⁰ Prime Ministerial Decision No. 374/QD-TTg dated 17 March 2014.

measles outbreak occurred in December 2013 with over 11 000 cases of fever with a measles-like rash, with 146 deaths related to measles, only 25 of which were confirmed to be due to measles (by 30 June 2014) (see Chapter I for more information on communicable diseases).

The National TB prevention and control program has many achievements in controlling TB in Vietnam according to plans. In 2013, the program detected about 100 000 TB cases. The TB control program covers 100 percent of Vietnam's geographic territory. Improvements in detection have resulted from a focus on diagnosing AFB positive pulmonary TB through smears and implementation of activities to diagnose TB in children. Use of the 8-month directly observed treatment short-course (DOTS) with the first treatment protocol for new TB patients has achieved cure rates for AFB positive patients of over 90 percent, while the second-line treatment protocol is being used for recurrence and treatment failure with cure rates of over 80 percent.

The HIV/AIDS control program has been widely implemented. As of October 2014, nationally nearly 90 000 people were receiving ARV treatment in 318 outpatient HIV/AIDS clinics. Treatment and prophylactic treatment to prevent transmission of HIV from mother to child is being provided for 94 000 women. Methadone replacement therapy has been implemented in 38 provinces with 122 facilities treating 22 000 patients, leading to substantial benefits to health, reduction of HIV transmission, stabilization of social order and contributing to socio-economic development in general. The condom distribution program continues to be implemented in 63 provinces and the distribution of clean needles and syringes is being implemented in 88 percent of provinces. Voluntary counselling and testing of HIV has expanded to 485 counselling centers in all 63 provinces and 84 HIV testing centers are permitted to confirm HIV infection in 54 provinces. Nearly two million people have received free counseling and HIV testing. As a result of these interventions over many years, each year Vietnam is reducing the number of new HIV infections and deaths due to HIV/AIDS.

Program for prevention of blindness and vision disorders: In 2009, Ministry of Health issued Decision No. 4322/QD-BYT approving the National plan for prevention and control of blindness and vision disorders for the period 2009-2013. One of the main objectives of the plan is to control preventable diseases causing blindness and vision disorders, such as cataracts, trachoma, xerophthalmia due to vitamin A deficiency, and refractive disorders. Concrete targets include for 2013 a minimum of 2000 cataracts cases/million population to undergo cataracts surgery and entropion surgeries for 30 000 to 40 000 cases per year, eliminating the most severe cases of entropion by the end of 2014 and piloting screening and prescription eyeglasses for school pupils (aged 6 to 15 years) in 20 provinces that have previously received international assistance, then after that to scale up nationally. The results implemented up to 2012 have shown that implementation performance is much lower than planned targets. For example for cataracts surgery only 1764 cases per year per million population were performed, and only 10 000 entropion cases (in 2011) while the backlog of entropion cases in need of surgery is over 200 000 cases [73].

Results of implementing the NTP on food safety: Implementation of the National strategy for food safety for the period 2011-2020 and vision to 2030 according to Prime Ministerial Decision No. 20/2012/QD-TTg has achieved some progress. By 2012 national standards and technical standards were issued including 50 technical standards for food safety and another 35 draft national standards related to testing methods were submitted for approval. Inter-sectoral steering committees were set up at three levels including the provinces (100 percent), districts

and communes (over 99 percent of the total). Programs for training in international competency in laboratory programs for central, regional and provincial food safety laboratories were organized. A system for certification of compliance was developed in two units: The Center for Food Safety Application and the National Institute for Food Control. Efforts have resulted in reductions in the number of collective food poisoning incidents and the number of cases of food poisoning compared to the previous year.

Attention has been paid since the beginning of the year to strengthening collaboration between the health sector and other sectors for inspections that have led to improvements in the situation and contributed to re-establishing order and discipline in manufacture and trade in foodstuffs. The proportion of facilities with violations in food safety has fallen from 21.2 percent (2012) to 20.1 percent (2013). The number of samples taken that meet standards required for proper food safety testing has increased from 82.3 percent (2012) to 88.8 percent (2013). Many violations in food safety were detected early and results posted openly on mass media as part of a “name and shame” strategy. Food poisoning prevention and control has been strengthened with many effective measures, including monitoring of potential risks, risk warnings through actively sampling and testing food on a regular basis and on a random basis, warnings to the relevant state management sector and community, timely and effective intervention in over 20 food safety incidents. Results indicate food poisoning in 2013 has fallen compared to 2012.

Health environment management: The Ministry of Health has begun to implement an IEC plan for several national programs including the national health target program on clean water and sanitation in rural areas for the period 2012-2015; the NTP on work safety and hygiene for the period 2011-2015; the plan for management of household chemicals, insecticides and disinfectants used in households and medical establishments for the period 2012-2015. In 2012, the Ministry of Health issued Circular No. 08/2012/TT-BYT guiding the issuing of permits for transporting dangerous goods including insecticides and disinfectants used in households and medical establishments using road transport, Joint circular No. 12/2012/TTLT/BLDTBXH-BYT guiding declaration, investigation, statistical reporting on work accidents; Circular No. 13/2012/TTLT/BLDTBXH-BYT guiding implementation of compensation in kind for workers working in dangerous and toxic conditions. Several circulars are being drafted including a circular guiding checking and surveillance of the quality of water used for drinking and household use; a circular guiding checking and surveillance of household latrines; and a circular guiding environmental monitoring within medical facilities.

In 2012, the focus has been on completely resolving the environmental pollution situation in facilities that cause severe pollution harmful to community health. By the end of December 2012, 49/84 facilities (58.3 percent) were certified as having resolved the pollution issues, 23/84 facilities (27.4 percent) are in the process of submitting evidence of accomplishing elimination of pollution and 12 facilities (14.3 percent) are preparing investments in medical waste treatment systems.

School health: Currently there is a strong legal basis for dividing up responsibilities for implementing school health activities and strengthening school health including Directive No. 23/2006/CT-TTg dated 12 July 2006 on strengthening health activities in schools; Joint circular No. 03/2000/TTLT-BYT-BGDDT assigning tasks and regulating the functions and responsibilities of each unit of the health system and education system and an inter-sectoral collaboration mechanism for school health; Decision No. 73/2007/QD-BGDDT with specific stipulations on content and conditions for ensuring and assigning responsibility for school

health activities; Joint circular No. 35/2006/TTLT-QD&BGDDT-BNV on staffing norms at general education establishments in the public sector including requirements for school health staff; Circular No. 46/2010/TT-BYT on national technical standards for hygiene to prevent communicable disease in education establishments of the national education system.

Other health promotion activities: In 2012 the Ministry of Health submitted the Law on tobacco control to the National Assembly. It was enacted and came into effect on 5 January 2013. The Ministry of Health has drafted sub-legal documents including the Decree stipulating details of several articles in the Law such as counselling to quit smoking and various penalties for administrative violations. Currently the MOH is finalizing a Draft Law on control of harmful effects of alcohol use to include in the National Assembly legislative agenda.

Difficulties, shortcomings

The programs on prevention and control of infectious disease have not yet achieved adequate control over TB, HIV/AIDS, dengue fever, and hand, foot and mouth disease. HIV/AIDS remains one of the most important causes of death in Vietnam; coverage of services for testing, harm reduction and treatment of ARV remains low compared to need, while external assistance funded projects (accounting for 80 percent of total funding for HIV/AIDS prevention and control) are declining rapidly.

TB remains a major challenge, with Vietnam ranked 12th out of 22 countries with a high TB diseases burden globally and 14th out of 27 countries with a high drug-resistant TB burden. The main difficulty is that the program has not yet been able to control factors related to living environment and awareness of the people. The measles outbreak at the end of 2013 and beginning of 2014 with 146 deaths due to measles or related to measles is the consequence of immunization rates not achieving high levels and limitations in control over transmission of measles within medical facilities and the community.

The NCD prevention and control program has not yet achieved most of the targets according of the plan, including targets on screening for early detection, management of patients in primary care, targets for development of the network and training of human resources for the program. The main reason is the lack of adequate investments for the NCD program, the lack of collaboration between preventive and curative care facilities at all levels in detection, management and treatment of people at risk of or diagnosed with NCDs. Another underlying reason is that currently the management of communicable and non-communicable diseases is organized by independent programs and activities, including disease surveillance and medical service provision for specific disease groups without unified and clear management between disease control and health care service provision specifically for different population groups. There is a lack of integration of activities between the health programs.

Programs on food safety and hygiene have had some initial achievements, but these are not sustainable, especially in control of food safety and food poisoning control indicators. The main reason is limitations in implementing responsibility at different levels of the authorities and inter-sectoral collaboration in management and control of food safety and hygiene that is consistent for the full food chain.

School health: Implementation of school health activities is still weak. According to research implemented in 2010-2011 evaluating the national situation, it was found that 6 percent of lower secondary schools and 38.3 percent of upper secondary schools had a school health

office. Only 40.5 percent of primary schools and 19.4 percent of lower secondary schools had staff assigned full-time to implementing school health. At the same time 15.5 percent of primary schools and 61.5 percent of lower secondary schools had no staff person assigned to school health activities. Staff working in school health with training in health sciences accounted for 53 percent, of which 0.4 percent were doctors, the rest being nurses trained at different levels. Only 50 to 60 percent of classes met standards for school hygiene and safety including lighting, ventilation and size of desks and chairs for students. On average only 61.1 percent of lower secondary schools and 75 percent of primary schools had toilets that met hygiene standards.

Programs to promote health through policies and interventions to control tobacco use, or harmful use of alcohol, have only just begun with the steps of developing and issuing legal documents and regulations, however the guiding documents and policy instruments are still inadequate and inconsistent leading to interventions not being implemented concretely and lack of collaboration and tight commitments of the authorities, different sectors and the participation of the community. Activities to strengthen physical fitness of the population have not received adequate attention, especially activities to increase physical activity among school children in schools and among the workforce.

3) Complete the system of policy documents, strengthen the network and effectively implement population, family planning and reproductive health care activities

Implementation results

Activities and models for population and family planning have been implemented in order to achieve the targets for reduction in fertility rates (estimated in 2013 at 2.02 children). The target for maintaining fertility below replacement levels has been achieved. The modern contraceptive prevalence rate for couples in reproductive age continues to rise; it is estimated in 2013 at 69 percent. On 1 November 2013, the population size reached 90 million people, 11 years later than was originally forecast in the Population Strategy to the year 2010.

Activities for reducing maternal and infant mortality and child malnutrition have been implemented to reach MDGs 1, 4 and 5. Specific activities include: strengthening of capacity for health workers at all levels through organization of training courses on basic essential and comprehensive emergency obstetrics and neonatal care at the district and commune levels; technical guidelines for safe abortion; implementation of neonatal care units at district hospitals; guidelines for treating obstetrics complications; training and use of trained village midwives in ethnic minority regions; focusing on interventions to reduce stunting and other forms of malnutrition in remote and isolated regions.

Basic targets for quality of maternal and child health care for 2013 have been achieved or exceeded. It is estimated that in 2013, the proportion of pregnant women being managed by the health system reached 96.6 percent; the proportion of women with 3 or more antenatal visits in the 3 trimesters reached 87.5 percent; the proportion of women assisted by a trained health worker at delivery reached 97.7 percent; the proportion of mothers and newborns given postnatal/postpartum care reached 92.6 percent; and the malnutrition rate among children under age 5 in 2013 fell to 15.3 percent, a decline of 0.9 percentage points compared to 2012.

After two years of implementing the Project on reproductive health care and improvement of child nutrition status under the national health target program, activities have

been implemented in 55/63 provinces, including 37 focal provinces for implementing the main contents on reproductive health, paying special attention to safe motherhood; 18 provinces only participate in implementing the contents on adolescent reproductive health. Currently the Ministry of Health is completing and submitting for approval a minimum medical intervention package for maternal and child health including five concrete minimum service packages (antenatal care, delivery care, postpartum care, neonatal care and small child care).

Difficulties, shortcomings

Even though population, family planning and reproductive health services have improved considerably, there remain several targets that have not been met, and large regional disparities continue to persist including in maternal mortality, infant and child mortality, malnutrition, sex ratio at birth. The sex ratio at birth estimated for 2013 increased to 113.8 boys for every 100 girls [27], indicating inability to control sex ratio at birth at or below 113 set as the maximum acceptable ceiling in the Five year health sector plan. Some targets have not been achieved in mountainous and maritime areas such as contraceptive prevalence rate and fertility control.

4) Improve quality of medical services

Implementation results

The system of legal documents on medical care continues to be refined. In 2013 and the beginning of 2014, the Ministry of Health has issued many circulars, directives and decisions related to professional standards and regulations such as: Circular No. 02/2013/TT-BYT regulating coordination between medical facilities in management of TB; Circular No. 18/2013/TT-BYT stipulating the location, design, physical infrastructure, technology and equipment for infectious disease treatment facilities; Circular No. 21/2013/TT-BYT stipulating the organization and operations of the Drug and Therapy Committees in hospitals; Circular No. 26/2013/TT-BYT guiding blood transfusion activities; Circular No. 34/2013/TT-BYT issuing the list of diseases that require long-term treatment; Circular No. 35/2013/TT-BYT regulating revocation of medical practice certificates and operating licenses and termination of professional activities of medical practitioners and medical facilities; Circular No. 40/2013/TT-BYT issuing the IVth list of essential traditional drugs and drugs from medicinal materials; Circular No. 43/2013/TT-BYT stipulating detailed assignment of technical professional services to be provided at different levels and types of facilities in the medical care system; Circular No. 01/2014/TT-BYT regulating the functions, tasks and organization of traditional medicine departments in state hospitals and Circular No. 14/2014/TT-BYT guiding referrals for medical care.

The Ministry of Health has issued Circular No. 19/2013/TT-BYT, dated 12 July 2013 guiding implementation of medical service quality management in hospitals. The national action program for improving quality of medical services is being completed to submit for approval. The Minister of Health has issued Decision No. 1313/QĐ-BYT dated 22 April 2013 guiding the medical examination process in outpatient clinics of hospitals, including targets and concrete measures for reducing waiting times and making it more convenient for patients when seeking medical examinations. The medical examination protocol was reduced from 12 to 14 steps down to four to eight steps, reducing waiting time on average about 40 minutes. The form recording user charges for patients now requires only four signatures, whereas previously it required six [49]. In 2013, the Ministry of Health updated and amended more than 2000 technical protocols for medical services and is in the process of reviewing another 1000 for

issuance; over 300 treatment guidelines have been issued. Hundreds of protocols and guidelines for use at the commune health stations have been developed and issued and are being piloted in six provinces since 2013.

The Ministry of Health has issued and implemented Circular No. 01/2013/TT-BYT dated 11 January 2013 guiding laboratory quality management in medical facilities. This circular requires medical facilities to transparently implement laboratory test standardization and quality control. This is the evidence for hospitals to use as a basis for trusting quality of lab tests and mutual recognition of lab tests performed in other facilities, with the intention of reducing duplication of lab testing. There are currently three centers for standardization and quality control of medical laboratories in Hanoi and HCMC that are implementing external quality controls. It is expected that 1175 medical laboratories will participate in the external quality control program. The laboratory quality improvement program continues to be implemented and a group of trainers on quality management in medical laboratory testing is being trained. The hospital quality indicators set has been developed and is about to be implemented on a pilot basis in some hospitals.

The Conference on Strengthening measures for hospital quality improvement and the second National forum on hospital quality organized jointly by the Ministry of Health and the EC took place in December 2013 around the topic “Patient safety”. The conference involved experience sharing between international organizations, foreign organizations and experienced hospitals and created a transformation of awareness among hospital leaders and attracted the attention of health sector leaders and the community about medical service quality management, especially regarding patient safety.

Medical service quality at the grassroots level is also receiving attention. The proportion of communes meeting national health benchmarks is one of the key health sector monitoring indicators in The NTP on developing a new countryside. The Ministry of Health is completing work on a project for “Strengthening grassroots health care in the new situation” to submit to the Prime Minister for approval. The Ministry of Health is also developing an ODA project to borrow from the World Bank for investments in grassroots health care. Some existing ODA projects are also actively supporting grassroots health care, such as projects funded by GAVI and the Global Fund to Fight AIDS, Tuberculosis and Malaria.

Hospital quality criteria including 83 items that were developed and issued with Ministry of Health Decision No. 4858/QD-BYT dated 3 December 2013 are being used for evaluation at hospitals. By February 2014, 90 percent of hospitals nationwide have implemented self-assessments and over 60 percent of provincial health bureaus have verified these assessments [49]. This is an instrument for measuring hospital quality, with concrete indicators to help hospitals improve their quality, and at the same time an instrument for monitoring by state management agencies and the people.

The Ministry of Health has issued many measures aimed at improving professional ethics and reducing outrage of patients by ensuring their dignity is respected when receiving medical care. Directive No. 09/2013/CT-BYT dated 22 November 2013 on strengthening effectiveness in receiving and processing information through hotlines has been issued with the Ministry of Health hotline widely disseminated. The hotline has been receiving several thousand calls each month. Hotlines have also been established at provincial health bureaus and hospitals. The Ministry of Health has also issued Circular No. 07/2014/TT-BYT dated 25 February 2014

stipulating the code of conduct for government officials and staff working in medical facilities, creating a legal basis for improving professional ethics of medical workers.

The health sector continues to issue medical practice certificates and operating licenses following regulations under the Law on Medical Examination and Treatment (2009), Decree No. 87/2011/ND-CP, Circular No. 41/2011/TT-BYT and Circular No. 03/2013/TT-BTC. By 10 May 2014, operating licenses had been issued to all 160 private hospitals currently in operation, 26 central hospitals (74 percent of total), 23 percent of public hospitals run by sectors other than the health sector and 61 percent of hospitals managed by the provincial health bureau. The Ministry of Health has issued 21 205 medical practice certificates to health workers in facilities directly managed by the Ministry, reaching 92.2 percent of the total; the provincial health bureaus in 63 provinces have issued medical practice certificates to 80 percent of relevant health workers [74]. The Ministry of Health is developing an online system for issuing medical practice certificates through the internet, which is being piloted in six provinces in order to support this task and unify the management of issuing medical practice certificates, while also developing a national database of medical practitioners.

Difficulties, shortcomings

Some important legal documents have been developed, but not yet issued including: the National Action Program on medical service quality improvement.

The project on development of an instrument for assessment of patient satisfaction for public medical services, developed by The Ministry of Health, is still not yet completed and is still in the period of developing instruments and piloting evaluation of patient satisfaction with medical services.

There is also still no independent agency with responsibility for medical service quality accreditation since no independent organization for quality certification according to stipulations of the Law on Examination and treatment and Decree No. 87/2011/ND-CP has yet been established.

Progress in issuing medical practice certificates and operating licenses has been slow due to human resources difficulties for implementing regulations related to checking on potential criminal records of medical practitioners. The database system for registration and management of operating licenses and medical practice certificates has not yet been implemented nationally. Issuing of medical practice certificates and operating licenses one time for life, based solely on a dossier without assessing practice qualifications or undertaking skills testing, without linkages with continuing medical education, does not ensure quality of medical professionals.

The system of legal documents on medical examination and treatment remains incomplete: The hospital regulations were issued from 1997 and the contents have been changed through various new circulars and guidelines (such as for infection control, nursing, nutrition, hospital pharmacy, emergency and intensive care, medical waste management), but many contents need to be adjusted or replace to be in line with the Law on Examination and Treatment, facilitating implementation by hospitals. The system of technical standards on medical examination and treatment have still not yet been issued.

The system of professional guidelines is in the process of being developed and updated, but with 17 000 different technical services and thousands of treatment guidelines, the work

load is very high, creating a heavy burden for the Ministry of Health, while there is still no mechanism in place to assign responsibility for this task to professional associations, so progress is lower than desired.

5) Reduce hospital overcrowding

Implementation results

The project for reducing hospital overcrowding for the period 2013-2020 was approved by the Prime Minister in Decision No. 92/QD-TTg dated 9 January 2013 with the objective in the short-term to focus on resolving overcrowding in specialist wards of oncology, trauma surgery, cardiology, obstetrics and pediatrics at tertiary hospitals in the two major cities of Hanoi and HCMC, improve quality of medical examination and treatment and improve bed occupancy ratios at district and provincial hospitals where bed occupancy rates are less than 60 percent in 2015 and less than 80 percent in 2020. Following this, the satellite hospital project was approved by Ministry of Health Decision No. 774/QD-BYT dated 11 March 2013, including in period 1 the establishment of a network of 45 satellite hospitals in 32 provinces with 14 hub hospitals and increasing total beds in the 5 specialist wards by 7150. The Ministry of Health has also approved a project on family doctor and family doctor clinics in Decision No. 935/QD-BYT dated 22 March 2013 with the goal of developing the model and management mechanism and piloting operation of the model in family practice clinics in some provinces. Project 1816 continues to be implemented with improvements in the method of implementation through technology transfer to lower level facilities.

A study by the MSA in May 2014 indicated that there is no longer a problem of overcrowding at provincial and district hospitals and in most central and sectoral hospitals. There are only nine central hospitals and a few tertiary hospitals operated by the HCMC health bureau that continue to have patients doubling up in beds, mainly in oncology, pediatrics, obstetrics, cardiology and trauma wards. The Ministry of Health is developing a checklist for evaluating the hospital overcrowding situation in order to continue to guide implementation of the project towards greater effectiveness.

Difficulties, shortcomings

The total number of inpatient beds rose in 2013 but not as fast as growth in the number of patients. In addition, the financial autonomy mechanism combined with some issues of assignment of services to different level facilities, the list of drugs reimbursed by health insurance, limited technical capacity at lower level facilities, the situation of overcrowding at central hospital has not been substantially improved. The bed occupancy ratio is declining slowly, and for 12 out of 38 central hospitals exceeded 100 percent. The overcrowding situation in tertiary hospitals, especially in specialist wards like oncology, pediatrics, cardiology, obstetrics and endocrinology continue to be prevalent. According to VSS, 30 percent of insured patients at the central level and 23 percent of insured patients at the provincial level have bypassed lower levels. The main reason for this bypassing is that patients still don't trust the quality of treatment at lower level facilities.

Development of human resources for health at the grassroots level currently faces various difficulties in terms of number and quality, the policy on priority salary supplements is inadequate to attract health workers to work at the grassroots level, especially in remote

areas (For more details see Chapter II, section 2.2.). Various projects investing in upgrading provincial and district level facilities have been implemented slowly due to difficulties in mobilizing adequate funds through government bond sales (For Projects 950 and 47) (for more details see Chapter II, section 2.4).

The policy promoting joint ventures between public hospitals and the private sector has brought advantages in terms of technical development and increased convenience for patients. However the policy has also led to the situation where hospitals are more likely to overprovide drugs, laboratory tests and high tech services, leading to inequalities in patient care. The mechanism for public hospitals to provide services on request for higher than the official hospital price schedule is not adequately regulated and could lead to some complications (See more details in Chapter II, section 2.1, task 6.).

6) Strengthen hospital management capacity

Implementation results

The Hanoi School of Public Health has set up a Center for hospital management training. Hospital management training centers under the MSA and in various universities continue to open up training courses on hospital management, patient safety, medical service quality management for managerial staff of hospitals. Thousands of hospital managers have been trained each year in various fields including management of human resources, finances, planning, quality, safety, health insurance, patient care, infection control, pharmaceuticals, medical equipment and infrastructure.

Difficulties, shortcomings

Although many training courses on hospital management and quality management have been organized, they are inadequate to meet the very high demand. In addition, some policies related to medical services continue to change, so there is a constant need to update hospital managers about the new policies, making it difficult to satisfy the increasing demand.

7) Traditional medicine

Implementation results

The system of medical services relying on traditional medicine has developed from the central to the commune levels. In 2014 there were a total of 61 traditional medicine hospitals, including 2 central and 59 provincial hospitals. In addition there are four private traditional medicine hospitals. Data gathered from 44 provinces in 2014 indicated that traditional medicine services are also extensively provided in general hospitals. The proportion of general hospitals with a traditional medicine department reached 59.1 percent and the proportion with a traditional medicine team reached 32.1 percent. The proportion of provincial and district hospitals with traditional medicine wards has increased considerably from only 26.3 percent in 2003 to over 58 percent in 2014. By 2014, 42 percent of commune health stations had met national benchmarks for traditional medicine and 61.5 percent were receiving health insurance reimbursement for providing traditional medicine services. In addition, in 2014 a total of 7157 private traditional medicine facilities had been licensed, mainly traditional medicine clinics with Vietnamese practitioners (61.8 percent) and facilities manufacturing traditional medicine products [75].

The proportion of medical consultations using traditional medicine compared to total medical examinations overall at each level has improved considerably, however it does not yet achieve a high share. Specifically, at the province level the traditional medicine share is only 8.7 percent, at the district level 8.95 percent and at the commune level only 18.8 percent. The proportion of inpatient admissions treated using traditional medicine or a combination of traditional and modern medicine also only reaches a low level, 9.2 percent at the provincial level and 24.9 percent at the district level. The proportion of outpatient treatments using traditional medicine compared to total outpatient care is somewhat higher, reaching 13.4 percent at the province level, 16.4 percent at the district level and 26.8 percent at the commune level [75].

Difficulties, shortcomings

The proportion of all patient visits using traditional medicine remains low. Some difficulties in ensuring health insurance coverage of traditional medicine, and issues related to issuing medical practice certificates and operating licenses for traditional medicine practitioners and facilities have hindered development of traditional medicine in Vietnam.

2.7.2. Recommendations for supplementary measures

1) Consolidate and strengthen the grassroots health network

- Urgently consolidate and increase investments to further strengthen the grassroots healthcare network (from district to village levels), in terms of organizational model, physical infrastructure, equipment, sustainable human resources development, operational reforms and financing mechanism, in order to strengthen primary health care and reduce the burden of overcrowding at higher levels.

2) Promote preventive medicine activities, effectively implement national health target programs

- Speed up investments from the state budget for programs to upgrade provincial preventive medicine centers, district health centers, maintain and develop provincial preventive medicine centers to meet national standards according to Decision No. 4696/QD-BYT (2008) and implement national benchmarks for commune health.
- Effectively implement policies in finance, human resources and information systems related to strengthening preventive medicine mentioned in the above sections.
- Advocate for stronger commitments of the authorities at all levels and various sectors to improve the environment and increase people's awareness.
- Implement professional medical measures to control dengue fever, hand, foot and mouth disease according to plan targets.
- Prioritize investments in the NCD prevention and control program, including paying special attention to measures aimed at unifying management of surveillance on disease control measures and control of risk factors, strengthen integration and collaboration in professional activities and service provision between units in the preventive medicine and medical services and between levels of the system.
- Develop and implement policy measures aimed at increasing the role and responsibility of the authorities and other sectors for steering and collaborating in implementation of activities to promote health, prevent disease and provide primary health care.

- Develop and implement regulations on the role, responsibility of the education sector in ensuring nutrition and health promotion for children, pupils in schools.

3) Complete the policy system, consolidate the network and effectively implement activities on population, family planning and reproductive health

- Re-assess the organization of implementing tasks and providing population, family planning and reproductive health services in the population network at all levels and related medical service units in order to appropriately divide up responsibilities between population agencies and medical facilities in clinical and non-clinical professional activities (transfer the clinical functions for family planning to medical facilities).
- There is a need for commitments and active participation of all levels of authorities and sectors in collaboration activities and support from the education sector in ensuring child nutrition, activities for controlling and improving quality of the population, especially controlling the rise in sex ratio at birth.

4) Improve quality of medical services

- Develop additional regulatory documents and guidelines for improving service quality, develop an action program with concrete projects for each field in order to design a national quality system and implement activities effectively. Strengthen training and guidance for applying quality methods in medical facilities.
- Refine the set of criteria for assessing hospital quality. Develop criteria for medical service quality at commune health stations and other medical facilities. Develop and issue regulations on routine laboratory testing for inpatients, outpatients and medical consultations. Develop and issue pilot standards for clinical quality for some diseases.
- Establish financial and non-financial incentive mechanisms for facilities that provide quality services. Research to develop an appropriate model for providing medical services that will be reimbursed by health insurance and incentive policies for commune health stations that achieve good quality.
- Standardize technology and strengthen technology transfer to lower levels in order to improve their ability to respond and their technical qualifications. Strengthen inspections and checking on private medical activities with collaboration of local authorities and the Fatherland Front. Establish inspections for medical services at different state management levels in order to tightly manage professional activities and compliance with regulations.
- Establish an independent quality certification organization and implement an independent quality accreditation mechanism in order to assess and recognize quality for medical service facilities; Develop a project on quality accreditation and a project on assessment to recognize hospital quality.
- Implement the project on developing methods for assessing patient satisfaction.
- Review and choose priorities for developing treatment guidelines for common medical conditions. Develop and issue guidelines for preventing and treating adverse medical events (medical error and adverse events) at medical facilities.

- Consider adjusting the Law on Examination and Treatment oriented towards: issuing medical practice certificates only after skills testing, with time limits to the medical practice certificates, and with linkages between medical practice certificates and continuing medical education requirements.

5) Reduce hospital overcrowding

- Actively implement projects on reducing hospital overcrowding, satellite hospitals, focusing on technology transfer, improving capacity of lower level facilities, paying special attention to management of patients with chronic disease and NCDs. Bring into play the role, function and tasks of preventive medicine facilities in health IEC, management and promotion of health and active disease prevention.
- Strengthen effective feedback from higher to lower levels for cases referred upward.
- Strengthen quality control of medical services, especially strengthen outpatient treatment, controlling inpatient admissions, expanding forms of day treatment and day surgeries. Incorporate diverse forms of organizing treatment into the Law on Examination and Treatment and develop appropriate medical service price policies for them.

6) Strengthen hospital management capacity

- Require hospital management training as a condition for being nominated to a position of director or manager of a hospital.
- Facilitate hospital managers' participation in forums on hospital management in Vietnam and overseas.

7) Traditional medicine

- Continue to implement Prime Ministerial Decision No. 2166/QD-TTg (2010) on the Government plan for development of traditional medicine to the year 2020 and Decision No. 1976/QD-TTg dated 30 October 2013 approving the Master plan for development of medicinal materials to the year 2020 and an orientation to the year 2030. Guide effective implementation of Decision 362/QD-TTg (2014) on the Project investing in upgrading physical infrastructure and medical equipment at traditional medicine hospitals nationwide for the period 2013-2025.
- Strengthen quality checking for medicinal materials in the market and monitoring of professional activities of medical facilities and facilities manufacturing medicinal materials and drugs from medicinal materials.
- Promote checking on the private traditional medicine activities, especially in traditional medicine facilities with foreign practitioners.

3. Implementation of basic health targets in the Five-year health sector plan 2011-2015 and the Millennium Development Goals

In 2013, the halfway point was passed for implementing the Five-year health sector plan for the period 2011-2015. Progress in implementing the planned goals is monitored in

this section. Among the input targets for 2013, estimates indicate that most of the targets have been achieved or exceeded including the number of university-trained pharmacists per 10 000 people, proportion of communes with a doctor, proportion of communes with a midwife or obstetrics-pediatric assistant doctor, and the number of public hospital beds per 10 000 people (Table 12). Two targets have not been achieved, namely the number of doctors per 10 000 people and the proportion of villages served by a village health worker. Currently the health information system and the system for managing medical practice certificates both lack complete information on the number of private medical doctors so these figures only reflect the number of doctors working in the public sector per 10 000 people. If private sector doctors were also included, results would exceed the target. The proportion of villages served by village health workers has declined between 2012 and 2013 to 75.5 percent, mainly because of difficulties retaining village health workers in urban areas. In rural areas coverage reaches 91.5 percent.

In the group of health activity targets, both targets were achieved or exceeded in 2013. The proportion of children under 1 year of age who were fully immunized exceeds even the target for 2015. The year 2013 is the first year where all data on indicators was collected according to the definitions of the Five-year plan targets. According to these data only 42 percent of communes achieved commune health benchmarks, much lower than the target of 50 percent by 2013.

Table 12: Implementation of basic targets in the Five-year health sector plan, 2010-2015

Indicator	2010	2011	2012	2013	2015 target
Input targets					
Doctors per 10 000 people	7.20	7.33	7.46	7.5 (7.6)	8
University-trained pharmacists per 10 000 people	1.8	1.9	1.96	2.1 (1.5)	1.8
Proportion of villages served by a village health worker (%) (both urban and rural)	78.8	82.9	82.2	75.5 (prel.) (88)	90
Proportion of commune health stations served by a doctor (%)	70.0	71.9	73.5	76.9 (76)	80
Proportion of commune health stations served by a midwife or pediatric/obstetric assistant doctor (%)	95.6	95.3	96.4	97.3 (>95)	>95
Inpatient beds in public sector per 10 000 people (excl. commune health stations) *	21.7	22.5	23.5	24.2 (22.0)	23.0
Activity targets					
Proportion of children under age 1 who are fully immunized (%) (7 vaccines in 2010 and 8 vaccines in the period 2011-2015)	94.6	96.0	95.9	91.4 (>90)	>90
Proportion of communes meeting national commune health benchmarks (%) (Reported data do not allow separation of those meeting old and new benchmarks, so the data in 2011-2012 are mixed)	80.1 (old benchmark)	76.8	73.4	42 (50)	60
Output indicators					

Indicator	2010	2011	2012	2013	2015 target
Health insurance coverage rate (%)	60.3	65.0	66.4	68.5	70 [§]
Life expectancy at birth (years)	72.9	73.0	73.0	73.1 (73.6)	74.0
Maternal mortality ratio (per 100 000 live births)	69 (2009)	..	..		58.3
Infant mortality rate (‰)	15.8	15.5	15.4	15.3 (15.2)	14.8
Under five mortality rate (‰)	23.8	23.3	23.2	23.1 (22.0)	19.3
Population (million people)	86.9	87.8	88.77	89.71 (89.57)	<93*
Annual rate of decline in fertility (‰)	fall 0.5	fall 0.5	rise 0.30	rise 0.1 (fall 0.1*)	fall 0.10*
Population growth rate (%)	1.05	1.04	1.06	1.05 (0.95)	0.93
Sex ratio at birth (boys per 100 girls)	111.2	111.9	112.3	113.8 (≤113)	≤113
Malnutrition (underweight) rate of children under age 5 (%)	17.5	16.8	16.2	15.3 (15.5)	15.0
HIV/AIDS prevalence (%)†	0.212	0.225	0.237	0.242 (<0.3)	<0.3

Notes:

Data estimates as of 26 July 2014

Goals are from the Plan for the protection, care and promotion of the people's health 2011-2015. The numbers in () are the 2013 targets. §This goal was adjusted in the Project for implementing the roadmap towards universal health insurance (538/2013/QD-TTg) *This goal was adjusted in the NTP for Population and family planning 2012-2015 (1199/2013/QD-TTg) †Estimated as number of people with HIV (including AIDS and deaths in the year) divided by total population estimate of the GSO.

Source: Indicators 1 to 9 - from the MOH, Health Statistics Yearbook various years [47]. Indicators 10, 12, 13, 14, 15, 16, 17 - GSO. Survey of population change and family planning 1 April various years [27]; Indicator 11 - Census of Population and Housing 1/4/2009 [76]; Indicator 17 -; Indicator 18 - National Institute of Nutrition, Nutrition statistics [3]; Indicator 19 - Number of people with HIV from VAAC surveillance system, MOH [22], denominator of population estimates from the Statistical Yearbook of Vietnam, GSO [40].

Among the output indicators, only two targets were achieved or exceeded in 2013, those are maintaining the HIV/AIDS prevalence below 0,3 percent of population and reducing child malnutrition. The health insurance coverage rate nearly meets the 2015 goal (i.e. the adjusted goal according to the Project for implementing the roadmap towards universal coverage). MMR cannot be evaluated because no up-to-date data source is available since 2009. Some indicators indicate that the target was almost achieved, those are IMR and population size. Under-five child mortality remains high and life expectancy at birth remains low compared to the 2013 targets. Population growth is somewhat high compared to the goal while the fertility rate has risen rather than declined according to the target. The sex ratio at birth has increased rapidly, reaching 113.8 in 2013 compared to the goal of maintaining it at 113 or below.

Even though many targets for 2013 have not been met, almost all indicators monitoring implementation of the Five-year health sector plan indicate improvement, with potential for achieving the targets by 2015. However, some of the targets will be difficult to achieve according to the plan.

When developing the Five-year health sector plan for 2011-2015, rather large disparities in health status between regions and living standards groups were pointed out as a problem that needs to be resolved. Monitoring of these basic health sector indicators indicates that even though overall improvement is being seen, regional gaps have almost not declined at all (Table 13).

Table 13: Regional disparities in basic health indicators

Indicator measuring level of disparity (indicator for the region with the highest level compared to the region with the lowest level)	2010	2011	2012	2013 (est.)	Performance in reducing disparities
Life expectancy at birth	1.1	1.1	1.1	1.1	No change
IMR (deaths per 1000 live births)	2.8	2.6	2.9	2.9	Increasing gap
U5MR (deaths per 1000 live births)	2.9	2.7	2.9	2.9	No change
MMR (per 100 000 live births)	n/a	2.9	3.6	n/a	Increasing gap
Child malnutrition- Underweight (%)	2.3	2.4	2.5	2.7	Increasing gap
HIV prevalence (per 100 000 people)	6.9	n/a	n/a	6.5	Falling gap

Source: Life expectancy, IMR, U5MR- GSO. Survey of Population and Family Planning various years [27]; MMR - Data from Maternal and Child Health Department of the MOH. Child malnutrition- National Institute of Nutrition [3]; HIV prevalence from VAAC [77].

4. Situation of implementation of the health-related MDGs

The MDGs are a set of eight goals to which 189 United Nations member countries, including Vietnam, have committed to achieving by 2015. Five out of the eight MDGs are directly related to health, namely MDG 1- Eradicate Poverty and hunger, MDG 4- Reduce child mortality, MDG 5- Improve maternal health and universal access to reproductive health, MDG 6- Combat HIV/AIDS, malaria and other diseases, and MDG 7 - Ensure environmental sustainability.

The implementation of the MDGs is assessed on the basis of the UN monitoring indicators. Table 14 summarizes progress towards the MDGs and evaluates the likelihood of achieving these goals. The progress of hard-to-achieve targets is analyzed in depth with a view to finding appropriate solutions. Some targets, for which data are not regularly collected or are not included in Table 14, are also analyzed below.

Although Vietnam has achieved or is capable of achieving most of the MDGs, yet there are still some goals that require greater efforts. By the end of 2013, the MDGs that had been achieved include reducing child malnutrition, reducing malaria morbidity and mortality rates, and increasing access to safe drinking water and basic sanitation. Some goals such as reducing the IMR, improving access to ARV therapy for all those who need it and reducing the TB prevalence rate are achievable if the current progress is ensured. Some indicators are not linked with any specific targets, but nevertheless show an improving trend, including increased access to universal reproductive health (which is shown through the antenatal care rate, the proportion of deliveries assisted by a skilled assistant, the contraceptive prevalence rate and the adolescent fertility rate) and the increase in the proportion of female sex workers using condoms when having sex with their clients. It is worrying that some goals will be hard to achieve by 2015 such

as reducing the under-five mortality rate and the maternal mortality ratio. Some sub-targets need more attention such as increasing use of condoms among people who inject drugs and reversing the recent decline in the proportion of children receiving ARV therapy among those with HIV infections.

Table 14: Indicators assessing progress towards achieving MDGs in Vietnam, 2012-2013

Goal	Health indicator	Baseline	2012	2013	2015 goal	Data source
MDG 1: Eradicate poverty and hunger						
Target 1C: Halve, between 1990 and 2015, the proportion of people who suffer from hunger	1.8 Children under 5 moderately or severely under-weight	41% (1990)	16.2%	15.3%	20.5% Achieved	National Institute of Nutrition [3]
MDG 4: Reduce child mortality						
Target 4A: Reduce under-five mortality rate by two-thirds	4.1 Under-five child mortality rate	58 (1990)	23.2	23.1	19.3 Hard to achieve	GSO [27]
	4.2 IMR	44.4 (1990)	15.4	15.3	14.8 Achievable	GSO [27]
MDG 5: Improve maternal health and achieve universal access to reproductive health by 2015						
Target 5A: Reduce MMR by three-quarters	5.1 MMR	233/100 000 (1990)	69/100 000 (2009)	n/a	58.3/100 000 Hard to achieve	GSO [76]
Target 5B: Achieve universal access to reproductive health care	5.5 Proportion of births in which the mother had 3 or more antenatal care visits (VN indicator)	87.9% (2004)	89.4%	89.7%	n/a	MOH. Health statistics.
MDG 6: Combat HIV/AIDS, malaria and other diseases						
Target 6A: Halt and begin to reverse the spread of HIV/AIDS	6.1 HIV prevalence rate in the 15-24 group and other high risk groups	15-24 (2000) 0.22% FSW: 5.3% MSM: 1.8% PWID: 22.1%	15-24: 0.17% FSW: 6.9% MSM: 12.5% PWID: 24.7%	15-24: 0.16% FSW: 6.9% MSM: 13.9% PWID: 23.9%		HIV/AIDS Estimated and Projections 2014-2020 VAAC [21].

Goal	Health indicator	Baseline	2012	2013	2015 goal	Data source
Target 6B: Achieve, by 2010, universal access to treatment for HIV/AIDS for those who need it.	6.4 Proportion of people with advanced HIV infections with access to ARV therapy	5% (Estimates and projections, 2005)	Overall 59.9% Adults: 58.9% Children: 86.3%	Overall 67.6% Adults: 67.1% Children: 79.2%	70% Achievable	VAAC [78]
Target 6C: By 2015, halt and begin to reduce malaria incidence	6.6 Malaria morbidity and death rates	Notified cases 96/100 000 Deaths: 0.031/100 000 (2000)	Notified cases 39/100 000 Deaths: 0.006/100 000	Notified cases 33/100 000 Deaths: 0.006/100 000	Notified cases: <40/100 000 Deaths: <0,02/100 000 Achieved	General department of Preventive medicine [20]
Target 6D: Control TB	6.7 TB prevalence	375/100 000 (2000)	113.8/100 000	111.2/100 000	187/100 000 Achieved	MOH [based on notified cases]
		403/100 000 (1990)	218/100 000	n/a	187/100 000 Difficult to achieve	UN [estimated prevalence]
MDG 7: Ensure environmental sustainability (focusing on access to safe water and basic sanitation)						
Target 7C: Halve the number of people without sustainable access to safe drinking water and basic sanitation	7.1 Proportion of population using an improved sanitation facility	37% (1990)	75%	n/a	68.5% Achieved	WHO/ UNICEF JMP [79]
	7.2 Proportion of population using an improved drinking water source	57% (1990)	95%	n/a	78.5 Achieved	WHO/ UNICEF JMP [79]

Target 1C: Halve the proportion of people who suffer from hunger

Achievements:

The indicator for measuring achievement of this target is the proportion of children under age five who are moderately or severely underweight (low weight for age). Nationally in Vietnam, the target has been achieved before the end line of 2015, with declines of more than half for both severe and moderate levels of underweight (Table 15).

Table 15: Reduction in child malnutrition, 1990-2015

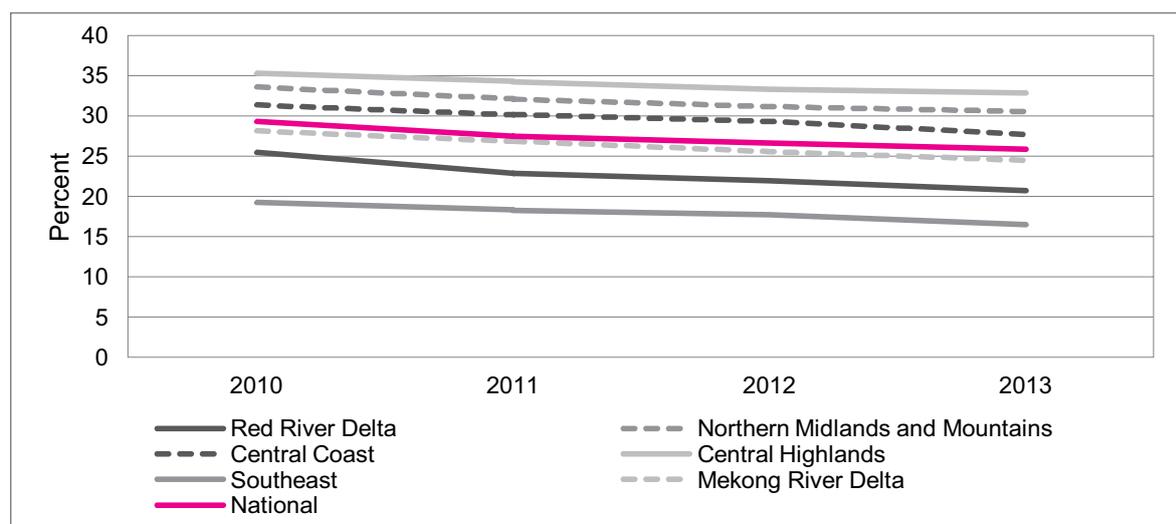
Indicator	1990	2013	2015 Target	Situation
Proportion of children under age 5 who are underweight	41%	15.3%	20.5%	Achieved, need to maintain sustainably
Proportion of children under age 5 who are severely underweight	11%	1.5%	5.5%	Achieved, need to maintain sustainably
Proportion children under age 5 who are moderately underweight	30%	13.8%	15.0%	Achieved, need to maintain sustainably

Source: National Institute of Nutrition [3].

Difficulties and challenges:

Vietnam has large regional disparities in child malnutrition (Figure 31). Child malnutrition rate remains very high in the Northern midlands and mountain areas, North Central and Central coastal areas and especially in the Central Highlands - the only region that has not yet achieved the target. In 2013, the stunting rate (low height for age) in children under age five was still at a high level (25.9 percent). Compared with other developing countries in the region, Vietnam ranks sixth. The stunting rate in Vietnam is higher than in China, Thailand, Mongolia, Malaysia, and Sri Lanka. Up to 2013, there were still 4 provinces with the child stunting over 35 percent, a very high rate according to WHO classification.

Many factors affect child nutrition such as environmental, socio-economic, and political factors, and especially poverty [80]. However, medical and nutritional interventions can reduce the child malnutrition rate. According to WHO, effective intervention programs in Vietnam and in the world include micronutrient supplementation for women in reproductive ages (especially during pregnancy), de-worming, nutrition education on breastfeeding, vitamin A and zinc supplements, appropriate food supplements for children from 5-24 months, and conditional cash transfers [81].

Figure 31: Trends in reduction of stunting by region, 2010-2013

Source: National Institute of Nutrition [3].

Many mothers and other family members, especially those living in remote and isolated areas or areas with a large number of ethnic minorities still lack appropriate nutritional knowledge and practice [82], [83]. In 2014, only 26.5 percent of newborns are breastfed within one hour after birth. About 24.3 percent of infants under six months of age are exclusively breastfed, another 49.0 percent are mainly breastfed. Some 65.6 percent of children over one year of age continue breastfeeding. When supplementary foods are introduced to children, only 90.5 percent of children aged 6 to 23 months received the minimum recommended number of servings, and 46.9 percent of those aged 0 to 23 months were given age-appropriate breastfeeding [84]. Postpartum depression is linked with worse nutritional status of children. Approximately one-third of mothers in Vietnam are estimated to suffer from postpartum depression [85]. The network for implementing nutritional activities remains unstable. Nutrition staff working in the community, schools and hospitals are insufficient and have inadequate skills. The national nutrition strategy does include training for nutritional workers. Attention paid to child nutrition by the authorities at all levels in some localities is still somewhat limited. Government budget allocations for nutrition activities are limited, while external assistance funds for nutritional activities in Vietnam are diminishing.

MDG 4: Reduce child mortality

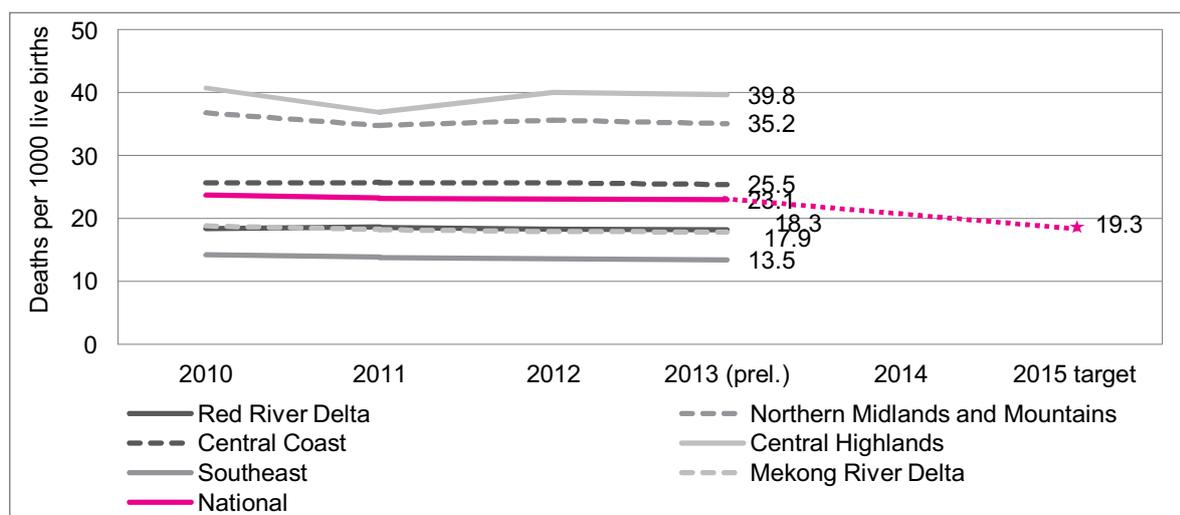
Achievements

There has been a sharp decline in the under-five and infant mortality rate (IMR) over the past 10 years. It is estimated that by 2013, the IMR in Vietnam fell by almost two thirds compared to the baseline year of 1990, making it highly likely that the MDG target will be achieved by 2015.

Difficulties, challenges

From 1990 to 2013, the under-five mortality rate has fallen only 60 percent. Major efforts will be required in order to achieve the 2015 goal, which requires an additional decline of 4 under five deaths per 1000 live births in the years 2014 and 2015 (Figure 32). Regional disparities in child mortality are rather large. In the Central Highlands and the Northern midlands and mountain areas, the infant and child mortality rates are the highest. Child mortality in rural areas is two times higher than in urban areas. In 2013, it is estimated that a total of 26 600 children died before their fifth birthday. For every 1000 live births, it is estimated that 6.9 children die within the first 6 days of life, 2.6 die between 7 and 28 days, 3.7 die between 1 and 12 months, and 5.4 die between 1 and 5 years of age [86]. Thus, among total child deaths under age 5, about half are deaths occurring before the first month of age, and approximately 30 percent between the ages of 1 and 5.

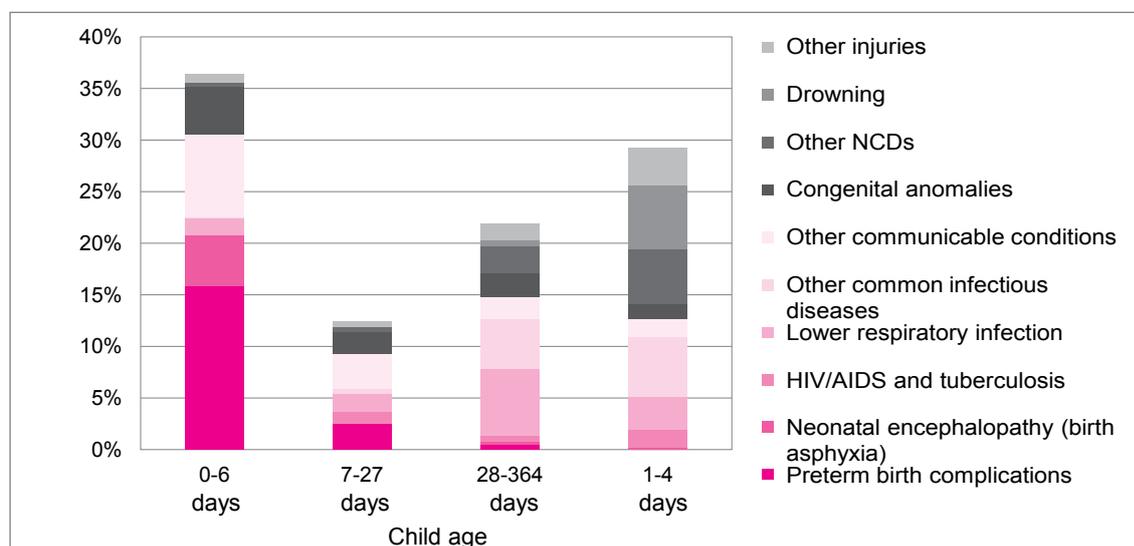
Figure 32: Under-five mortality by region, 2010-2013



Source: General Statistics Office, Survey of Population Change and Family Planning various years [27].

Five main causes of under-five mortality in Vietnam include birth complications (27.0 percent), congenital anomalies (19.3 percent), birth asphyxia and trauma (10.3 percent), lower respiratory infections (10.0 percent), and other infections (9.1 percent) (Figure 33). Accidents and injuries accounted for 4.6 percent of total under-five deaths [87]. Malnutrition is a main underlying cause of morbidity and mortality in children [80].

Figure 33: Main causes of child mortality in Vietnam, 2010



Source: Calculated from data of the Global Burden of Disease Study 2010. Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

WHO has studied cost-effectiveness of the most essential interventions aimed at reducing infant mortality. Antenatal, delivery and postnatal interventions can be implemented even if conditions and resources are limited. These interventions are categorized into those that can only be implemented at referral facilities, others that can be implemented at primary health care facility and others in the community [88].

According to studies carried out in Vietnam, several socio-economic factors are associated with high infant mortality including low educational attainment of the mother, ethnic minority family background [89] and geographical distance [90]. Vietnam has implemented many interventions in the list of key interventions recommended by WHO, but coverage remains low and somewhat ineffective. Interventions during pregnancy and delivery are very important to reduce mortality from prematurity, low birth weight, and birth defects. Interventions to improve nutrition help to reduce the incidence of low birth weight, and improve children's resistance against diseases. There are many free vaccines used in the EPI, however, the Multiple Indicator Cluster Survey 2014 shows that the full immunization rate reported by mothers in the surveys was lower than the immunization rate reported through the statistical system. For example, the proportion of children who received 3 diphtheria, pertussis and tetanus vaccinations was 88.6 percent in the survey while the measles vaccination rate was only 86.2 percent, compared to statistical reports of over 90 percent coverage [84]. Haemophilus influenza B vaccine (Hib) has been included in the EPI in combination with hepatitis B, tetanus, diphtheria and pertussis (Quinvaxem) since 2010. By 2013, due to many cases of complications, the Ministry of Health halted use of this vaccine to allow time for investigation. However, once the vaccine was again permitted to be used, some more child deaths have occurred after immunization. Due to such cases of adverse vaccine events, many people have lost confidence in the immunization program and have not taken their children to health facilities for vaccination. Consequently, there has been high incidence and deaths from measles in 2014. There are still some vaccines that are not included in the EPI even though they are recommended by WHO such as vaccines against pneumococcal conjugate (pneumococcal), Rota virus (Rotavirus), meningitis (meningococcal) [88], and rubella [91]. According to the Multiple Indicator Cluster Survey 2014, management of common diseases among children remained relatively ineffective. For example, only 57.8 percent of children with diarrhea were treated for dehydration, 81.1 percent of children with acute respiratory infection symptoms sought care in medical facilities and the rate of those receiving antibiotic therapy was only 88.2 percent. From the 2011 round of the survey, the risk of child accidents and injuries is very high since 9.4 percent of children under age 5 have ever been left at home alone or were taken care of by a child under age 10 [84].

MDG 5: Improve maternal health and achieve universal access to reproductive health by 2015

Achievements

The maternal mortality ratio in Vietnam dropped by more than three times from 233 deaths per 100 000 live births in 1990 to 69 deaths per 100 000 live births in 2009, the latest year for which reliable Vietnamese estimates are available. By 2013, an international comparative study estimated that MMR in Vietnam had declined to 49 deaths per 100 000 live births, but the uncertainty interval surrounding this estimate ranges from 29 to 84 deaths per 100 000 live births so it cannot be concluded with confidence that the MDG has been achieved. With these estimated data, Vietnam is ranked 34th in the world for reductions in MMR [2]. The most recent international report updating progress towards achieving MDGs for women and children (Countdown 2014) estimates that Vietnam has seen an annual reduction of 4.4 maternal deaths per 100 000 live births during the period 1990-2013, and is ranked 13th out of 75 high burden countries in terms of speed of reducing MMR [92].

Besides progress in reducing MMR, Vietnam has also made progress in improving access to reproductive health care, with increases in the proportion of pregnant women having

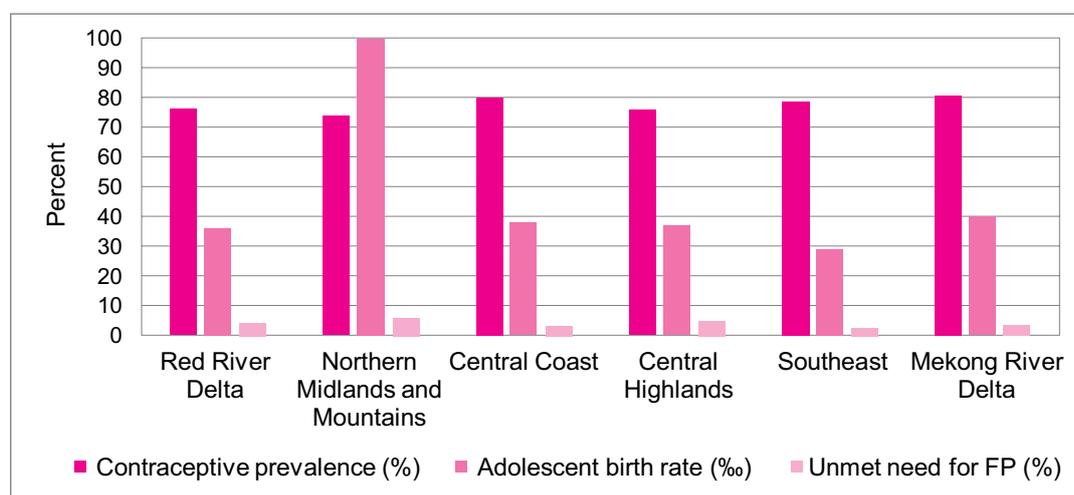
at least one antenatal care visit (95.8 percent), deliveries assisted by skilled attendant (93.8 percent), and deliveries in health facilities to (93.6 percent) according to the 2014 MICS [84]. The reproductive health care network continues to expand. In order to reduce obstetric complications and maternal mortality in the mountainous and remote areas and areas with ethnic minorities, where a high proportion of deliveries take place in the home, the Ministry of Health is encouraging expectant mothers to give birth at health facilities and has also embarked on training village midwives in management of pregnancy and detection and timely referral of high risk pregnancies, as well as providing clean and safe delivery kits.

Difficulties and challenges

Although maternal mortality fell considerably during the period 1990-2009, the MMR underwent little change between 2006-2009. Therefore, greater efforts are needed in order to achieve the target set for 2015. While MMR has been declining over this long period, regional disparities are still large. (Incomplete estimates from the Maternal and Child Health department indicate that maternal mortality rates in mountainous areas are more than three times higher than in delta areas).

Avoiding unintended pregnancy is critical to reducing maternal mortality. The contraceptive prevalence rate, the adolescent birth rate and unmet need for family planning, are three UN monitoring indicators used to assess the situation related to the MDG on maternal mortality. Figure 34 shows that the Northern midlands and mountain areas has exceptionally high adolescent birth rates. In the two poorest regions (Central Highlands and Northern midlands and mountain areas) unmet need for family planning is higher and contraceptive prevalence is lower than in other regions.

Figure 34: Selected indicators related to access to family planning by region, 2011



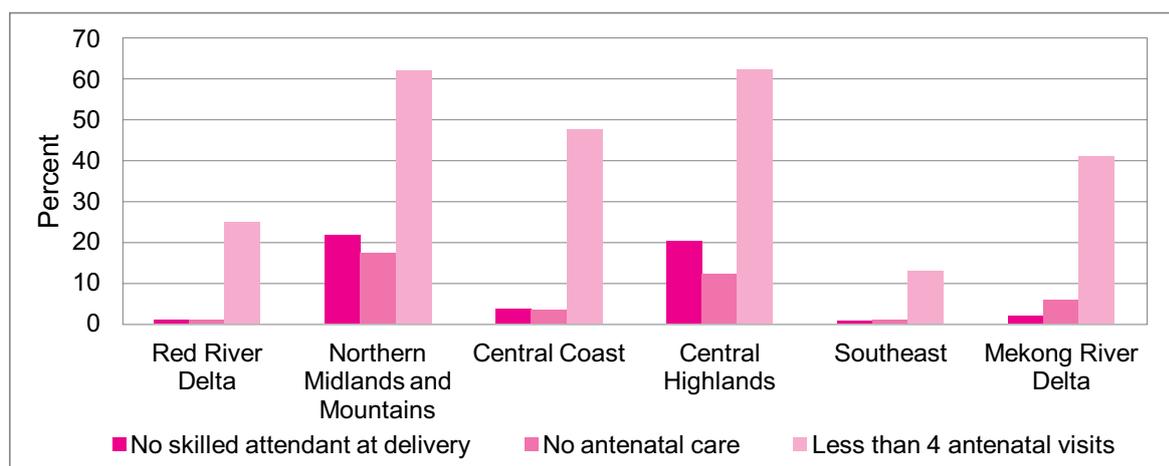
Source: GSO. MICS Survey 2011 [84].

Other interventions to reduce maternal mortality include an antenatal screening package and management of hypertension with therapeutic drugs to prevent pre-eclampsia, screening and treatment for anemia, advice on dangerous symptoms that need immediate medical attention and interventions that can be provided at primary health care facilities by qualified medical workers. Several interventions can be implemented at primary health care facilities during delivery by skilled health workers including using magnesium sulfate for eclampsia,

prophylactic uterotonics to prevent postpartum hemorrhage, active management of the third stage of labor to prevent postpartum hemorrhage, management of postpartum hemorrhage, and detecting and managing postpartum sepsis. Several other interventions require hospital care such as induction of labor and caesarean section [88].

The current situation in Vietnam indicates that some groups of pregnant women do not access necessary interventions to ensure the safety of delivery (Figure 35). Some 5.4 percent of pregnant women had no antenatal care. However, the figures for those living in the Northern midlands and mountain areas (16.2 percent) and the Central Highlands (11.2 percent) are much higher. Lack of antenatal care is even higher among ethnic minority women (24.9 percent), the poorest women (19.9 percent) and those who have not yet completed primary education (57 percent). The quality of antenatal care remains low. Nationally, only 42.5 percent of pregnant women had their blood pressure measured and blood and urine tests performed to detect pre-eclampsia and anemia. The proportion of pregnant women who actually received these three antenatal care services was high in the Southeast (73.7 percent), but the figure for the Northern midlands and mountain areas was only 20.7 percent and in the Central Highlands the rate was 19.3 percent.

Figure 35: Unmet need for antenatal care and assisted delivery among women giving birth by region, 2011



Source: GSO. MICS 2011 [84].

Interventions during labor and delivery follow a similar pattern. Although the proportion of deliveries assisted by a skilled attendant and the delivery rate in health facilities are generally very high, regional disparities remain large. While over 99 percent of pregnant women in the Red River Delta and the Mekong River Delta were assisted at delivery by skilled attendants, the figures in the Northern midlands and mountain areas was 78.3 percent and in the Central Highlands was 79.7 percent. For ethnic minority women only 63.4 percent had skilled attendants at delivery. The proportion of women giving birth at home is still very high in the Northern midlands and mountain areas (22 percent) and in the Central Highlands (20.7 percent). The figure for ethnic minority women is 38.3 percent, compared with the national average rate of 7.4 percent [84]. Although deliveries are assisted by skilled attendants, many health care facilities, including neonatal units at district hospitals, still lack equipment, supplies, drugs or necessary skills to provide timely interventions to save the lives of newborns.

MDG 6: Combat HIV/AIDS, malaria and other diseases

Halt and reverse the spread of HIV/AIDS

Achievements

The number of newly detected HIV/AIDS infections in recent years has declined substantially compared to 2007, the peak of Vietnam's HIV/AIDS epidemic. In 2007 there were 30 846 HIV case notifications, while in 2013, the figure was only 12 559 cases, indicating a reduction of 60 percent compared to 2007. During the same period, the number of AIDS patients and deaths related to HIV/AIDS have also fallen about 50 percent. Vietnam has maintained prevalence below 0.3 percent of the population, lower than the goal set in the action plan for the period 2004-2010. Groups at high risk of contracting HIV/AIDS in Vietnam are people who inject drugs, female sex workers and men who have sex with men. The methadone replacement therapy harm reduction program is being rapidly expanded. By October 2014, 38 out of 61 provinces are providing methadone treatment, through 122 facilities treating over 22 000 patients, yielding substantial benefits in terms of health, HIV prevention, and contributions to stabilizing order, security and socio-economic development. ARV treatment has also been expanded, with 318 outpatient clinics nationally treating nearly 90 000 HIV/AIDS patients, equivalent to 67.6 percent of those in need, with good potential to achieve the goal of 70 percent by 2015 [78].

Difficulties and challenges

Vietnam still faces many challenges in the fight against HIV/AIDS. Although the number of HIV cases detected annually has declined, prevalence remains high. Currently, each year, Vietnam detects about 12 000 to 14 000 new HIV infections. According to some forecasting experts, if Vietnam wants to control the HIV/AIDS epidemic, Vietnam must reduce the number of new infections each year to below 1000 people per year [37]. Even though the number of new cases detected has fallen, the total number of cumulative HIV cases nationally continues to rise. It is estimated that by the end of 2013, nationally there were about 256 000 people living with HIV [77]. HIV/AIDS is still a major burden on the people's health, the third most important cause of premature mortality and the sixth most important cause of burden of disease measured in DALYs in Vietnam [93]. The HIV/AIDS epidemic in Vietnam is still concentrated, mainly among high risk groups such as people who inject drugs (accounting for 32 percent), female sex workers and their clients (31 percent), and people who have regular sexual relations with high risk groups such as injecting drug users and male homosexuals (24 percent), although in some areas, prevalence has reached the level of a generalized epidemic [21].

Access to the HIV prevention and control services is not as high as desired. Although the proportion of people who have adequate knowledge of HIV/AIDS has increased among women aged 15-24 (from 25.4 percent in 2000 to 51.1 percent in 2011), the figure for men actually decreased from 50.3 percent in 2005 to 44.1 percent in 2009 [94]. In 2013, the proportion of female sex workers accessing HIV/AIDS prevention programs was 51 percent while the figure for of men who had sex with men was 42.3 percent. The rate of condom use increased among female sex workers, however it almost remained unchanged among men who had sex with men. The proportion of people who inject drugs who used condoms also decreased (Figure 36) [78]. The growth in coverage of methadone replacement therapy has been slow. Currently, only 27 percent of patients received methadone replacement therapy compared with the planned target of 80 000 people receiving this service by 2015 [4].

Figure 36: Condom use at last high risk sex, 2009-2013



Note: No information is available for 2010. FSW=female sex worker; MSM=men who have sex with men; PWID=people who inject drugs.

Source: National Committee for AIDS, Drugs and Prostitution Prevention and Control. (2014) Vietnam AIDS Response Progress Report 2014. Following up the 2011 Political Declaration on HIV/AIDS. Reporting Period January 2012 to December 2013. Report dated 31 March [78].

Medical services aimed at preventing mother-to-child transmission of HIV currently only meet half of need. The proportion of pregnant women tested for HIV was only 49.7 percent in 2013. The proportion of pregnant women with HIV infection who received prophylactic ARV therapy increased from 49.1 percent in 2010 to 57 percent in 2013, however unmet need for these drugs remains [78]. The estimated number of HIV-infected children aged 0-14 in 2013 was 5904 [21]. Currently there are only 226 facilities providing services for prevention of mother-to-child transmission of HIV, of which 132 are at the district level, accounting for 25 percent of total districts nationally. ARV treatment has been expanded, but still does not meet demand; a high proportion of patients begin treatment late.

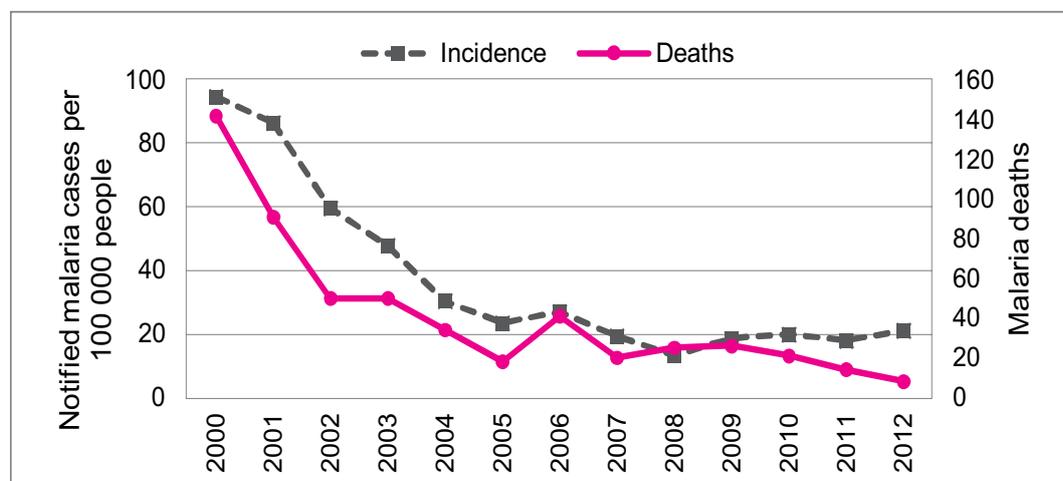
State budget investment in HIV/AIDS control remains quite low and has fallen severely. About 80 percent of funds for HIV/AIDS prevention and control come primarily from external assistance. About 95 percent of funds for procuring ARV drugs and 100 percent of funds to procure methadone are funded by international aid agencies. External funds are still being used to support procurement of equipment, pay salaries and supplements for health workers and provide professional training. Vietnam has recently become a lower-middle income country. Funding sources for HIV/AIDS programs are being cut dramatically and will cease in 2016-2017. Vietnam will not be able to achieve and sustain achievements of the MDG combatting HIV/AIDS unless funding from the state budget and other sources is promptly found to replace declining external assistance in this area. HIV/AIDS treatment facilities do not yet meet conditions of Circular No. 09/2011/TT-BYT so they are not yet eligible for reimbursement from the health insurance fund [95]. In the context of external assistance funding for HIV treatment being cut, health insurance fund reimbursement is being considered as the most feasible alternative for sustaining HIV/AIDS treatment.

Discrimination and stigma against people infected by HIV/AIDS remains high, creating an important barrier that hinders people from HIV testing for early detection and referral to treatment services [78]. Few interventions are in place to prevent stigma and discrimination.

*Halt and begin to reverse malaria morbidity**Achievements*

The malaria control program has achieved great success in reducing malaria morbidity and mortality. Between 2000 and 2012, malaria morbidity declined nearly 77 percent and deaths from malaria dropped by nearly 94 percent (Figure 37). Vietnam has reached the national target of reducing the incidence of malaria to under 40 per 100 000 population and reducing the mortality rate to below 0.02 per 100 000 population. Malaria morbidity per 100 000 population and malaria deaths in Vietnam are relatively low compared to developing countries in Asia (See Figure 6 above). Vietnam has potential to achieve the goal of eliminating malaria by 2030.

Figure 37: Trends in malaria morbidity and mortality, 2000-2012



Source: Number of malaria cases and malaria deaths-World Malaria Report 2013 [7]. Population for estimating rate - General Statistics Office. Average Population by gender and urban/rural areas. <http://www.gso.gov.vn>.

Difficulties and challenges

Vietnam is currently in the stage of controlling malaria in order to sustain the achievements of reducing the malaria morbidity and mortality rates and gradually to eliminate the disease by 2030. Although the malaria morbidity and mortality rates have decreased substantially, nearly 20 000 people are infected with malaria every year and malaria morbidity has not decreased in the period 2009 to 2012. According to WHO estimates, there are 34 million people living in malaria endemic areas in Vietnam, 16 million of whom are living in high risk areas, mostly in mountainous and remote areas. Every year more than 3 million cases suspected of malaria receive malaria testing [7]. In malaria endemic areas, population mobility and travel across borders remains high. Malaria prevention and control in areas with ethnic minorities is less effective due to their traditional lifestyle (such as sleeping in forests without mosquito nets). Drug-resistant malaria has been detected and is showing an increasing trend, with the risk that it will spread to other areas of the country.

The main activities to prevent malaria include control of malaria vectors and self-protection mainly through using insecticide treated bed nets as recommended by WHO. Inadequate funds for implementing the strategic plan for the prevention and control of malaria is a major challenge.

Control TB

Achievements

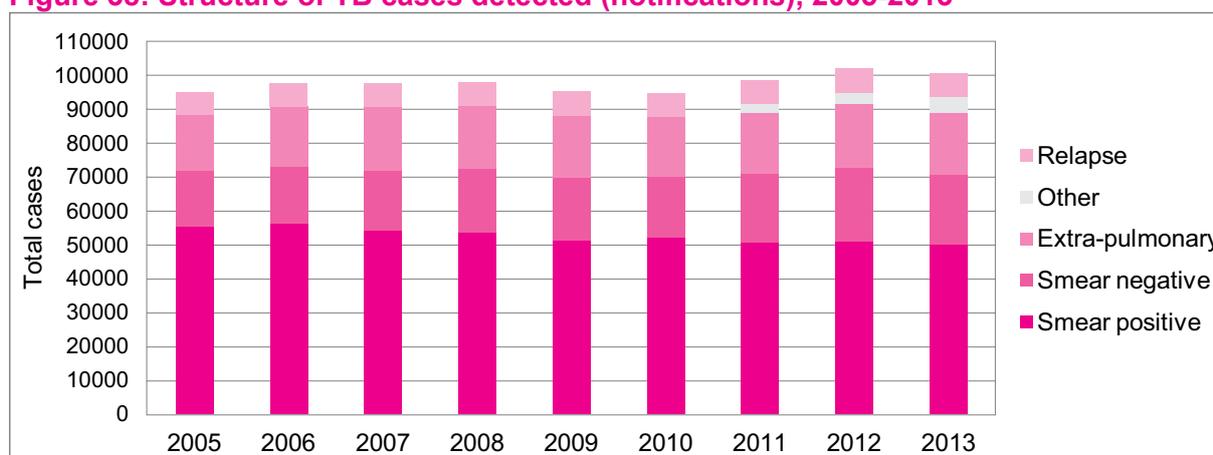
TB control activities are being implemented throughout the country. The share of estimated TB infections detected has increased from 29 percent in 1990 to 56 percent in 2000 and 76 percent in 2012. The cure rate among AFB+ patients is rather high, over 92 percent for the period 2000-2012. According to WHO estimates, TB prevention and control programs have contributed to reducing TB prevalence from 375 per 100 000 population in 2000 to 225 per 100 000 population in 2011 [8]. If greater efforts are made, the target of reducing prevalence to 187 TB patients per 100 000 population by 2015 is achievable.

Difficulties and challenges

TB epidemiology is rather complicated. The number of TB notifications remains high and even increased slightly in the period 2010-2013 (Figure 20 above). According to WHO, Vietnam ranks 12th among the 22 countries with the highest TB burden and 14th among 27 countries with the highest burden of multi-drug resistant TB. The high proportion of patients with AFB-negative TB and extra pulmonary TB is causing difficulty in diagnosis (Figure 38). The number of multi-drug resistant TB patients has been increasing, in 2013 it is estimated that about 3800 TB cases involved multi-drug resistance (about 4 percent of confirmed TB cases) including both new and relapse cases. Among relapse cases, about 23 percent are estimated to be infected with multi-drug resistant TB. Approximately 9300 people living with HIV are also infected with TB, however only 66 percent of TB patients are tested for HIV [8].

Resources for implementing the prevention and control of TB are extremely limited. In 2013 the estimated budget for implementing TB prevention and control was 66 million USD, of which 8 percent is being funded from the state budget and 20 percent from external assistance, with the remaining budget still unfunded [8]. The health workforce for the TB control network remains inadequate and unstable. New techniques for controlling TB have potential to be highly effective, but they are expensive and require large investments.

Figure 38: Structure of TB cases detected (notifications), 2005-2013



Source 2005-2012: WHO-TB data [8] and 2013: NTP TB data.

Safe drinking water and basic sanitation

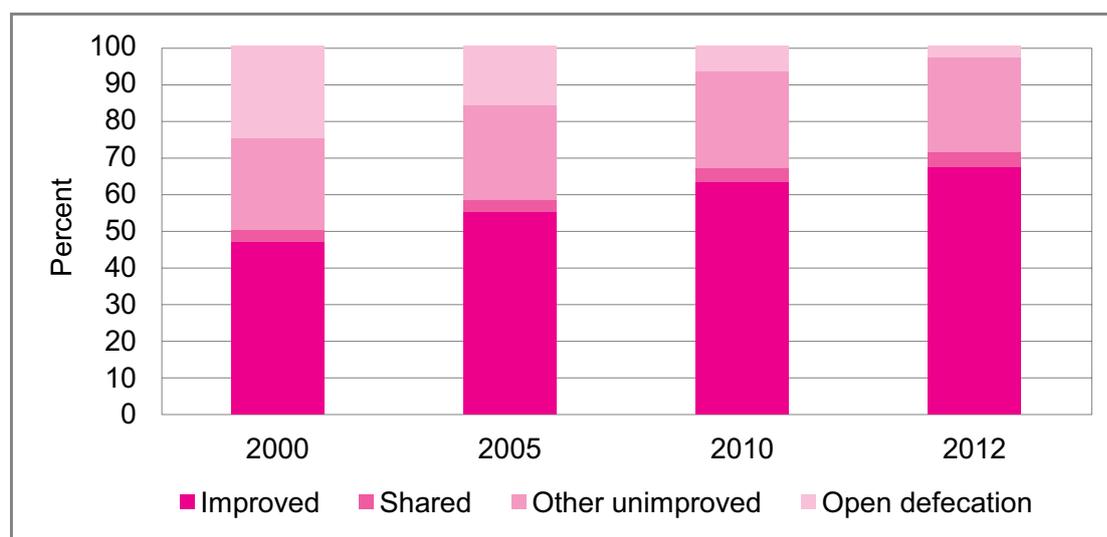
Achievements

The results of the “Joint Monitoring Program for Water Supply and Sanitation” (JMP) carried out by WHO and UNICEF in collaboration with the General Statistics Office show that Vietnam had already achieved MDGs for water and sanitation in 2010. The proportion of population with access to safe drinking water was 62 percent in 1990 and increased to 95 percent by 2012. The percentage of the population with improved latrines was 37 percent in 1990, increasing to 75 percent by 2012. The burden of disease due to use of unsafe water and poor sanitation is mainly in terms of diarrheal diseases. In Vietnam in 1990, diarrheal diseases were the 6th highest cause of disease burden in terms of DALYs, but by 2010 diarrheal diseases were no longer present among the top 25 causes of disease burden in Vietnam [93].

Difficulties and challenges

Although there has been considerable improvement in people’s access to safe water and sanitation, there are still large disparities across regions, ethnic groups and urban-rural areas. The proportion of the population with access to basic sanitation has improved considerably, even exceeding the target, however, in rural areas access to basic sanitation remains low (Figure 39). Some 3 percent of rural residents do not even have a latrine and 21 percent do not have improved latrines that can ensure basic sanitation. Improving sanitation in rural areas requires close inter-sectoral collaboration, including the Ministry of Construction (managing water supply and urban sanitation), the Ministry of Agriculture and Rural Development (regulating rural water supply), the Ministry of Natural Resources and Environment (monitoring water resources and water source protection), and the Ministry of Health (issuing technical standards for safe drinking water and improved latrines).

Figure 39: Structure of toilet types in rural areas, 2000-2012



Source WHO and UNICEF, Progress on Drinking-water and sanitation, 2014 [79].

Conclusions

The above analysis shows that, after 20 years of implementing the MDGs, the strong commitment, considerable efforts and appropriate approaches taken by the Vietnamese Government has paid off with recognition by the international community of Vietnam as one of the pioneers in implementing health-related MDGs. Compared with 74 other countries with high burden of maternal and child mortality, Vietnam ranks 13th in terms of most rapid reduction in estimated maternal mortality rates [92]. However, the implementation of MDGs still faces many challenges, including:

- There is little remaining time for achieving the MDGs, yet a few of them will require greater effort if they are to be achieved. Under-five mortality reductions need to be accelerated if the MDG on child mortality is to be achieved. The target for a three-quarters reduction in maternal mortality is a challenging one, made more difficult by the lack of complete data on the situation. The target of universal access to reproductive health care is also hard to achieve since lack of routine antenatal exams and home delivery without assistance of skilled attendants is still widespread in disadvantaged areas. The targets related to halting and reversing the spread of HIV/AIDS are unlikely to be achieved without support of the entire political system as well as adequate investment. More efforts should be made to achieve the targets of controlling malaria, TB and other diseases by 2015. In addition, other problems such as overweight, obesity, stunting, multi-drug resistant TB, co-infection with TB and HIV and other emerging diseases need to be addressed.
- Regional disparities are increasing. Data from the Maternal and Child Health Department of the Ministry of Health in Vietnam indicate that the maternal mortality ratio and child mortality in some mountainous areas is 3 to 4 times higher than in delta and urban areas, and is almost two times greater than the national average. Although the target for child malnutrition (underweight) has been achieved ahead of the plan, child malnutrition remains high in the Northern midlands and mountain areas and the Central Highlands. Some indicators have achieved quite low levels, and progress has slowed in recent years. Therefore, much greater efforts will be needed to reach the targets set out for 2015.
- Investment in efforts to achieve health-related MDGs remains inadequate. Many projects and programs for implementing the MDGs rely largely on foreign aid. Over 70 percent of funds for the HIV/AIDS control programs and 97 percent of ARV drugs for HIV patients are supported by international organizations. Vietnam has recently become a lower-middle income country. Funding sources for many programs and projects are being cut. Vietnam is unlikely to achieve or sustain achievements in the implementation of health-related MDGs unless there is timely funding from the state budget or other financial sources.
- Local governments and Party organizations have not yet paid adequate attention to implementation of the health-related MDGs. Awareness and participation of the population, organizations and the whole society remain limited. The health sector has borne most of the responsibility for action to achieve health-related MDGs.
- Capacity for health service provision is limited and service coverage remains low; the district and commune level facilities are facing many difficulties due to a shortage of

health workers, deteriorating facilities, and outdated medical equipment, especially in mountainous, remote, isolated areas and areas with ethnic minorities.

- The health information system has many shortcomings, with data not always reflecting the reality in terms of child mortality, especially data on infant and perinatal mortality. Problems exist with timeliness of data and ability of information to meet requirements for policy formulation and planning.

In order to overcome the above difficulties and challenges, and generate momentum for Vietnam to successfully achieve the health-related MDGs by 2015 and sustain these achievements beyond 2015, the Government has issued Resolution No. 05/NQ-CP on promoting the implementation of health-related MDGs, including the following measures:

- Raise awareness and strengthen the leadership of the Communist Party and government at all levels for implementation of the health-related MDGs;
- Strengthen mobilization of financial resources to implement the health-related MDGs;
- Strengthen capacity for the health sector, especially for the district and commune levels and for health care facilities in mountainous and remote areas;
- Effectively implement technical solutions to achieve the health-related MDGs;
- Strengthen international cooperation;
- Strengthen inter-sectoral collaboration and the involvement of socio-political organizations and the people in the implementation of the health-related MDGs.

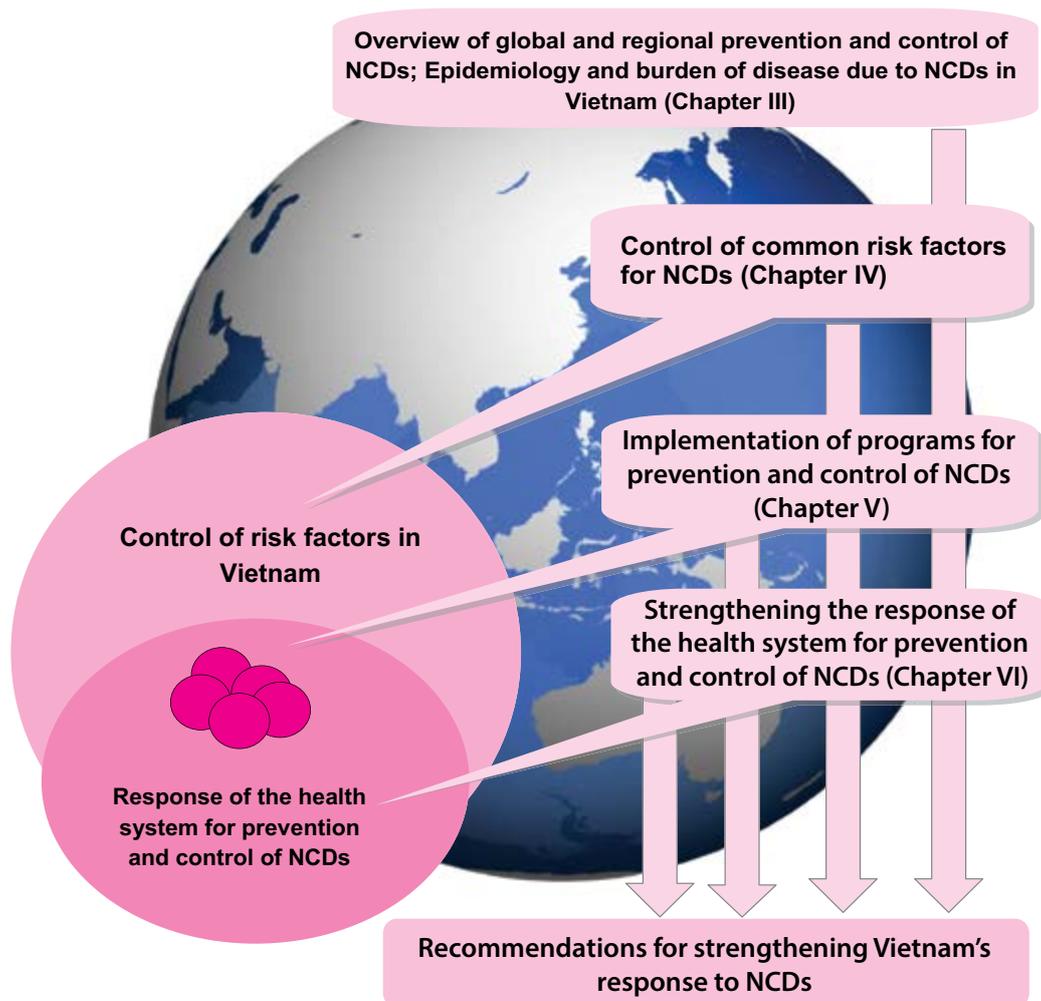
The Resolution specifies the responsibility of the Ministry of Health, relevant Ministries, provincial People's Committees, and the Vietnam Fatherland Front. There is little remaining time for implementing the MDGs, thus the Ministry of Health, as the provider of technical guidance and expertise, and localities need to invest more efforts in implementing specific measures and interventions.

**PART TWO: STRENGTHENING PREVENTION AND
CONTROL OF NON-COMMUNICABLE DISEASES**

Introduction

The in-depth analysis in the 2014 JAHR focuses on the situation of prevention and control of NCDs in order to contribute to developing policies and plans to respond to the disease group that is the cause of the dominant share of burden of disease, yet which has received inadequate attention domestically and globally. The analytic framework used in this report is presented in Figure 40.

Figure 40: Analytic framework for the in-depth topic of NCDs in the 2014 JAHR



Based on consideration of international evidence and recommendations, a review of the actual NCD situation in Vietnam and the current health system response, particularly that of NCD-related NTPs, Part Two of the JAHR 2014 report will propose recommendations to strengthen the national response to NCDs. In this part of the report there are four chapters. Chapter III analyzes the global NCD situation and international recommendations to respond to NCDs, and at the same time, it provides information on epidemiology of NCDs in Vietnam. Chapter IV discusses the Vietnamese response in relation to risk factors that must be prevented or controlled in order to reduce the burden of disease from four main NCD groups (cardiovascular disease, cancer, diabetes, and chronic respiratory diseases). Chapter V discusses the NCD projects within the overall national health target program. Chapter VI concludes with an analysis of the health system response to NCDs following the basic six building blocks of the health system.

Chapter III: Overview of global and regional NCD prevention and control and the NCD epidemiology and burden in Vietnam

1. Overview of prevention and control of NCDs globally and in the Western Pacific region

1.1. NCD concepts

NCDs in general do not spread from human to human or from animals to humans. Almost all NCDs are chronic diseases that are difficult or impossible to cure. Most NCDs are attributed to four common risk factors including tobacco smoking, alcohol use, physical inactivity and unhealthy diet. Among diseases in this group, some have been found to have infectious diseases as a contributing factor, but the disease itself is not communicable (such as some types of cancer).

There are many types of NCDs, however the United Nations and WHO tend to focus on four main disease groups, including cardiovascular disease (hypertension, stroke, heart attack, arteriosclerosis, etc.), diabetes (mainly type 2), cancer, and chronic respiratory disease (COPD and asthma) because these have high prevalence and are major causes of disability and death in adults, and they have common risk factors (factors contributing to development of the disease) [96].

In 2003, WHO introduced a definition of the concept of mental health as "...a state of well-being whereby individuals recognize their abilities, are able to cope with the normal stresses of life, work productively and fruitfully, and make a contribution to their communities" [97]. Mental disorders are medical conditions that can disrupt a person's thinking, feeling, mood, ability to relate to others and daily functioning. Mental disorders include depression, schizophrenia, bipolar disorder, obsessive-compulsive disorder (OCD), post-traumatic stress disorder (PTSD), anxiety, etc. [98]. For purposes of this report, chronic mental illness will be included as a type of NCD.

1.2. NCD burden of disease

NCDs are a global challenge and an immense burden for society and the health system. Currently this group of diseases is often misunderstood as only a problem of high-income countries. In fact, NCDs are creating a burden in low and middle income countries that may be even higher than for high-income countries [99].

Mortality due to NCDs accounts for a high share of all deaths and shows an increasing trend in most countries. According to the Global Burden of Disease Study 2010, out of 52.7 million deaths occurring in 2010, 65.5 percent were due to NCDs. This constitutes a 30 percent increase compared to 1990, driven by population growth and ageing [100]. Five of the top ten causes of death globally are NCDs, although only three of the top ten causes of premature death (measured in YLL) globally and in the Southeast Asia region are NCDs (cerebrovascular disease, ischemic heart disease and diabetes) [101]. Deaths due to NCDs occur at younger ages in developing countries than in high income countries. In 2011, according to WHO, in

high-income countries, about 26 percent of all NCD deaths were among people under age 70, while in low and middle income countries of Southeast Asia the share was 56 percent and in the Western Pacific region it was 40 percent [102]. Average age at first heart attack in South Asia is 53 years, six years younger than the average age globally [103].

The share of deaths and mortality rates due to different NCDs vary across international regions. Cardiovascular disease-related deaths account for the highest share of all NCD deaths in high income countries (39 percent), and low and middle income countries of Southeast Asia (43 percent) and the Western Pacific (50 percent). Cancer is the next most prevalent cause of death in high income countries (31 percent) and the Western Pacific (26 percent), but ranks third in Southeast Asia (15 percent). While mental and neurological disorders are the third most prevalent cause of death in high income countries, they only account for a small share (1 to 3 percent) in low and middle-income Asian countries. In contrast, chronic respiratory diseases cause only 7 percent of NCD deaths in high income countries, but 13 percent in the Western Pacific and 18 percent in Southeast Asia [102].

WHO Global Health Estimates projections indicate that globally, the proportion of deaths due to NCDs will increase 15 percent in the period 2010-2020 (to about 44 million deaths) [104]. The highest rates of increase (over 20 percent) will be in Africa, Southeast Asia, and Eastern Europe. The region with the highest number of NCD deaths by 2020 will be Southeast Asia (10.4 million cases) and the Western Pacific Region (12.3 million cases) [105]. By 2030, years of life lost due to NCDs in low-income countries will be almost eight times higher than in high income countries [106].

In addition to information on share of mortality due to NCDs, prevalence rates are also important in managing the health care system and in planning and evaluating health care service delivery. Nevertheless, currently many countries do not have reliable data on NCD prevalence. The most comprehensive prevalence data at present are for cancer, through cancer registries in the community or in hospitals.

Cancer incidence and mortality rates are projected to increase over the next few decades in all regions of the world, but to increase more rapidly in lower income countries [107]. With the forecasted changes in demographics (mainly population aging) over the next two decades, even if cancer morbidity rates remain unchanged, the number of new cases in absolute terms will rise from 12.7 million in 2008 to 17 million in 2020 to 21.4 million in 2030. Among these, two-thirds of all cancer diagnoses will occur in low and middle income countries. WHO estimates that between 2008 and 2030, the percentage increase in new cancer cases will be 82 percent in low income countries and 70 percent in lower-middle income countries, compared with 58 percent in upper-middle income countries and 40 percent in high income countries [108].

Global diabetes prevalence in 2008 was estimated at 10 percent of adults aged 25 and older. Prevalence is highest in the Mediterranean region and the Americas (11 percent) and lowest in Europe and the Western Pacific (9 percent) [107], [108]. However, the magnitude of the problem is much larger if one considers cases of pre-diabetes, who have a high risk of developing type 2 diabetes or of suffering adverse events such as renal failure or retinopathy. Prevalence of diabetes does not vary much across national income groups, with the lowest prevalence in low income nations (8 percent) and highest in upper middle income countries (10 percent) [108].

According to the Global Burden of Disease Study 2010, the burden of disease due to NCD premature death and disability has increased considerably compared to 1990 in almost all regions of the world. In many countries, NCDs account for a high share of total burden of disease measured in terms of DALYs. NCDs accounted for 54 percent of global burden of disease in 2010, compared to 35 percent for communicable, maternal, neonatal and nutritional disorders, which comes second in its contribution to burden of disease. In 2012, the burden of disease remains quite similar, with NCDs accounting for 55.1 percent, communicable, maternal, neonatal and nutritional conditions accounting for 33.7 percent and accidents accounting for 11.1 percent [109]. This contrasts sharply with 1990 when communicable disease accounted for 47 percent of burden of disease while NCDs accounted for only 43 percent [110]. In almost all nations, except those in Sub Saharan Africa, NCDs caused at least 50 percent of years lost due to disability. This figure reached as high as 80 percent in Australia, Japan and high income countries of Europe and North America [101]. According to projections to the year 2030, the proportion of total DALYs due to NCDs in low and middle-income countries will increase from 33 percent in 2002 to reach 45 percent by 2030 [111].

1.3. Risk factors

The four main NCD groups also have four main common behavior-related risk factors, including tobacco use, harmful use of alcohol, unhealthy diet and physical inactivity (Table 16). These four risk factors have been on the increase in developing countries. According to the World Bank, if we only rely on treatment to respond to NCDs, it will be extremely expensive, especially given that more than half of the NCD burden could be avoided through preventive and health promoting initiatives. Thus focusing on early investments in activities to prevent risk factors, especially among young people, is extremely important [112].

Table 16: Common risk factors for four NCDs

	Tobacco use	Harmful use of alcohol	Unhealthy diet	Physical inactivity
Heart disease, stroke				
Diabetes				
Cancer				
Chronic lung diseases				

Source: Combatting NCDs: Protecting health, promoting development (WHO, 2011)

There are many factors affecting mental health, including both positive and negative factors. Positive factors are those that help to mitigate influences detrimental to mental health and generally strengthen mental health and are known as protective factors. In addition, there are also negative factors that increase the likelihood that mental health problems will arise, which are called risk factors. Clarification of these factors helps to develop appropriate interventions to improve mental health. According to WHO, risk factors and protective factors for mental health are not only related to individual characteristics or behavior, but also include factors related to socio-economic situation and conditions and environmental conditions (Table 17).

It is important to emphasize that these factors interact with each other and can positively or negatively affect mental health of each individual [113].

Table 17: Factors influencing mental health

Level	Risk factors	Protective factors
Individual attributes	<ul style="list-style-type: none"> ▪ Low self-esteem ▪ Cognitive/emotional immaturity ▪ Difficulties in communicating ▪ Medical illness, substance abuse 	<ul style="list-style-type: none"> ▪ Self-esteem, confidence ▪ Ability to solve problems and manage stress or adversity ▪ Communication skills ▪ Physical health, fitness
Social circumstances	<ul style="list-style-type: none"> ▪ Loneliness, bereavement ▪ Neglect, family conflict ▪ Low income and poverty ▪ Difficulties or failures at school ▪ Work stress, unemployment 	<ul style="list-style-type: none"> ▪ Social support of family & friends ▪ Good parenting/family interaction ▪ Physical security and safety ▪ Economic security ▪ Scholastic achievement ▪ Satisfaction and success at work
Environmental factors	<ul style="list-style-type: none"> ▪ Poor access to basic services ▪ Injustice and discrimination ▪ Social and gender inequalities ▪ Exposure to war or disaster 	<ul style="list-style-type: none"> ▪ Equality of access to basic services ▪ Social justice, tolerance, integration ▪ Social and gender equality ▪ Physical security and safety

Source WHO, 2012 [113].

Mental illness affects and is affected by other NCDs. Mental illness can lead to or be the result of NCDs [114] or the outcome of interactions between those influences. For example, there is evidence that depression can lead to heart attacks and that heart attacks can increase the risk of depression. At the same time, risk factors for NCDs such as lack of physical exercise and alcohol use at harmful levels are also related to mental illness. Problems of the social environment, such as poverty and unemployment, are all risk factors for NCDs and mental illness [115].

General trends in risk factors

Death and disability can also be attributed to common NCD risk factors in countries at different levels of development, including behavioral and physiological risk factors. Globally, the greatest risk factor for death is high blood pressure (about 13 percent of global deaths). This is followed by tobacco use (9 percent), high blood sugar (6 percent), physical inactivity (6 percent) and overweight/obesity (5 percent) [109].

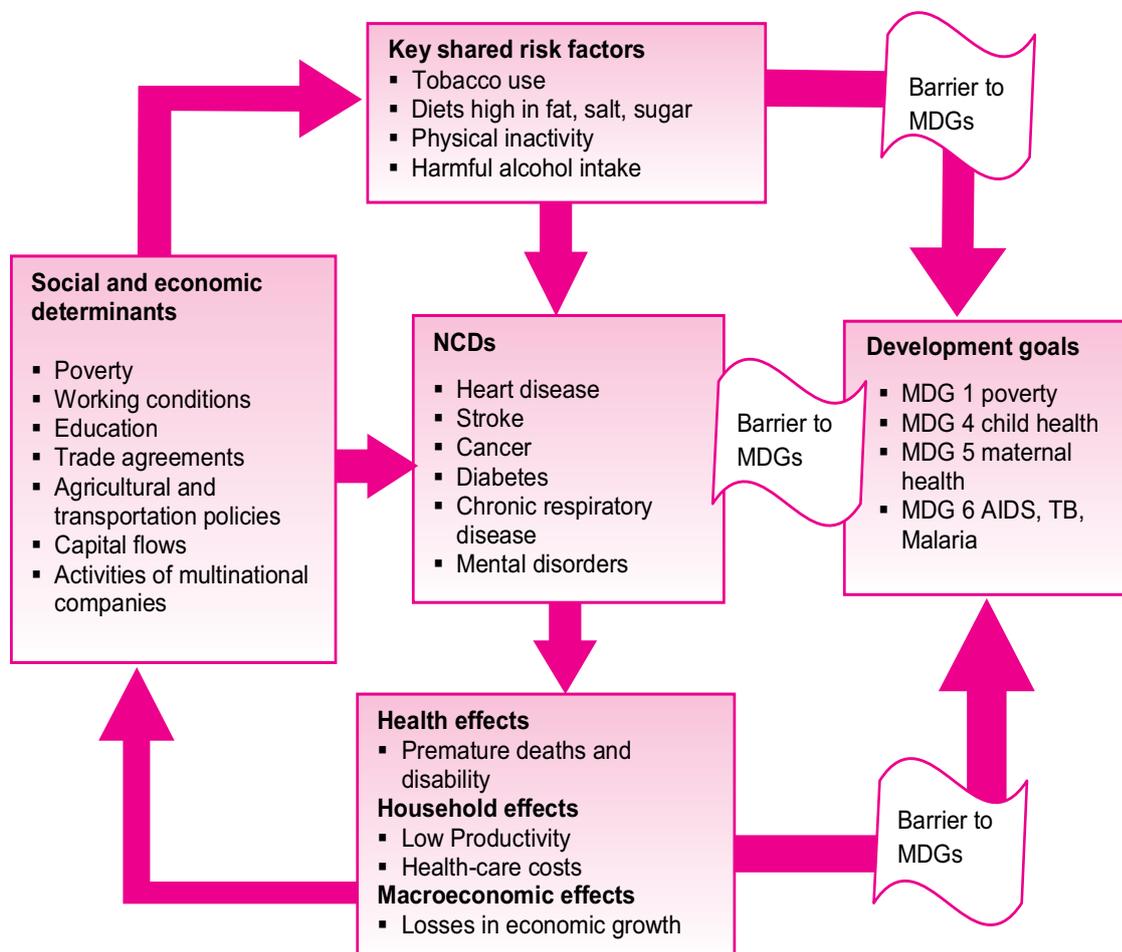
Prevalence of these risk factors varies across country groups. In middle-income countries, the most common risk factors are tobacco use among men and overweight/obesity. Prevalence of physical inactivity increases as national income rises. Prevalence of high blood pressure is relatively common in many countries at 40 percent globally and 35 percent in high income countries. The general trend has been that high blood pressure prevalence has not fallen over the past three decades, although there is some variation in different country groups. In low and lower-middle income countries, the increase in overweight/obesity rates over the past 3 decades has been faster than in upper middle income and high income countries. In lower-middle income countries, the obesity rate has doubled between 1980 and 2008 (from 3 to 6 percent), while the overweight rate has also increased rapidly (from 15 percent to 24 percent) [113].

Smoking prevalence in middle income countries is higher than in low income and high income countries. In all country groups, male smoking prevalence exceeds that of females. The highest smoking prevalence is 39 percent among men in lower-middle income countries, followed by 35 percent among men in upper-middle income countries. Among women, the highest smoking prevalence is found in high income and upper middle income countries (about 15 percent), and much lower in low income and lower-middle income countries (2 to 4 percent) [116].

1.4. Relationship between socio-economic situation and NCDs

Socio-economic conditions can have direct or indirect (through mediating factors) effects on increasing or decreasing the risk of NCDs and mental illness. NCDs, mental illness, their risk factors and their health and economic effects hinder achievement of the MDGs and at the same time can affect socio-economic development as presented in Figure 41.

Figure 41: Relationship between poverty, NCDs and development goals



Source: Beaglehole R, Bonita R, Horton R, et al. "Priority actions for the non-communicable disease crisis" in The Lancet, April 6, 2011 [117].

NCDs are not just a health problem, but a problem of development in all countries. It is for this reason that the General Assembly of the United Nations decided to discuss NCDs in reviewing MDGs in 2010. NCDs threaten progress in achieving development goals, especially MDGs 4, 5, 6 and 8 (Table 18) [100].

Table 18: Effects of NCDs on achievement of MDGs

MDGs	Relationship with NCDs
1. Eradicate extreme poverty and hunger	<ul style="list-style-type: none"> ■ Out-of-pocket medical costs and inability to work due to NCDs exacerbate poverty. ■ Household spending on NCD risk behaviors, such as tobacco and alcohol, also reduces money for food and shelter.
2. Achieve universal primary education	<ul style="list-style-type: none"> ■ Burden of NCDs can be one reason poor households are unable to send children to school.
3. Promote gender equality and empower women	<ul style="list-style-type: none"> ■ Women are more likely to sacrifice work or education to care for a sick family member. ■ Women bear the brunt of second-hand smoking and have difficulty negotiating smoke-free spaces for themselves and their children ■ Women are predisposed to certain NCDs, such as breast, ovarian and cervical cancers.
4. Reduce child mortality 5. Improve maternal health	<ul style="list-style-type: none"> ■ Half of annual tobacco-related deaths from second-hand smoke are among women, and a quarter are among children under five years old. Pregnant women and their unborn children are at risk from second-hand smoke. ■ Overweight and obesity among women increases the risk of gestational diabetes, which is a risk to the health of both mother and child during pregnancy and birth. The child may be at greater risk for Type 2 diabetes and cardiovascular disease in adult life.
6. Combat HIV/AIDS, malaria and other diseases	<ul style="list-style-type: none"> ■ Diabetes increases the risk of TB because it affects the body's ability to fight infection. ■ Antiretroviral therapy for HIV can increase the risk of cardiovascular disease by changing cholesterol levels and metabolism ■ One-fifth of TB deaths are related to smoking, and smoking also causes further illness in people living with HIV, including bacterial pneumonia and AIDS-related dementia.
7. Ensure environmental sustainability	<ul style="list-style-type: none"> ■ Pesticide use and deforestation caused by tobacco farming are detrimental to the environment.
8. Strengthen global partnerships for development	<ul style="list-style-type: none"> ■ The global political agenda recognizes the scope and magnitude of the NCD challenge as well as the need for a multi-sectoral response. ■ Multiple stakeholders, including governments, civil society, the private sector and charitable organizations are ready to take action to prevent and control NCDs. ■ Combating the NCD epidemic requires access to affordable and essential medicines, especially in developing countries.

Source UNDP, "Addressing the Social Determinants of Non-communicable Diseases", 2013 [99].

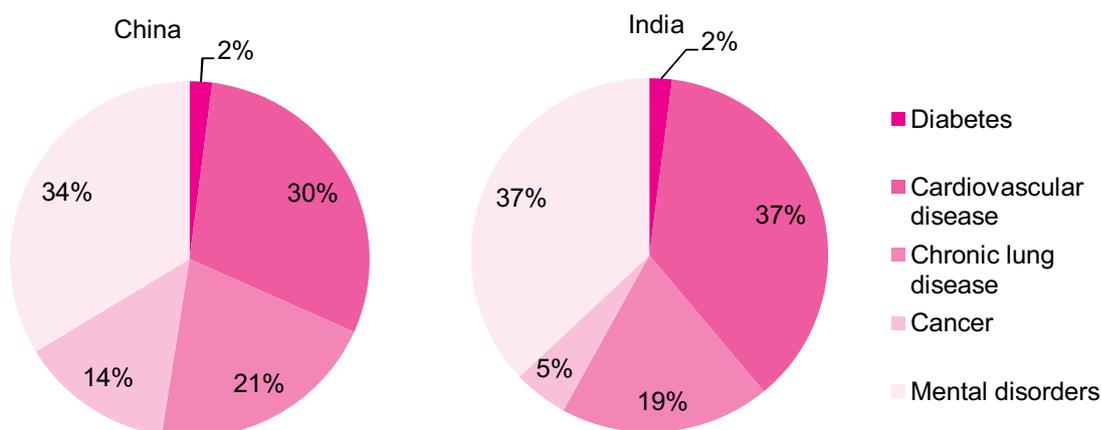
Financial burden

Expenditures on NCDs are very high and continue to rise in low and middle-income countries, creating a heavy burden on the macro-economy. Just one important risk factor for NCDs, tobacco smoking, takes the life of 6 million people each year, and costs 1 to 2 percent of GDP annually [118]. According to projections over the next 20 years, the four main NCDs (cardiovascular disease, cancer, diabetes and chronic respiratory disease) and mental illness will cost the global economy an amount equivalent to 47 trillion USD. For low and middle income countries, the economic cost of these 4 main NCDs is estimated to amount to 7 trillion USD over the period 2011-2025 [99]. The main four NCDs and mental illness are expected to cost 21

trillion USD over the next two decades [119]. A World Bank study in Egypt in 2011 indicated that chronic illness has reduced labor supply by one fifth. The consequence is a reduction in GDP of about 12 percent compared to the potential that this country could have achieved [120].

NCDs also create a major burden on the health system, accounting for 75 percent of global health care expenditures, with further increases expected [121]. In 2011, diabetes alone accounted for 465 billion USD or 11 percent of total global health care costs. By 2030, it is estimated that this number will reach 595 billion USD [122]. Estimates of the costs of NCDs to health systems in low and middle income countries are scarce, mainly due to limitations of the NCD monitoring systems. In 2007, in Thailand’s public sector, the four main NCDs and mental illness accounted for 21 percent of total inpatient treatment costs [123]. A recent Harvard university study estimated the economic effects (in terms of lost output) attributed to cardiovascular disease, cancer, chronic respiratory disease, diabetes and mental illness in China and India during the period 2012-2030. Results indicate that lost output from these five diseases in China amounted to 27.8 billion USD and in India 6.2 billion USD (in 2010 USD). For both countries, the highest economic cost was related to cardiovascular disease, followed by mental illness and chronic respiratory disease (Figure 42) [124]. It is estimated that the costs of NCDs in low income countries will continue to rise rapidly and in some cases exceed that of high income countries [119].

Figure 42: Contribution of each disease to lost output from five NCDs in China and India, 2012-2030 projections



Source: Bloom D, Cafiero E, Jané-Llopis E et al: The Global Economic Burden of Non-communicable Diseases. World Economic Forum (WEF) and Harvard School of Public Health (HSPH); 2011.

For all countries, the price to be paid for inaction will be much greater than the cost of action on prevention and control of NCDs following recommendations in the WHO Action Plan. There are many interventions for prevention and control of NCDs that can contribute to increasing healthy years of life with the cost of implementation below per capita GDP, making it affordable to all countries. The costs of implementing a package of cost-effective interventions including population-level and individual-level interventions as a share of current total health expenditure, is estimated at 2 percent in lower middle income countries and below 1 percent in high income and upper middle income countries. If actions to prevent and control NCDs are not implemented, there is a risk of productivity decline and rapid escalation of medical care spending. Currently it is estimated that total cost of dealing with the four main NCDs and mental illness reaches about 47 trillion USD globally [125].

1.5. Overview of global and regional policies on NCDs

To respond to the growing consequences of NCDs, globally, international organizations (like the United Nations and WHO) have issued many policy documents on NCD prevention and control, which are summarized in Figure 43 below. The emphasis on the importance of controlling risk factors and promoting healthy lifestyles is noteworthy.

Figure 43: Global policies on NCDs from 2000 to the present



The WHO office of the Western Pacific region has developed several important strategic documents related to NCDs and mental illness adapted from the global strategies and plans and based on the achievements and lessons drawn from experience of countries in the region. In 2000, a resolution proposed that countries in the region develop strategies and action plans for the prevention and control of NCDs. In 2006 a new resolution continued to promote national action and WHO technical support. In 2008, member countries approved the Western Pacific Regional Action Plan for NCDs 2008-2013. In 2011 a resolution was passed aimed at expanding and strengthening collaboration between countries on NCDs. In 2013, member countries of the region approved the Western Pacific Regional Action Plan for the Prevention and Control of NCDs (2014-2020). In 2013, ASEAN issued the Bandar Seri Begawan Declaration on NCDs in ASEAN, endorsing the actions of the WHO on prevention and control of NCDs. Regarding mental health, the Western Pacific Region has had a Regional Strategy for Mental Health since 2002, 11 years before WHO issued the first Mental Health Action Plan.

The vision of the Global Action Plan for the Prevention and Control of NCDs in 2013 is “a world free of the avoidable burden of non-communicable disease”. In the Western Pacific region,

the vision is that “governments and societies sustain their political and financial commitments to prevent and control non-communicable diseases (NCDs) so that these diseases are no longer a barrier to socioeconomic development”. Regarding mental health, the WHO Mental Health Action Plan lays out a vision of “a world in which mental health is valued, promoted and protected, mental disorders are prevented and persons affected by these disorders are able to exercise the full range of human rights and to access high quality culturally-appropriate health and social care in a timely way to promote recovery, in order to attain the highest possible level of health and participate fully in society and at work, free from stigmatization and discrimination.”

The principles for implementing the global and the Western Pacific action plans for NCDs are quite similar, and also include most principles in common with the Mental Health Action Plan (Table 19). However, there are some noticeable differences - the Western Pacific Regional Action Plan for NCDs does not yet mention issues of conflict of interest, despite international evidence that indicates that the tobacco, alcohol and food industries challenge policies that are beneficial to public health [126].

Table 19: Principles for implementation action plans for prevention and control of NCDs and mental illness

NCDs		Mental illness
Global (2013-2030)	Western Pacific Region (2014-2020)	Global (2013-2020)
National action and international cooperation and solidarity	Leadership and coordination	
Human rights approach	Respect for human rights	Respect for human rights
Empowerment of people and communities	Empowerment of people	Empowerment of persons with mental disorders and psychosocial disabilities
Evidence-based strategies	Evidence-based practice	Evidence-based practice
Life-course approach	Life-course approach	Life-course approach
Multi-sectoral action	Multi-sectoral approach	Multi-sectoral approach
Universal health coverage; Equity-based approach	Universal health coverage and equity	Universal health coverage
Management of real, perceived or potential conflicts of interest		

Source: Global and Western Pacific Regional Action Plans for NCDs; WHO Mental Health Action Plan.

Adjustments in objectives for prevention and control of NCDs over time reveal lessons learned from the previous period’s response to NCDs. In the period 2008-2013 the Global Action Plan for Prevention and Control of NCDs prioritized establishment and strengthening of national programs and policies on prevention and control of NCDs, but in the later period greater emphasis was placed on strengthening the health system to prevent and control NCDs. In the earlier period, more emphasis was placed on integrating policies on NCD prevention and control into policies of other government agencies, while in the newer action plan the emphasis is greater on strengthening national capacity, leadership, governance, multi-sectoral action and partnerships to increase the speed of national response to control NCDs (Table 20). The objectives of the Western Pacific Regional Action Plan for NCDs to the year 2020 are the

same as those in the Global Action Plan. The objectives in the global Mental Health Action Plan have many similarities with those in the NCD action plans. There is not yet an updated regional action plan on mental health that is aligned with the 2013 Global Action Plan.

Table 20: Comparison of objectives for the prevention and control of NCDs for the period 2008-2013 and 2013-2020, and the objectives for mental health 2013-2020

NCDs		Mental health
2008-2013	2013-2020	2013-2020
Raise the priority accorded to NCDs in development work at global and national levels, and to integrate prevention and control of NCDs into policies across all government departments. Promote partnerships for the prevention and control of NCDs.	Raise priority accorded to the prevention and control of NCDs in global, regional and national agendas and internationally agreed development goals, through strengthened international cooperation and advocacy.	Strengthen effective leadership and governance for mental health.
Establish and strengthen national policies and plans for the prevention and control of NCDs.	Strengthen national capacity, leadership, governance, multi-sectoral action and partnerships to accelerate country response for the prevention and control of NCDs. Strengthen and orient health systems to address the prevention and control of NCDs and the underlying social determinants through people-centered primary health care and universal health coverage.	Provide comprehensive, integrated and responsive mental health and social care services in community-based settings.
Promote interventions to reduce the main shared modifiable risk factors for NCDs: tobacco use, unhealthy diets, physical inactivity and harmful use of alcohol.	Reduce modifiable risk factors for NCDs and underlying social determinants through creation of health-promoting environments.	Implement strategies for promotion and prevention in mental health.
Promote research for the prevention and control of NCDs	Promote and support national capacity for high-quality research and development for NCD prevention and control.	Strengthen information systems, evidence and research for mental health.
Monitor NCDs and their determinants and evaluate progress at the national, regional and global levels.	Monitor the trends and determinants of NCDs and evaluate progress in their prevention and control.	

Global and regional strategic documents serve as guidelines. Each nation must consider their priorities and national context to develop national strategic action plans. By 2013, 31 out of 35 countries in the Western Pacific Region had national policies, strategies or action plans on NCDs and risk factors. Nevertheless, the national responses are very different. For example, in Hong Kong, there is a strategy for the prevention and control of NCDs, but no

large and specific programs for specific NCDs. In Malaysia there are specific programs for prevention and control of diabetes, cardiovascular disease and cancer, alcohol abuse, tobacco control, and environmental and occupational health. In Thailand, advocacy, monitoring, control and prevention of NCDs focus mainly on diabetes and hypertension and tobacco and alcohol risk factors [127].

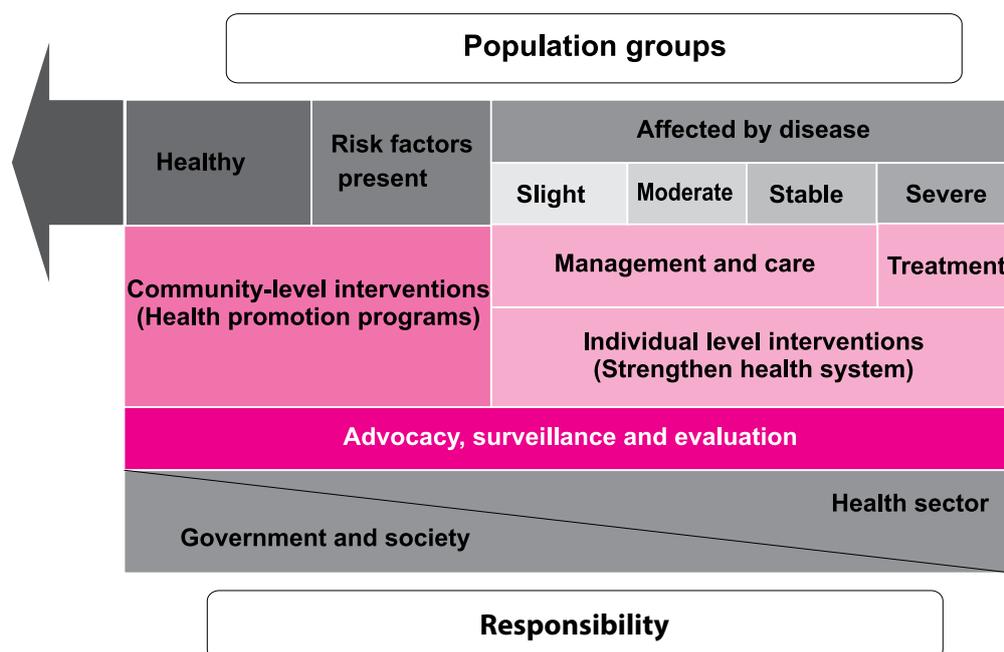
Emphasis on primary health care and creating a supporting environment for NCD prevention and control is apparent in various countries in different forms. The national NCD plan in China for the period 2012-2015 includes objectives of “developing a supporting social environment for prevention and control of NCDs”. In Thailand, the response includes strengthening capacity of the health system at the district level and a national strategic plan for healthy lifestyles aimed at increasing capacity of the community to control threats of lifestyle-related diseases. In Singapore, there has been a shift from acute treatment of symptoms towards a model of long-term universal health care emphasizing primary health care and creation of a supporting environment to strengthen health. In South Korea, the Centers for Disease Control and Prevention has developed “annual guidance for NCD management projects to update their national guidelines on prevention and control of NCDs in the community” [128].

In addition, various countries have created their own innovations aimed at resolving their specific national problems. For example, the national strategy in Japan is tightly linked with the strong aging taking place in this country, including long-term care insurance and measures aimed at strengthening physical exercise and mental health among the elderly. In China, local authorities are collaborating with other agencies of the government to guide “healthy cities” policies. In recent years these initiatives have made considerable progress and are expanding from large to smaller cities [127].

However, a recent evidence review on NCDs and the health system in the Asia-Pacific region indicated that the response of the health systems and evidence for developing programs and policies remain weak. Comprehensive approaches to develop health system responses in the region are still not in place, and interventions that have been implemented are not thoroughly evaluated. The review also revealed gaps in interventions designed to respond to the growing NCD situation in the region. This will require high quality, systematic research on the implementation of programs and integrated services for NCDs, rather than orientation towards each individual disease [129].

Figure 44 shows the relationship between various population groups, preventive and curative actions and the responsible parties. One can categorize the population into people with NCDs and people without. Among those who are not suffering from NCDs, there are those with and without risk factors present. Among the population that has NCDs, they can range from very mild to severe. For the group that is not yet sick, there is a need to focus on prevention and health promotion through community-based interventions. Once a person has an NCD, the health system must respond to individual patient need for disease management, care and treatment. Advocacy, monitoring and evaluation play important roles in relation to control of risk factors, epidemiological surveillance and monitoring and evaluating the impact of interventions for different population groups. As we move from the population without NCDs to those who have NCDs (from mild to severe), the responsibility of the health sector increases. In contrast, the responsibility of government and society is very high among the population that does not have NCDs, with a focus on health promotion and disease prevention.

Figure 44: Western Pacific region intervention framework based on WHO recommendations



Source: Based on WHO, Western Pacific Regional Action Plan for Non-communicable Diseases, 2009 [130].

1.6. NCD prevention and control measures

In order to achieve the objectives presented in Table 20 above, WHO recommends that member countries choose cost-effective policies and interventions in order to help each country implement appropriate policies based on their specific context. One can classify these measures into several groups: (i) raising priority and strengthening capacity for prevention and control of NCDs; (ii) monitoring and research; (iii) control of modifiable risk factors; and (iv) health system strengthening to respond to NCDs and improve mental health.

1.6.1. Raising the priority and strengthening capacity for prevention and control of NCDs

The Global Action Plan for the Prevention and Control of NCDs proposes two objectives that require the active participation not only of the health sector, but of the whole of government in the leadership of the national response. First is to increase priority placed on NCD prevention and control. Second is to promote rapid response of nations in the prevention and control of NCDs through strengthening national capacity, leadership, administration, multi-sectoral action and partnerships.

To increase the priority placed on NCDs, WHO recommends three groups of actions: (i) generating evidence and disseminating information about effectiveness of policies to intervene on linkages between NCDs and sustainable development; (ii) promoting universal health coverage and integration of prevention and control of NCDs as a key element of universal health coverage; and (iii) establishing multi-sectoral partnerships to promote cooperation for NCD prevention and control among government agencies, civil society organizations and the private sector at all levels. The Western Pacific Regional Action Plan places greater emphasis on paying attention to vulnerable groups and proposes putting all nine voluntary targets from the Global Action Plan into national targets for NCD prevention and control.

To strengthen national capacity, WHO proposes several policy options. First, is to integrate NCDs into the health sector planning process and socio-economic development plans. At the same time, national plans for NCD prevention and control with accompanying budget proposals for implementation should be developed based on needs assessment and impact evaluation of existing interventions. A second policy option is to mobilize stable sources of funds and ensure effective use of funds by combining this with increased accountability through monitoring and impact evaluation. Third is to strengthen national NCD programs combined with strengthening institutional and human resource capacity to bring into full play cooperation between partners in implementing NCD prevention and control activities and mobilizing the community and the people to respond appropriately to the risks of NCDs. The Western Pacific Regional Action Plan emphasizes development of multi-sectoral plans, collaboration mechanisms and ensuring stable allocation of resources.

For mental health, the first goal also calls for strengthening effective leadership and governance. The first set of recommendations calls for developing, strengthening and updating policies related to mental health in relevant sectors, including mechanisms for monitoring human rights protection of people with mental illness and implementation of legislation. Second is planning based on measured need, and appropriate with the resources needed to implement already approved plans and actions. Third is to motivate and engage stakeholders, including people with mental disorders, as well as their caregivers and families, in the work of developing and implementing policies on mental health through a formal mechanism. The last option is to ensure that people with mental disorders or psycho-social disabilities are given a formal role and authority in the process of designing, planning and implementing policies, laws and services related to mental health.

Compared to potential impact (both breadth and depth) on community health, the response of almost all nations has not yet been effectively coordinated, adequate financial investments have not been made or no evidence is available to make an assessment. In particular, inadequate information has been gathered on the burden of NCDs among the poor during rapid urbanization, or if information has been gathered, it has not been incorporated into the policies [129].

In 2012, the Western Pacific Regional Office organized a workshop to support regional countries to develop national multi-sectoral plans for NCD prevention and control [131]. In China, the national plan on NCDs (2012-2015), which tightly integrates 15 sectors/ministries in NCD work, was already issued in 2012 [127].

1.6.2. Surveillance and research

One of the main objectives of the Global Action Plan for the prevention and control of NCDs is to monitor and undertake surveillance of the NCD situation and risk factors, as well as actions aimed at preventing and controlling NCDs and risk factors. In 2011 at the High level Meeting of the United Nations General Assembly on the Prevention and Control of NCDs [132], representatives of Governments who attended the meeting committed to developing national targets and monitoring indicators based on WHO guidance, and increasing priority for surveillance. In May 2013, the World Health Assembly passed a Global monitoring framework for NCDs including 25 indicators and nine voluntary targets. Indicators were selected based on an assessment of effectiveness of interventions. Targets and indicators are presented in Table 21 below. Targets are considered voluntary and many indicators allow flexibility in their definition depending on the conditions of each country. Every five years, in 2016, 2021 and 2026, the

member countries will report on progress towards implementing the nine targets related to NCDs following this monitoring framework.

Table 21: Global NCD targets and indicators

Element	Voluntary target	Indicator
Mortality and morbidity		
	(1) A 25% relative reduction in the overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases	(1) Unconditional probability of dying between ages of 30 and 70 from cardiovascular diseases, cancer, diabetes or chronic respiratory diseases.
	Supplementary indicators	(2) Cancer incidence, by type of cancer, per 100 000 population
Risk factors		
	(2) At least 10% relative reduction in the harmful use of alcohol, as appropriate, within the national context.	(3) Total alcohol consumption per capita (aged 15+ years old) within a calendar year (4) Age-standardized prevalence of heavy episodic drinking among adolescents and adults. (5) Alcohol-related morbidity and mortality among adolescents and adults/
	(3) A 10% relative reduction in prevalence of insufficient physical activity	(6) Prevalence of insufficiently physically active adolescents (< 60 minutes of moderate to vigorous intensity activity daily). (7) Age-standardized prevalence of insufficiently physically active persons aged 18+ years (< 150 minutes of moderate-intensity activity per week).
	(4) A 30% relative reduction in mean population intake of salt/sodium	(8) Age-standardized mean population intake of salt (NaCl) per day in grams in persons aged 18+ years
	(5) A 30% relative reduction in prevalence of current tobacco use in persons aged 15+ years	(9) Prevalence of current tobacco use among adolescents (10) Age-standardized prevalence of current tobacco use among persons aged 18+ years
	(6) A 25% relative reduction in the prevalence of raised blood pressure	(11) Age-standardized prevalence of raised blood pressure among persons aged 18+ years
	(7) Halt the rise in diabetes and obesity	(12) Age-standardized prevalence of raised blood glucose/diabetes among persons aged 18+ years. (13) Prevalence of overweight and obesity in adolescents (14) Age-standardized prevalence of overweight and obesity in persons aged 18+ years.
	Supplementary indicators	(15) Age-standardized proportion of total energy intake from saturated fatty acids in persons aged 18+ years (16) Age-standardized prevalence of persons (aged 18+) consuming less than 5 total servings (400g) of fruit and vegetables per day. (17) Age-standardized prevalence of raised total cholesterol in persons aged 18+ years.

Element	Voluntary target	Indicator
Health system		
	(8) At least 50% of eligible people receive drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes.	(18) Proportion of eligible persons (defined as aged 40+ years with a 10-year cardiovascular risk $\geq 30\%$) receiving drug therapy and counselling to prevent heart attacks and strokes.
	(9) An 80% availability of the affordable basic technologies and essential medicines, including generics, required to treat major NCDs in both public and private facilities.	(19) Availability and affordability of quality, safe and efficacious essential NCD medicines, including generics, and basic technologies in both public and private facilities.
	Supplementary indicators	(20) Access to palliative care assessed by morphine-equivalent consumption of strong opioid analgesics per death from cancer (21) Adoption of national policies that limit saturated fatty acids and virtually eliminate partially hydrogenated vegetable oils. (22) Availability, if appropriate and cost-effective, of vaccines against human papillomavirus (HPV), according to national programs and policies. (23) Policies to reduce the impact on children of marketing of foods and non-alcoholic beverages high in saturated fats, trans fatty acids, free sugars, or salt. (24) Vaccination coverage against hepatitis B virus monitored by number of 3 rd doses of Hep-B vaccine administered to infants. (25) Proportion of women (aged 30-49) screened for cervical cancer at least once.

Source: NCD Global Monitoring Framework.

Regarding mental health, the WHO Mental Health Action Plan proposed several monitoring indicators, including several targets and indicators at the macro-level, but does not yet propose concrete detailed indicators such as for NCDs (Table 22).

Table 22: Objectives and monitoring indicators for mental health actions

Target (by 2020)	Indicator
Objective 1: To strengthen effective leadership and governance for mental health	
1.1. 80% of countries will have developed or updated their policy/plan for mental health in line with international and regional human rights instruments.	Existence of a national policy and/or plan for mental health that is in line with international human rights instruments.
1.2. 50% of countries will have developed or updated their law for mental health in line with international and regional human rights instruments.	Existence of a national law covering mental health that is in line with international human rights instruments.

Target (by 2020)	Indicator
Objective 2: To provide comprehensive, integrated and responsive mental health and social care services in community-based settings	
2. Service coverage for severe mental disorders will have increased by 20%.	Proportion of persons with a severe mental disorder (psychosis, bipolar affective disorder, moderate-severe depression) who are using services (%).
Objective 3: To implement strategies for promotion and prevention in mental health	
3.1. 80% of countries will have at least 2 functioning national, multi-sectoral mental health promotion and prevention programs.	Functioning programs of multi-sectoral mental health promotion and prevention in existence.
3.2. The rate of suicide in countries will be reduced by 10%.	Number of suicide deaths per year per 100 000 population.
Objective 4: To strengthen information systems, evidence and research for mental health	
4. 80% of countries will be routinely collecting and reporting at least a core set of mental health indicators every 2 years through their national health and social information systems.	Core set of identified and agreed mental health indicators routinely collected and reported every 2 years.

Source: WHO, Mental Health Action Plan 2013-2020

Relying on the above monitoring framework, WHO recommends that each country develop its own national targets, strengthen human resources and capacity for surveillance, monitoring and evaluation for effective implementation. In the long-run, countries must integrate monitoring of NCDs into the national health management information system through establishing and strengthening comprehensively the monitoring of cause of death, cancer registries, periodic surveys of risk factors and monitoring national response. In relation to mental health, recommendations also include integrating mental health indicators into the health management information system and using data for reporting on progress and to provide evidence for improving services.

Research on prevention and control of NCDs was included as an important objective of the global and regional action plans on NCDs, because priorities for action should be based on evidence about prevalence, risk factors, efficiency, effectiveness and acceptability of various interventions in each country. At the same time, performance of each intervention in various countries can provide important lessons to share with other countries. The ability to research effectively depends substantially on ability to obtain data and information from the health information system. WHO recommends specific activities to promote research, starting with developing and implementing a national research program on NCDs. Allocation of funds, strengthening of human resources, consolidation of regulations on research and improvement of research capacity through international cooperation and domestic activities are all measures that can support the national NCD research agenda. Recommendations for mental health are similar to those for NCDs, but with greater emphasis on operational research directly linked to developing and implementing mental health services and protection of human rights of people with mental illness, especially research that involves the participation of stakeholders, specifically the mentally ill.

Several countries in the region have invested substantially in strengthening monitoring and evaluation. In China a massive research project (the Biobank Study) is underway to monitor

the health situation over 15 to 20 years, and aims to establish the basis of a blood-based health database, using genetic, environmental and lifestyle aspects to investigate and understand the causes, risk factors, pathogenesis, prevalence patterns and trends of major chronic diseases in China [133]. In Thailand, several projects have been set up to strengthen capacity for monitoring NCDs such as the Capacity building for behavioral risk factor surveillance system and the project for improving quality of cancer registration for population-based cancer registries to strengthen and utilize data to help formulate evidence-based public health policy. In Singapore investments are also being made for active evaluation of performance in achieving NCD goals.

1.6.3. Control of modifiable risk factors

In order to control risk factors, WHO proposed and the World Health Assembly approved the Framework Convention on Tobacco Control, the Global strategy on diet physical activity and health, the Global strategy to reduce the harmful use of alcohol, a set of recommendations on the marketing of foods and non-alcoholic beverages to children, and the Moscow Declaration on Healthy Lifestyles and NCDs. These strategic documents propose many detailed concrete measures to control behavioral risk factors as well as relevant socio-economic risk factors of NCDs and the WHO recommends implementation of the full contents of these documents.

However, under conditions of scarce resources, it is necessary to prioritize the choice of actions for earlier implementation, while postponing implementation of others. In the Western Pacific region, WHO has proposed interventions it considers extremely effective in relation to costs for prevention of NCD risk factors (Table 23).

Table 23: Highly cost-effective interventions for control of behavioral and lifestyle risk factors

Risk factor	Effective interventions
Tobacco use	<ul style="list-style-type: none"> ■ Reduce affordability of tobacco products by increasing tobacco excise taxes. ■ Create by law completely smoke-free environments in all indoor workplaces, public places and public transport. ■ Warn people of the dangers of tobacco and tobacco smoke through effective health warnings and mass media campaigns. ■ Ban all forms of tobacco advertising, promotion and sponsorship.
Harmful use of alcohol	<ul style="list-style-type: none"> ■ Regulate commercial and public availability of alcohol ■ Restrict or ban alcohol advertising and promotions. ■ Use pricing policies, such as excise tax increases, on alcoholic beverages
Unhealthy diet	<ul style="list-style-type: none"> ■ Reduce salt intake ■ Replace trans fats with unsaturated fats ■ Implement public awareness programs on diet.
Physical inactivity	<ul style="list-style-type: none"> ■ Implement public awareness activities to promote the benefits of a physically active lifestyle

Source: Western Pacific Regional Action Plan for the Prevention and Control of NCDs (2014-2020)

The Global Action Plan acknowledges that effectiveness of multi-sectoral actions requires assigning concrete responsibility to each agency/partner, protecting the public interest and avoiding negative effects of conflicts of interest on policy content and implementation. The United Nations political declaration on NCDs mentions clearly the importance of reducing

exposure to risk factors and strengthening capacity of the people to choose a healthy lifestyle throughout the life course, and the important role of regulations in controlling related sectors and intervening to promote health.

Many important mental health risk factors relate to socio-economic conditions of the family, effects of child raising, social conditions and the workplace, mostly lying outside the scope of health sector actions. However, some activities are within the responsibility of the health sector. First is advocacy to change policies related to environment, child raising, working conditions, schooling, prevention and control of domestic violence to prevent negative effects on mental health. Second, is control of the harmful use of alcohol, which is similar to the efforts needed to prevent other NCDs. Third, is to strengthen the ability of people with NCDs to access counselling in the process of seeking medical treatment to prevent their medical condition from causing mental disorders such as depression or anxiety.

Recommendations on promoting mental health and preventing mental disorders do not yet include proposals of specific cost-effective interventions such as are recommended in relation to NCDs, but it is proposed that each country should guide and coordinate multi-sectoral strategies with universal interventions aimed at specific target groups to promote mental health; prevent mental disorders; reduce stigma and discrimination and human rights violations; and respond to special needs of vulnerable groups throughout the life course. These should be integrated into national strategies on mental health and health promotion. At the same time each country must develop and implement universal strategies to prevent suicide, paying special attention to high risk groups.

A majority of policies and strategies of different countries in Asia focus on avoidable risk factors. However, there are major differences between countries depending on their socio-economic conditions, organization and epidemiology [127].

1.6.4. Health system strengthening

WHO has developed a menu of policy choices related to health system strengthening and orientation of the health system to respond to NCDs through primary health care and universal health coverage. The Global Action Plan includes five groups of recommendations including leadership, financing, service quality, human resources and access of the people to services [125]. The Western Pacific Regional Action Plan proposes eight recommendations in this area. Below is a summary of the global and regional recommendations.

In relation to strengthening **leadership** (effective governance and accountability) there are four proposed policy choices. First is assigning responsibility for ensuring availability of NCD prevention and control services within the health system. Second is the participation of the community in design, implementation, monitoring and evaluation of NCD prevention and control programs to ensure their effectiveness and equitability. Third is the integration of NCD prevention and control into broad health sector reforms. Fourth is an orientation of the health system towards responding to socio-economic determinants of health through evidence-informed interventions that are supported by universal health coverage. In the Western Pacific Region, two more specific recommendations have been made. First is to emphasize the importance of NCD prevention and control in universal health care. Second is to strengthen the role of primary health care services and secondary care along with the referral system in the effort to prevent, control and manage NCDs.

On **health financing** for NCDs there are three main policy choices. First is the need to shift from a health system based on user fees paid at point of service towards a pre-payment system that pools risk and includes coverage of NCDs. Second is to expand universal health coverage, prioritizing payment for cost-effective interventions for NCDs and co-morbidities and developing initiatives at the local area to protect people from financial risk due to NCDs. Western Pacific Region recommendations include the first recommendation above but an additional recommendation to create a health financing mechanism that covers prevention, screening, management and control of NCDs.

On **human resources** development, the first recommendation is to identify necessary competencies and invest in strengthening knowledge, skills and motivation of existing health workers and planning future training based on forecasts of need. Second is to integrate the contents of prevention and control of NCDs into the human resources training program for health workers and social workers, with an emphasis on primary health care. Third is to ensure remuneration and working conditions are adequate to mobilize health workers to serve disadvantaged areas. Fourth is to strengthen post-graduate NCD specialist training for health workers, pharmacists and allied health workers who provide care for NCD patients. Fifth is to optimize the scope of work for nurses and allied health professionals to eliminate barriers and strengthen their contribution to NCD prevention and control. Sixth is to strengthen capacity for planning, implementation, surveillance, evaluation of NCD prevention and control services. In the Western Pacific Region, recommendations emphasize strengthening capacity of health workers and institutions to implement prevention and control of NCDs through patient-centered models of service provision, multi-skilled teams, quality assurance methods and continuing medical education.

Regarding improving efficiency, equity, coverage and quality of NCD and risk factor prevention and control services, seven policy options are proposed. First is to strengthen and organize services close to the people through the primary health care network integrated with higher level referral facilities, including also specialized treatment, rehabilitation, and palliative care. Second is to create conditions for equitable provision of services for NCD patients at all health facilities (both public and private). Third is to strengthen efficiency of service provision and propose national targets that are in line with global targets for expanding coverage of cost-effective interventions with strong impact on NCDs, linkages between prevention and control of NCDs with other services, especially mental health care (See list of highly cost-effective interventions in Table 23). Fourth is to respond to the need for long-term care for NCD patients with disabilities or co-morbidities through effective, innovative models that integrate services between facilities in the health system and the community. Fifth is to establish a quality management system, especially for primary care, including evidence-based treatment guidelines, and supporting instruments for management of NCDs and risk factors. Sixth is to mobilize and facilitate early health care seeking to detect illness and effectively manage their medical condition. Seventh is to review current health programs to find opportunities for integration with NCD care.

In order to **increase population access** to NCD prevention and control programs, including essential medicines and equipment, WHO proposes five policy options. First is to promote accessibility to comprehensive, cost-effective services that integrate prevention, treatment and management of NCDs, including drugs, diagnostic technologies and treatment, and make optimal use of TRIPS flexibilities to avoid negative effects on public health.³¹ Second

³¹ TRIPS is the Agreement on Trade Related Aspects of Intellectual Property Rights that Vietnam has committed to as part of WTO accession. TRIPS flexibilities include parallel imports and compulsory licensing.

is the proposal that each country should develop national evidence-based strategies aimed at strengthening the ability of patients to access affordable drugs (for example by including appropriate drugs into insurance formularies or implementing drug price control policies). Third is to promote procurement and use of safe, quality, efficacious and affordable drugs in order to prevent and control NCDs, including pain medicines (for palliative care), and vaccines preventing cancers related to communicable disease, through methods such as drug quality management, priority drug registration, generic substitution, mandatory use of generic names in procurement and education of both the prescriber and the patient. Fourth is to increase availability of essential drugs and technologies for management of NCDs in first stage response to natural disasters. Fifth is to support access and support for prevention and treatment, rehabilitation and payment of allowances for NCDs (considered as an occupational disease), appropriate with national laws and regulations. Within the Western Pacific Region, the first recommendation is to expand access to rehabilitation services in the community and second is to improve accessibility to palliative care, pain relief for patients with cancer and other life-threatening diseases in a system of continuous care. Third is to expand accessibility to essential interventions aimed at prevention and control of NCDs, for example locating the essential services package for NCDs recommended by WHO within a primary health care system with appropriate referrals and universal health coverage.

The WHO recommended package of essential services for NCD prevention and treatment includes nine components. First, is expansion of screening and treatment coverage, while prioritizing cost-effective interventions to deal with behavior risk factors. Second, is provision of counselling and education for patients, including topics of smoking cessation and reducing harmful use of alcohol. Third, is evaluation, management and elimination of risk factors through family and community approaches aimed at lifestyle changes. Fourth, is treatment referral for cases of people with high NCD risk or complications. Fifth is the prevention of liver cancer through hepatitis vaccination within the EPI. Sixth is prevention of cervical cancer through cost-effective screening using visual inspection with acetic acid (VIA) or Pap smear, linked with treatment of pre-cancerous lesions. Seventh is secondary prevention of rheumatic fever and rheumatic heart disease. Eighth is multi-drug treatment, including control of blood sugar for diabetics and for patients who have previously had a heart attack or stroke, or have a high risk of having such events. The final recommendation is to provide aspirin for people to use during a heart attack or to prevent recurrent heart attacks.

2. NCD epidemiology and burden of disease in Vietnam

2.1. Epidemiology of selected NCDs in Vietnam

NCDs include many different types of disease that have the common feature of not spreading from person or animals to humans. According to the Global Burden of Disease Study, in 2010 in Vietnam, NCDs accounted for 66 percent of total burden of disease measured in DALYs. In the scope of this report, we will focus on the five groups of NCDs that are currently being prioritized by the Vietnamese health system, including: cancer, cardiovascular disease, diabetes, chronic respiratory disease and mental-neurological disorders. However, in this section, several important NCDs that have received inadequate attention in Vietnam will also be discussed.

Cardiovascular disease: Cardiovascular disease is a term that indicates a group of diseases that develop not only due to pathology of the heart, blood vessels, muscle and valves, but also due to high blood pressure, pathology of the brain and peripheral blood vessels [134]. The cardiovascular disease group includes: ischemic heart disease, stroke, peripheral vascular disease, rheumatic heart disease, congenital heart disease, deep vein thrombosis and pulmonary embolism. Almost all cardiovascular disease can be prevented by reducing risk factors, such as quitting smoking, eating a heart-healthy diet, reducing obesity, increasing physical activity, controlling blood pressure and blood lipids and managing diabetes. Currently in Vietnam, the national health target program primarily intervenes to deal with high blood pressure, one of the important risk factors for cardiovascular disease. There is no national dataset on prevalence and incidence of cardiovascular disease. The proportion of the population with hypertension will be analyzed in the section on risk factors below.

Cancer: Cancer is a group of diseases related to rapid creation of abnormal cells that grow beyond their usual boundaries, and which can then invade adjoining parts of the body and spread to other organs (metastasis). Currently there are about 200 types of cancer. The number of new cancer cases in a year in Vietnam is estimated at 125 036 according to Globocan in 2012 [135] and 126 307 according to estimates based on the cancer registry in 6 provinces in 2010 [136]. By 2020 the projected number of new cancer cases per year will be 189 344. Among cancer cases, 43 percent are women and 57 percent are men. Four types of cancer are most common among men including liver, lung, stomach and colon, accounting for 66 percent of all new cancer cases in men. Among women the four most common types are breast, lung, liver and cervix, accounting for 50 percent of all new cancer cases in women [135]. The proportion of cancer patients who seek care early is quite low, in 2009 a study in five oncology hospitals indicated that overall only 28.6 percent of cancer cases sought care while the disease was in stage I or II, the proportion presenting at early stages for breast cancer were 50.5 percent, cervical cancer 46 percent, and colon cancer 32.2 percent [136]. It is important to understand that these data are based on cases that were detected and sought treatment, since cases that did not seek care were not registered.

Many types of cancer can be prevented through avoiding exposure to risk factors such as tobacco, alcohol, carcinogenic chemicals in the workplace or in food. Some types of cancers can be prevented through vaccination, such as liver cancer (through hepatitis B vaccination) and cervical cancer (through HPV vaccinations) or through treatment of disease like *H. Pylori* to prevent stomach cancer. Several types of cancer, if detected early, have good prognoses for cure.

Diabetes: According to the American Diabetes Association [137]: “Diabetes mellitus is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both. The chronic hyperglycemia of diabetes is associated with long-term damage, dysfunction, and failure of various organs, especially the eyes, kidneys, nerves, heart, and blood vessels.” Diabetes is also a risk factor for other diseases, such as hypertension and kidney disease.

Results of a diabetes survey in Vietnam indicate that prevalence of diabetes in the age group 30-69 years nationally was 2.7 percent in 2002 [138], but had doubled to 5.4 percent by 2012 [139]. The higher than expected rise in diabetes prevalence should serve as an important warning. Prevalence of pre-diabetes (impaired fasting glucose) has also risen from 7.7 percent in 2002 to 12.8 percent in 2012 [139]. Estimates for Vietnam from 2010 indicate that diabetes

prevalence in the age group 20-79 years was 2.9 percent, equivalent to about 1.65 million diabetes patients, and this is projected to increase to 3.42 million people by 2030, an increase of 88 000 diabetics each year [140].

Type 1 diabetes is related to some risk factors that are difficult to modify (genetics, immunology) and some environmental factors that can be modified. Environmental factors that have been linked to pancreatic damage and diabetes include mumps, rubella, coxsackie virus B4 and chemical toxins like nitrophenyl-urea (rat poison) and hydrogen cyanide (from spoiled cassava or cassava roots). Type 2 diabetes also has some genetic, lifestyle and physiological determinants. Factors causing risk of Type 2 diabetes include older ages, obesity (especially in the abdomen), sedentary lifestyle, groups with unusually elevated adipose tissue, elevated very low density lipoproteins and high blood pressure.

Chronic lung disease: Chronic lung diseases are chronic diseases that affect the respiratory tract and lung structure. The most common diseases in this group are COPD, asthma, respiratory allergies and occupational lung diseases. Prevalence of COPD in Vietnam is estimated at 4.2 percent, of which 7.1 percent in males and 1.9 percent in females [141]. Asthma prevalence in Vietnam is 3.9 percent; among children it is 3.3 percent and among adults 4.4 percent. Asthma is more prevalent among men than women, with the ratio of 1.63 boys with asthma for every girl with asthma among children and the ratio of men to women at 1.24 among adults. Provincial level estimates of asthma prevalence range from 1.5 percent to 6.9 percent [142]. Asthma is most prevalent in the age group 5-15 years. Determinants of chronic respiratory diseases are mainly tobacco smoking, household air pollution, outside air pollution, allergens and work environment.

Mental and neurological disorders: Mental disorders include a wide range of problems with different symptoms, but in general they include abnormalities in thinking, emotions, behavior and communication with other people. Some typical examples of mental illness include schizophrenia, depression, slow mental development and disorders related to alcohol and drug use. Neurological disorders are abnormalities in the structure, biochemistry or electrical signals in the brain, spinal cord or other nerves. Some symptoms include paralysis, weak muscles, loss of sensation, pain or seizures. Common diseases in this group include epilepsy, migraines, dementia, cerebral palsy, Parkinson's disease or neurological damage resulting from stroke or brain trauma. The National health target program includes a project on mental health in the community and among children, which mainly focuses on schizophrenia and epilepsy.

In Vietnam up till now there has only been one nationwide epidemiological survey on mental health implemented in 2000 by the Central Mental Hospital Number 1. Results indicated that the 10 most common mental disorders combined affected 14.9 percent of the population [143]. Among these disorders, the most common were alcohol abuse (5.5 percent), depression (2.8 percent) and anxiety (2.6 percent). Nearly 3 million Vietnamese people have severe mental disorders (schizophrenia, depression, bipolar disorder and other severe signs of anxiety and depression).

2.2. Burden of disease from NCDs measured in deaths and years of life lost

In Vietnam, NCDs account for a growing share of total deaths, rising from 56 percent in 1990 to 72 percent in 2010 [144]. Out of all deaths (including from communicable diseases, NCDs and injuries), 30 percent were due to cardiovascular disease, 21 percent from cancer, 6

percent from chronic respiratory diseases, 3 percent from diabetes and 2 percent from mental and neurological disorders.

About one half of all deaths occur before the age of 70 years. Determining the cause of premature death is important for developing health policies and plans. Therefore, when assessing burden of disease, one usually calculates years of life lost (YLL) due to premature mortality. (This indicator was defined in Chapter 1, section 1.2). Table 24 presents YLL by sex and disease/condition classified into those for which national health target programs are currently in place to prevent and control the disease or not. Results indicate that 56.1 percent of all YLL are due to NCDs, of which 35.1 percent are among males and 20.9 percent among females. Overall about 25.5 percent of all YLL are for NCDs that are currently covered by NTP interventions, and the remaining 30.6 percent do not yet have direct program interventions, although programs for prevention of risk factors such as prevention and control of hypertension or tobacco control and control of harmful effects of alcohol do have an effect on NCDs for which direct programs interventions do not yet exist.

Table 24: Deaths and YLL due to NCDs by sex and existence of an intervention program, 2010

	Deaths	YLLs	Percent of total YLL		
			Total	Male	Female
Total NCDs	318 425	6 760 146	56.1%	35.1%	20.9%
NCDs with intervention programs in Vietnam			25.5%	15.5%	10.0%
Cancer	91 476	2 319 533	19.2%	12.0%	7.2%
Hypertensive heart disease	6 817	105 300	0.9%	0.3%	0.5%
COPD	18 598	240 685	2.0%	1.3%	0.7%
Asthma	5 455	101 317	0.8%	0.5%	0.3%
Epilepsy	1 939	83 129	0.7%	0.4%	0.3%
Schizophrenia	292	9 543	0.1%	0.1%	0.0%
Diabetes	11 297	213 558	1.8%	0.8%	0.9%
NCDs without dedicated intervention programs			30.6%	19.7%	10.9%
Hemorrhagic stroke	80 833	1 241 050	10.3%	6.5%	3.8%
Ischemic heart disease	27 077	469 474	3.9%	2.6%	1.3%
Liver cirrhosis	14 098	399 778	3.3%	2.7%	0.6%
Chronic kidney disease	9 094	204 275	1.7%	1.0%	0.7%
Ischemic stroke	6 830	104 902	0.9%	0.5%	0.3%
Rheumatic heart disease	2 956	66 091	0.5%	0.3%	0.3%
Gastric ulcers	2 380	49 992	0.4%	0.3%	0.1%
Alcohol-related mental disorders	1 132	42 045	0.3%	0.3%	0.0%
Other NCDs	38 151	1 109 474	9.2%	5.4%	3.8%

Note: Percentages are calculated in relation to total YLL including communicable diseases and injuries in addition to NCDs .

Source: Calculated from data of the Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

2.3. Burden of NCDs (measured in DALYs)

Burden of disease is not only due to mortality, since many diseases are not generally fatal, but they create burden by causing years of life lost to disability (YLD). Disability adjusted life years (DALY) is a unit for measuring the burden of disease. This indicator is the sum of years of life lost due to premature mortality (YLL) and years of life lost to disability (YLD) for specific diseases and disease groups.

Out of total burden of disease measured in DALYS in Vietnam in 2010, 66.3 percent were due to NCDs (Table 25) [144]. It is important to note that the NCDs for which intervention programs exist covered only 19.6 percent of total burden of disease in Vietnam in 2010, the majority of NCDs contributing to disease burden do not yet have intervention programs. The ranking of diseases based on proportion of DALYs differs from the ranking when considering only burden of disease due to mortality. While cancer accounted for 19.2 percent of total YLL, when considering total years lost to disability then the burden of disease from cancer only accounts for 11 percent of the total, because many types of cancer cause death quickly, and consequently YLD is low. Conversely, some diseases do not generally lead to premature mortality, but they create a substantial burden of disease due to disability, for example depression, hearing and vision disorders and arthritis. Among the group of diseases for which no intervention programs are yet in place, some diseases cause a substantial burden of disease, such as stroke, ischemic heart disease, chronic kidney disease, liver cirrhosis, all of which are indirectly affected by intervention activities aimed at reducing risk factors like alcohol and tobacco use, diabetes (a risk factor for kidney disease, etc.) and hypertension (risk factor for heart disease and stroke). Nevertheless, there are some NCDs that do not have comprehensive intervention programs such as musculoskeletal disorders, hearing and vision disorders and various types of mental and neurological disorders.

Table 25: Burden of NCDs (in DALYs) by sex, 2010

	DALY	Percent of total DALYs		
		Total	Male	Female
Total DALYs from NCDs	14 219 115	66.3%	36.2%	30.1%
NCDs with intervention programs in Vietnam		19.6%	11.3%	8.3%
Cancer	2 357 549	11.0%	6.8%	4.2%
Hypertensive heart disease	108 666	0.5%	0.2%	0.3%
COPD	702 332	3.3%	1.8%	1.5%
Asthma	300 572	1.4%	0.7%	0.7%
Epilepsy	186 336	0.9%	0.5%	0.4%
Schizophrenia	183 354	0.9%	0.5%	0.4%
Diabetes	367 031	1.7%	0.8%	0.9%
NCDs without dedicated intervention programs		46.7%	24.9%	21.8%
Hemorrhagic stroke	1 251 750	5.8%	3.7%	2.2%
Depression	908 353	4.2%	1.5%	2.7%
Lower back pain	855 530	4.0%	2.1%	1.9%
Ischemic heart disease	533 058	2.5%	1.6%	0.9%

	DALY	Percent of total DALYs		
		Total	Male	Female
Vision and hearing disorders	503 511	2.3%	1.1%	1.2%
Liver cirrhosis	406 724	1.9%	1.5%	0.4%
Migraine	384 240	1.8%	0.6%	1.2%
Neck pain	380 054	1.8%	0.8%	1.0%
Alcohol-related mental disorders	275 078	1.3%	1.1%	0.1%
Chronic kidney disease	265 188	1.2%	0.7%	0.5%
Drug-related mental disorders	251 197	1.2%	0.8%	0.3%
Osteoarthritis	234 475	1.1%	0.4%	0.7%
Ischemic stroke	136 299	0.6%	0.4%	0.3%
Rheumatic heart disease	86 041	0.4%	0.2%	0.2%
Gastric ulcers	69 505	0.3%	0.2%	0.1%
Other NCDs	3 472 272	16.2%	8.0%	8.1%

Note: Percentages are calculated in relation to total YLL including communicable diseases and injuries in addition to NCDs.

Source: Calculated from data of the Global Burden of Disease Study 2010 (GBD 2010) Results by Cause 1990-2010 - Vietnam Country Level. Seattle, United States: Institute for Health Metrics and Evaluation (IHME), 2013.

2.4. Economic burden

In addition to the disease burden estimated in DALYs, NCDs also cause substantial burden on the economy through direct and indirect costs, affecting not only the health sector, but socio-economic development as well. First of all, direct health costs of NCDs include costs of treating NCDs, such as operating costs of medical facilities, salaries, drugs and medical consumables for treatment. There are also costs of transport to and from facilities and costs of food and accommodations for patients and family care givers. Second are the indirect costs including costs due to lost labor productivity or lost income due to sales of assets for treatment.

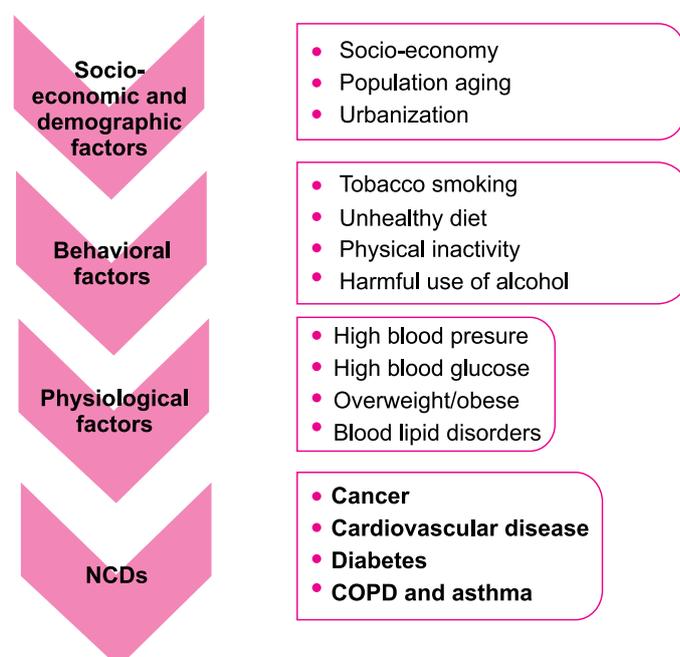
In Vietnam no comprehensive estimates of the NCD financial burden have yet been made. However, several estimates have been made on specific diseases, indicating that the economic burdens deserve attention. Total medical costs and lost labor productivity related to 3 diseases attributed to tobacco use in Vietnam were estimated in 2005 at 1.160 trillion VND (about 77.5 million USD) [145]. A different study estimated that the economic burden of five diseases attributed to tobacco use (lung cancer, stroke, ischemic heart disease, COPD, upper respiratory and digestive tract) in Vietnam in 2011 was 23.139 trillion VND (0.91 percent of GDP; 5.07 percent of health spending) [146].

2.5. Risk factors

Four of the five main NCDs covered in-depth in this report have four common modifiable risk factors, whose reduction through various interventions would also lead to reductions in NCD burden. Figure 45 describes NCDs and risk factors. NCDs are caused by various physiological factors such as hypertension, impaired glucose tolerance, overweight, etc. and modifiable behavioral risk factors such as smoking, unhealthy diet, physical inactivity and harmful use of alcohol. Finally, there are several macro-level factors affecting NCD prevalence, such as

globalization, the socio-economy, urbanization and population aging. This section will present information on each of these risk factors in turn and to the extent possible provide estimates of their contribution to NCD disease burden.

Figure 45: NCDs and risk factors



2.5.1. Socio-economic and demographic factors

Socio-economy and urbanization

The stable rate of economic growth in Vietnam over the past few decades has contributed importantly to increasing incomes and improving nutritional status of the population. However, the negative effects of rapid economic growth and urbanization in Vietnam in recent years include changed eating habits (consumption of fatty foods, sweetened beverages, etc.), increased environmental pollution and habits that are harmful to health (to be discussed in the section on behavioral risk factors) such as harmful use of alcohol, smoking and physical inactivity.

Population aging

Population aging in Vietnam is an important factor contributing to NCD burden of disease. Average life expectancy in Vietnam increased from 65 years in 1989 [76] to 73.1 years in 2013 [40], making Vietnam's population one of the fastest aging populations in the world.

In 2010, among people aged 70 and older, deaths due to NCDs accounted for 85 percent of total deaths and 86 percent of total disease burden measured in DALYs. For the age group 50-69 years, NCDs accounted for 82 percent of deaths and 82 percent of DALYs. The higher the proportion of elderly people in the population, the higher the NCD burden. In analysis of population aging in Chapter I of this report, it was found that NCDs accounted for 8 out of the top 10 causes of death and 9 out of the top 10 causes of years of life lost to disability among people aged 70 and older.

2.5.2. Modifiable risk factors

Tobacco smoking

Tobacco smoking is a risk factor for many NCDs including: stroke, chronic respiratory disease like COPD, cancer (lung, liver, stomach, throat, esophageal, pancreatic, cervical, mouth, leukemia), ischemic heart disease and diabetes among others [147]. In 2010, tobacco smoking was estimated to be associated with 16.9 percent of all deaths (about 74 710 people) and 8.8 percent of total DALYs, mainly through impact on NCDs (97 percent of deaths and 94 percent of DALYs associated with NCDs are attributed to tobacco use) [148].

Trends in tobacco use in Vietnam have begun to decline, but the smoking prevalence rate remains high. In 1992/93, tobacco prevalence (current smoking of tobacco products including pipe tobacco) in males aged 15 and older was 60.5 percent [149], by 2001/02 this rate had fallen to 56.1 percent [150] and by 2010 had continued to fall to 47.4 percent [33]. Among females, in 1992/93 smoking prevalence was 1.8 percent and by 2010 it had fallen to 1.4 percent. From 1992/93 to 2010, smoking prevalence was found to have declined in all age groups (Table 26). In 1992, smoking prevalence was highest in the age group 25-44 years, by 2010 smoking prevalence was highest in the age group 45-64 years. Vietnam is one of 15 countries with the highest smoking prevalence in the world, with about 15.3 million adults currently smoking [33]. Of particular concern is the high smoking prevalence among Vietnamese adolescents and youth, with initiation of smoking beginning at young ages. About 43.6 percent of male youth report that they have ever smoked, with the average age at initiating smoking 16.9 years of age. Among the males who have ever smoked, 71.7 percent continue to smoke [151].

Table 26: Current smoking prevalence by sex and age in Vietnam, 1992-2010

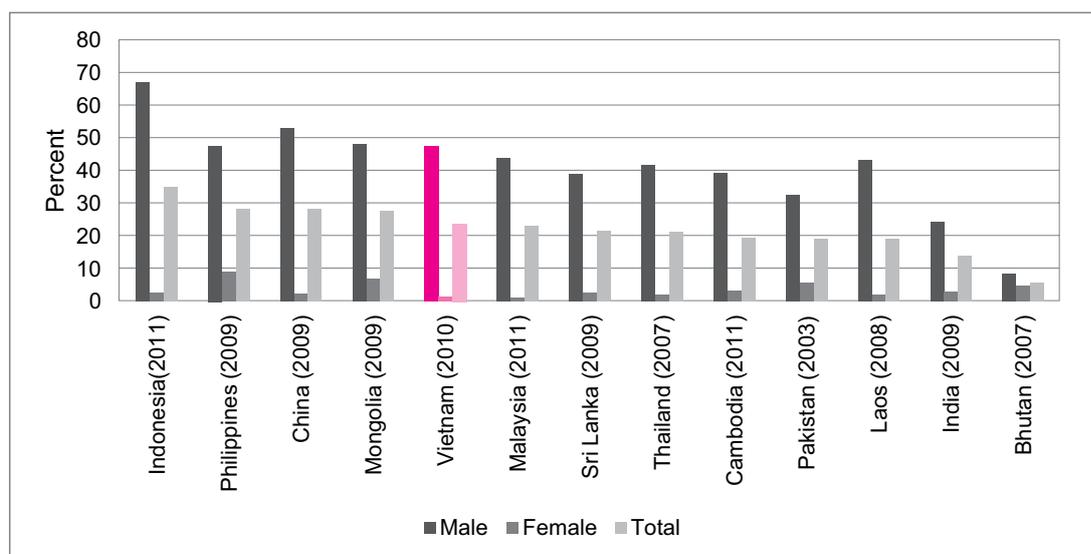
Age group	1992		2010	
	Male	Female	Male	Female
15-24	37.8	0.5	26.1	0.3
25-44	75.4	2.6	56.7	0.9
45-64	68.3	9.2	59.5	2.9
65+	55.8	11.5	33.3	2.9

Source: 1992/93: VLSS 1992/93; 2010: Global Adult Tobacco Survey 2010.

Up to 73.1 percent of adults are exposed to secondhand smoke at home (among these, 67.6 percent, equal to about 33 million people, are non-smokers) and 55.9 percent of workers are exposed to tobacco smoke at the workplace (among these 49.0 percent, equal to about 5 million people, are non-smokers). The highest proportion of people reporting exposure to workplace smoke was found in drinking establishments (bars, cafes) at 92.6 percent and restaurants at 84.9 percent. The proportion exposed to secondhand smoke in the workplace fell to 54.3 percent among universities and 38.7 percent in government offices [33].

Compared to other countries in the world, Vietnam’s tobacco use is on the high side (Figure 46).

Figure 46: Current tobacco use among developing countries in Asia, most recent year



Source: WHO. WHO report on the global tobacco epidemic, 2013. Tobacco control country profiles. http://www.who.int/surveillance/policy/country_profile/en/

Air pollution can exacerbate the health problems associated with smoking. A study by the Hanoi School of Public Health in 2010 indicated that the level of particulate matter (PM_{2.5}) in the home environment and outside at all public places is higher than WHO standards (25 µg/m³), especially at recreation facilities. Similarly, nicotine in the air was detected in all research locations, with the highest rates found in recreation facilities (2.5 µg/m³ in smoking areas and 1.3 µg/m³ in non-smoking areas) and was lowest in schools (0.03 µg/m³) [152].

Harmful use of alcohol

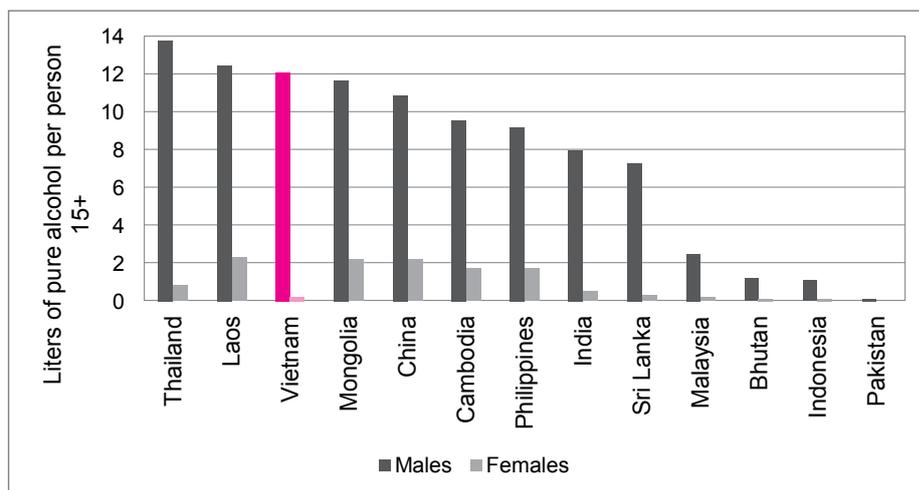
Overuse of alcohol is related to many chronic diseases and injuries [147]. The burden of diseases attributed to alcohol use includes alcohol-related mental disorders, liver cirrhosis, stroke, liver cancer, mouth and nasopharynx cancer, esophageal cancer, breast cancer, epilepsy, road traffic accidents and violence. Overall, alcohol use accounts for about 5.7 percent of total deaths and 4.7 percent of DALYs in Vietnam in 2010 [148]. About three-fourths of burden of disease attributed to alcohol use is in the form of NCDs.

Consumption of alcoholic beverages in Vietnam is rising rapidly. Average consumption of alcoholic beverages per adult (aged 15 and older) per year has increased rapidly, from 3.8 liters of pure alcohol in the period 2003-2005 to 6.6. liters of pure alcohol in the period 2008-2010, including both recorded and estimates of unrecorded alcohol.³² In the period 2008-2010, average per capita annual consumption of pure alcohol by males was 12.1 liters compared to 0.2 liters among females. Considering only people who consume alcohol (aged 15 and older), average annual consumption among males was 27.4 liters per year and among females was 0.9 liters per year [153]. International comparisons indicate that Vietnam's alcohol consumption estimated in terms of pure alcohol (reported and estimated unreported) is relatively high compared to other developing countries in Asia (Figure 47).

³² Defined as alcohol not taxed in the country where it is consumed because it was produced in the informal sector, was brought in hand luggage, or was smuggled in.

The amount of beer consumed per capita in 2013 is estimated at 35.6 liters [31]. Total volume consumed in Vietnam is the highest in ASEAN and third highest in Asia [154]. In general, each year Vietnam spends nearly 3 billion USD on consumption of beer, accounting for about 1.8 percent of GDP [155].

Figure 47: Current per capita alcoholic beverage consumption (recorded and unrecorded) among developing countries in Asia, average 2008-2010



Source: Global status report on alcohol and health 2014. WHO:Geneva. 2014.

Patterns of alcohol use vary by age and sex, but harmful use is rising. Table 27 provides recent data on patterns of use of alcohol by age group in 2008. It indicates that the proportion of males using dangerous levels of alcohol is considerably higher than females and is concentrated on middle-aged people. Results of a survey on risk factors for NCDs undertaken in 2009-2010 indicate that 6 percent of females and 70 percent of males reported drinking alcohol or beer in the past month; among drinkers, about 40 percent of males aged 25-65 years of age consumed alcohol at harmful or dangerous levels (4 or more standard drinks, or about 56 g of pure alcohol) [156]. Prevalence of heavy episodic drinking (consumption of at least 60 g or more of pure alcohol on at least one occasion in the past 30 days) was found among 5.5 percent of male alcohol drinkers and 0.8 percent of female alcohol consumers [153].

Table 27: Prevalence of alcohol use by sex and age, 2008

		Age group					
		15-29	30-44	45-59	60-69	70-79	80+
Male	Non-use/seldom	68.9	62.0	64.4	69.4	73.8	76.9
	Low use	25.4	23.2	21.7	20.1	18.7	17.8
	Risky use	1.4	5.0	4.8	4.2	3.3	2.7
	Dangerous use	4.3	9.8	9.1	6.3	4.2	2.6
Female	Non-use/seldom	99.4	98.6	97.8	97.6	97.2	96.9
	Low use	0.5	1.2	1.7	1.7	2.1	2.2
	Risky use	0.0	0.2	0.4	0.4	0.3	0.3
	Dangerous use	0.1	0.0	0.1	0.3	0.4	0.6

Source: Study on Burden of disease caused by risk factors in Vietnam [157]

The proportion of adolescents and youth who consume alcoholic beverages is increasing rapidly. In the five year period 2003 to 2008, the proportion of youth (aged 16-30 years) using alcoholic beverages increased more than 10 percentage points. In 2008, nearly 80 percent of male and over 36 percent of female youth reported using alcoholic beverages compared to 69 percent of males and 27 percent of females in 2003. The average age of alcohol use initiation for males is 16.5 years and for females is 17.5 years. Among youth (aged 16-30 years) who consume alcohol, 60 percent of males and 22 percent of females indicated that they had ever been intoxicated [151]. A 2013 survey found that in the age group 13-17 years, 31.7 percent of males and 16.5 percent of females had drunk at least one drink containing alcohol on one or more of the past 30 days [158]. Of those, 27.8 percent of males said they had drunk so much that they were intoxicated at some point in their life, compared to 15 percent for females. Among those who had ever had a drink of alcohol (other than a few sips), the percentage who had their first drink of alcohol before age 14 years was 47.2 percent, 52.7 percent among males and 40.1 percent among females [158].

Health impact of alcohol use is high. According to statistics from the Health Strategy and Policy Institute, 4.4 percent of Vietnamese people bear the burden of disease resulting from alcoholic beverage consumption [159]. In 2010, it is estimated that 8.7 percent of males and 0.9 percent of females (aged 15+) had alcohol use disorders. Among alcohol use disorders is alcohol dependence (alcoholism), prevalent in 5.9 percent of males and 0.1 percent of females aged 15+ [153]. Alcoholism and harmful use of alcohol are most prevalent in major cities and mountainous areas, and a vast majority are male aged 20 to 40 years, mostly people who began drinking between the ages of 15 and 30 [160]. Statistics from the Central Mental Hospital Number 1 indicate that 6.5 percent of all inpatients in 2010 were seeking treatment for alcohol-related mental illness. This percentage appears to be increasing from 4.4 percent in 2001 to 7.03 percent in 2005 [161]. According to the HCMC Mental Hospital, mental disorders related to alcohol use account for 4.68 percent of the population, equal to the sum of the next two most prevalent mental illnesses, depression (2.47 percent) and anxiety (2.27 percent) [162].

Physical activity

Physical inactivity is related to many NCDs like osteoporosis, arthritis, lower back pain, obesity, heart disease, breast cancer, prostate cancer, colorectal cancer, depression, anxiety and stress. Physical inactivity is the cause of about 2.8 percent of all deaths (12 648 deaths and 1.5 percent of DALYS based on estimates for Vietnam in 2010. According to the Vietnam burden of disease study, all diseases related to physical inactivity are NCDs. In Vietnam the main diseases attributed to physical inactivity are heart disease, colon cancer and diabetes [148].

The proportion of the population in Vietnam reporting that they get regular physical exercise has been increasing (Chapter I, Table 10), however the estimates still indicated that only about one quarter (27.2 percent) of the population was getting regular physical exercise [38]. Table 28 below presents the proportion of people getting physical exercise by age. The data indicate that the proportion of people getting adequate physical exercise is higher among women than men for all ages. The proportion of people getting exercise declines with age. In 2009, 30.4 percent of people aged 26-64 years had low levels of physical activity, with physical inactivity higher in urban than rural areas [157]. A recent survey of 900 people in Hanoi, Hue and HCMC indicates that up to 34 percent of people don't participate in any physical activity,

with the main reasons given being no time (84 percent), reluctance to wake early or to get physical exercise (9 percent) and lack of means or places to exercise (2 percent) [163].

Table 28: Levels of physical activity by age and sex (%)

		Age group				
		30-44	45-59	60-69	70-79	80+
Male	Adequate	89.9	86.8	81.3	80.1	77.7
	Insufficiently active	1.3	2.2	2.3	3.3	3.8
	Inactive	8.8	11	16.3	16.6	18.5
Female	Adequate	94.0	91.0	84.2	84.1	81.8
	Insufficiently active	0.9	1.8	2.4	2.6	2.9
	Inactive	5.2	7.2	13.4	13.3	15.3

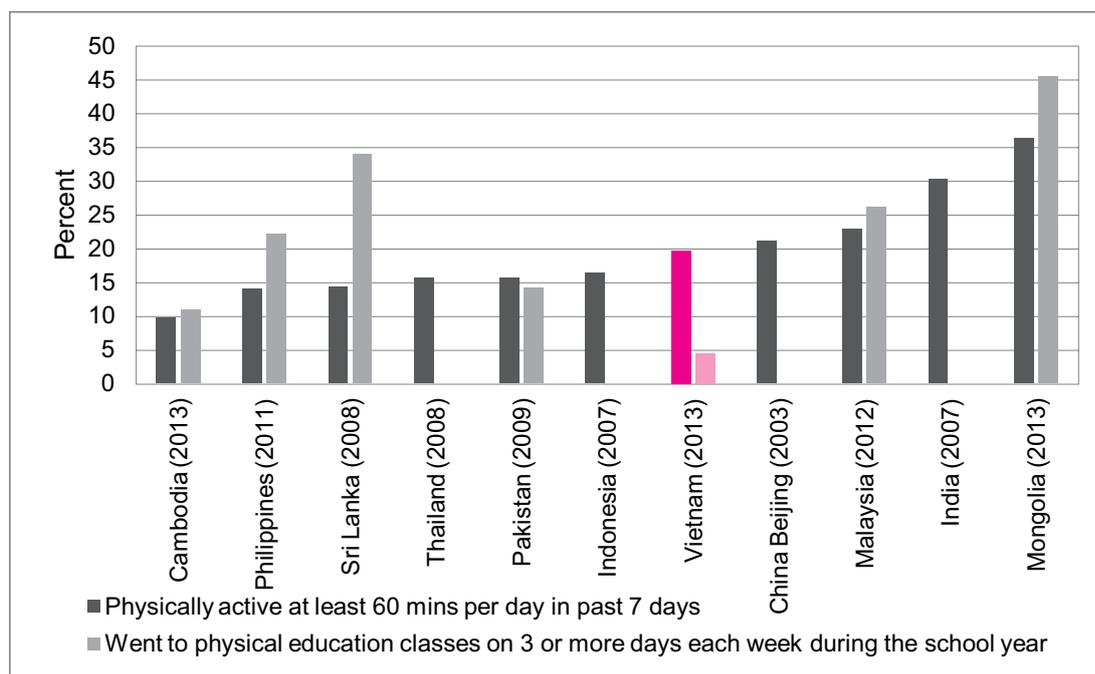
Note: Inactive means doing no or very little physical activity at work, at home, for transport or in discretionary time. Insufficiently active means doing some physical activity but less than 150 minutes of moderate intensity physical activity or 60 minutes of vigorous-intensity physical activity a week accumulated across work, home, transport, or discretionary domains. Sufficiently active means at least 150 minutes of moderate-intensity physical activity or 60 minutes of vigorous-intensity physical activity a week accumulated across work, home, transport or discretionary domains.

Source: Study on Burden of Disease due to risk factors in Vietnam [157].

Starting physical exercise habits in young ages is crucial for establishing healthy lifestyles, yet in Vietnam even youth inadequate participate in physical activity. According to results of the second Survey Assessment of Vietnamese Youth (SAVY), up to 23 percent of respondents reported seldom or never participating in physical activities, and 45 percent reported only occasionally exercising [164]. A study monitoring youth in HCMC over five years (2004-2009) indicates that the amount of time spent on physical activity has significantly declined from 87 minutes to 50 minutes per day. The amount of time spent on sedentary activities over the same five years has increased from 512 minutes to 600 minutes per day [165].

In parks, the number of youth participating in jogging, walking or exercising is lower than for adults. Among students aged 13 to 17 in 2013, only 19.7 percent reported that they were physically active for a total of at least 60 minutes per day on five or more days during the past seven days, 26.8 percent among males and only 13.4 percent among females. Only 4.5 percent of students reported attending physical education classes on three or more days a week during the school year. In contrast, about 42.4 percent of youth indicated spending three or more hours per day during a typical day doing sitting activities [158]. These indicate low compliance with WHO recommendations on physical activity and international comparisons show that Vietnam is performing especially poorly regarding physical education hours in school (Figure 48). The consequence is that prevalence of overweight and obesity is increasing, even among adults, especially in urban areas (See section below on physiological risk factors).

Figure 48: Physical activity indicators for adolescents among developing countries in Asia, most recent year



Note: Some countries do not have data on physical education classes. Ages 13 to 15 years except for Malaysia, Mongolia, Vietnam and Cambodia who gathered data from adolescents aged 13 to 17 years.

Source: WHO. Global school-based student health survey (GSHS). Country data sheets. <http://www.who.int/chp/gshs/factsheets/en/>

Unhealthy diet

Unhealthy diet includes many different behaviors. With relation to heart disease, risk factors include eating too little fruit and vegetables, whole grains, seeds (like peanuts and sesame), fiber, seafood containing Omega 3 fatty acids, and polyunsaturated fats. On the other hand eating too much salt, processed meats (sausages, ham) and trans fatty acids is also associated with elevated risk of heart disease. Risk factors for cancer, mainly stomach and colorectal cancers is consumption of too little fiber, fruit, vegetables, milk and calcium, or consuming too much red meat, processed meats and salt. Diabetes is associated with eating too little whole grains, or eating too much red meat, processed meat and consuming sugar-sweetened beverages. Overweight and obesity are related to eating too much food, especially sugar-sweetened beverages, and are in turn a risk factor for many diseases, which will be discussed below in physiological risk factors. Disease burden related to diet in 2010 is estimated to be related to 23 percent of total deaths and 9.5 percent of total DALYs.

As malnutrition has fallen due to an increase in protein and calorie intake, the structure of diet (protein, lipids and glucids) has generally improved. Trends in food consumption from 1981 to 2010 indicate a strong increase in almost all foodstuffs like meat (increased from 11.1 to 84 g/person/day), fish (increased from 35 to 59.8g), eggs and milk (increased from 0.8g to 29.5 g), ripe fruit (increased from 2.2g to 61.9g), oil and fat (increased from 1.6 to 8g) and nuts and grains (slight increase from 3 to 5.4g) (Table 29). The current overall balance of lipids, glucids and protein is assessed by the National Institute of Nutrition as ideal [166].

Table 29: Changes in diet of Vietnamese people, 2000-2010 (unit: grams per person per day)

Food type	1981	2000	2010
Meat	11.1	51.0	84.0
Fish	35.0	45.5	59.8
Eggs, milk	0.8	10.3	29.5
Oil, fat	1.6	6.8	8
Vegetables	214	178.6	190.4
Fresh fruit	2.2	62.4	60.9

Source: National Institute of Nutrition. General Nutrition Survey 2009-2010. <http://www.nutrition.org.vn/FileUpload/Documents/THDD%20VN%202009-2010.PDF>. Figure 1.4.2 and Table 4.11.

Despite the improvements in nutrition, there are some worrying dietary patterns, particularly in relation to NCDs. The daily amount of salt intake per capita has reached 18-22 g, which is three to four times higher than recommended levels [167]. The proportion of people who eat less than five servings of vegetables per day is rather high, 77.1 percent in urban areas and 83.7 percent in rural areas [157]. The 2010 general nutrition survey found that levels of vegetable consumption were only 57 percent of recommended amounts. The survey also found that consumption of meat is higher and the consumption of seafood is lower than recommended levels. The National Institute of Nutrition recommends consumption of 1.5 kg of meat per person per month. Meat consumption in all regions exceeds this amount, particularly the Red River Delta with consumption at 216 percent of recommended amounts. It is recommended to consume 2.5 kg of seafood per person per month, but consumption on average reaches only 83 percent of this recommended level, and is lowest in the Northern midlands and mountain areas [166].

Imbalance in diet is especially prominent in some groups of the population and regions. Particularly overconsumption of energy for children, and overconsumption of saturated fats and trans fatty acids among school pupils, urban residents, and some groups of office workers. The trend towards lower consumption of vegetables and fruit is also prevalent among office workers and school students, especially in primary school. A recent study found primary school pupils in HCMC only ate 50 percent of the recommended amount of vegetables and 30 percent of the recommended amount of fruit per day [168]. Compared to recommended amounts, vegetable consumption is low, especially in the Mekong River Delta and North Central and Central coastal areas (49 percent of recommended amount) and in the Central Highlands (53 percent). The highest level of consumption only reaches 72 percent of recommended amount, in the Northern midlands and mountain areas [166].

The types of foods being selected by the population are tending towards less healthy items. With 5.1 billion packs of instant noodles consumed in 2012, Vietnam has the fourth highest consumption in the world of this product. However, there are still no concrete regulations on trans fatty acids and salt content in these noodles. Other contaminants have also been found in noodles including recent food safety inspections that found 30.8 to 449 ppm of oxalic acid in samples tested. Recently the Consumer association of Penang, Malaysia announced that eating large quantities of instant noodles increases the risk of stroke, kidney failure and hypertension, mainly due to the high salt content.

In 2013, Vietnam consumed about 925 million liters of sweetened carbonated non-alcoholic beverages. A survey at canteens in 16 elementary schools in HCMC in the 2010-11

school year indicated a high share of primary school canteens sold sweetened beverages (60 percent), cakes (41.2 percent), and instant noodles (23.9 percent), because they satisfy the tastes of primary pupils and are cheap, despite the fact that they have no nutritional benefit. Fresh fruits were sold in only 1.1 percent of canteens and canteen staff in only 12.5 percent of schools had training in proper nutrition [169]. Vietnam still has no regulations to control marketing of sweetened beverages to children nor does it have any policies to try to reduce the amount of sugar in beverages.

2.5.3. Physiological and metabolic risk factors

High blood pressure

High blood pressure is a major risk factor for stroke, ischemic heart disease and other heart diseases [170]. According to a survey of the National Heart Institute conducted between 2002 and 2008, prevalence of high blood pressure in adults aged 25 and older is 25.1 percent [171], higher in males than females (28.3 percent versus 23.1 percent), and represents an increase of 48 percent compared to the prevalence found in the National Health Survey 2001/2002 [150]. Among people detected to have high blood pressure in the survey, only 48.4 percent knew their hypertension status in advance, 29.6 percent were seeking treatment and only 10.7 percent were effectively controlling their blood pressure (i.e. achieving blood pressure < 149/90mmHg). The prevalence of high blood pressure increases with age in both males and females, and is higher in urban than rural areas (32.7 percent vs. 17.3 percent). High blood pressure is estimated to cause 91 560 deaths per year as of 2010, accounting for 20.8 percent of total deaths and 7.2 percent of total DALYs, mainly due to stroke and ischemic heart disease [148].

Elevated blood cholesterol

High total cholesterol in the blood is a risk factor for ischemic heart disease and ischemic stroke [170]. Data from a survey of risk factors undertaken in 2008 indicates that the prevalence of elevated lipids in the blood (higher than 5 mmol/liter) in Vietnam was 30.1 percent [156]. The risk attributed to elevated total cholesterol in the blood for stroke and ischemic heart disease was higher among females than males. Total cholesterol in the blood is estimated to cause about 1.4 percent of all deaths and 0.7 percent of all DALYS in Vietnam in 2010 [148].

Elevated fasting blood glucose and diabetes

Elevated fasting blood glucose is an indicator for diagnosing diabetes, but is also a risk factor for many health problems, such as ischemic heart disease, stroke and kidney failure, even when the patient has not yet reached blood glucose levels high enough to diagnose diabetes [170]. Impaired fasting glucose is diagnosed when the fasting plasma glucose level is 5.6 mmol/L (according to American Diabetes Association) and diabetes is diagnosed when it reaches 7 mmol/L. In 2009, in Vietnam, 3.8 percent of the population aged 25-64 had fasting blood glucose measured at 5.6 mmol/L or higher. The proportion was higher in urban (4.6 percent) than rural (3.4 percent) areas. It is higher among men (4.4 percent) than women (3.2 percent) [156].

Data on diabetes prevalence by age and sex in 2008 (Table 30) indicate that diabetes prevalence increases with age and is higher among females than males. It is estimated that elevated fasting blood glucose causes 6.3 percent of total deaths and 3 percent of total disease

burden measured in DALYs in Vietnam in 2010. The health risk attributed to diabetes is higher for females than males with regard to ischemic heart disease and stroke [148].

Table 30: Prevalence of diabetes by sex and age, 2008

	Age group				
	30-44	45-59	60-69	70-79	80+
Male	1.2%	4.6%	7.6%	8.7%	9.6%
Female	1.5%	5.3%	8.6%	10.3%	11.8%

Source: Nghiên cứu “Gánh nặng bệnh tật gây ra bởi một số yếu tố nguy cơ tại Việt Nam” [157]

Overweight and obesity (BMI)

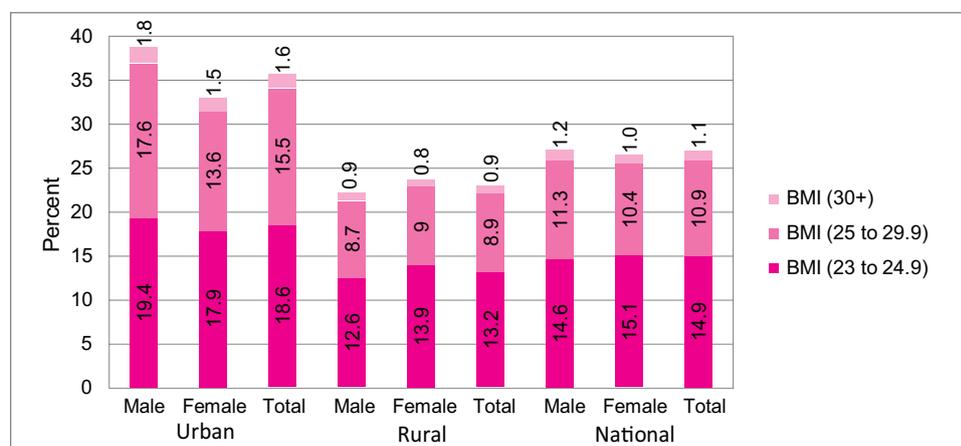
Body mass index (BMI) can be used to assess nutritional status among adults, especially for determining overweight and obesity status. Overweight and obesity are risk factors for digestive tract cancers and several other types of cancer, heart disease (including ischemic stroke, ischemic heart disease and hypertension), chronic kidney disease, arthritis and lower back pain [170].

In Vietnam, the proportion of males and females with BMI from 23-24.9 (overweight with elevated risk for NCDs according to Asian cut-offs) are on par with each other (14.6 percent in males; 15.1 percent in females), the proportion of people with BMI from 25 to 29.9 (overweight) in males (11.3 percent) is higher than females (10.4 percent) (Figure 49). Thus, if we take the BMI cutoff of 23 and higher, 26.1 percent of Vietnam’s population would be considered at risk of NCDs due to their body weight in 2012.

In urban areas, overweight and obesity are more prevalent than in rural areas (overweight among males in urban areas is estimated at 37 percent, compared to 21.3 percent in rural areas; among females in urban areas about 31.5 percent are overweight versus 19.9 percent for females in rural areas [156].

Prevalence of overweight and obesity in adults has also grown rapidly, especially in major cities because of diet high in energy and physically inactive lifestyles. In 2006, 16.3 percent of adults were overweight or obese [172], by 2010 this had increased to 26 percent [156].

Figure 49: BMI levels in adults by sex and urban/rural residence, 2009



Source: Ministry of Health, Report on results of a study on risk factors of some NCDs in Vietnam 2012 [156].

Over the decade from 2000 to 2010, prevalence of overweight and obesity in children under age 5 increased 9 times from 0.62 percent to 5.6 percent, exceeding the policy target of trying to limit child overweight to below 5 percent. In urban areas, 6.5 percent of children are overweight or obese, and in the central parts of cities, this proportion exceeds 12 percent [166]. A survey in two schools in HCMC showed that 60 percent of school pupils have above normal blood lipid levels; about 38.5 percent of these children have fatty abdomens, or have high BMI [173]. Another study in 2011 found that 29 percent of children from age 6 months to 12 years in urban areas are overweight or obese [174].

Overweight and obesity are estimated to cause about 1 percent of total deaths and 0.9 percent of DALYs in Vietnam in 2010. Diabetes, ischemic heart disease, arthritis and lower back pain are the main health problems due to disease burden attributed to high BMI [148].

2.5.4. Risk factors for mental illness

While no systematic studies of mental illness risk factors or mental health protective factors have been implemented, there is an increasing body of evidence about this issue. Alcohol and drugs are major risk factors for mental illness. Alcohol has been discussed in this chapter, while drugs have been discussed in Chapter I. Here we will focus on various other risk factors that have been identified in studies about mental health in Vietnam.

A study of mental health in adults aged 18 and older found that poverty was a strong risk factor for mental illness. It also found that women, the young and the very old were more affected by mental distress than men and middle aged people [175]. Post-partum mental disorders in Vietnam are prevalent, and have been found to be affected by several factors. Living in a poor rural commune rather than in the relatively prosperous national capital, domestic violence (both intimidation and physical abuse) were both associated with twice the rate of common postpartum mental disorders. Poverty and violence combined led to higher rates of postpartum mental disorders. Sympathetic husbands and mothers-in-law appears to be a protective factor reducing rates of postpartum mental disorders [176].

Children and youth are particularly vulnerable groups for mental health problems. A 2011 study of youth aged 11 to 18 found that higher household income, older ages, and religious affiliation were important protective factors for mental health in Vietnam [177]. Trusting relationships between parents and children, and careful parental supervision can be important protective factors, whose absence has been associated with mental illness. Data on adolescents aged 13 to 17 indicates that about 10 percent of Vietnamese school children reported missing classes without permission and 70 percent of adolescents reported that their parents only sometimes or never know what their children are doing and 80 percent reported that their parents only sometimes or never understand their problems during the past 30 days. These indicators suggest that Vietnamese adolescents are not adequately protected, and are therefore more vulnerable to mental health problems than if their parents more closely supervised their activities and listened more carefully to their concerns [158].

2.6. Conclusions and recommendations

Conclusions

- Currently NCDs account for a large share of morbidity in Vietnam in terms of epidemiology and burden of disease (YLL, YLD and DALYs), and constitute a substantial economic burden as well.
- Current NCD prevention and control programs only cover about 30 percent of total NCD burden of disease. Some NCDs that account for a high share of disease burden have not received adequate attention including stroke, liver cirrhosis, chronic kidney disease, musculoskeletal disorders and depression.
- NCD burden of disease is affected by many different risk factors, the four most important being unhealthy diet, tobacco smoking, high blood pressure and harmful use of alcohol. Trends in risk factors indicate that tobacco use has begun to decline, yet smoking prevalence remains at a high level for men. At the same time prevalence of high blood pressure, the amount of alcohol consumed and diet are worsening.
- Among NCDs, many diseases do not cause premature mortality, but lead to long years of life with disability, and require treatment and disease management till the end of life.
- Data on NCD epidemiology and risk factors in Vietnam are incomplete and unreliable, and difficult to obtain because relevant agencies do not provide up-to-date data on their websites or on the Ministry of Health website. In many cases it is necessary to seek data disseminated by international organizations, even though the original source of information was the Vietnamese health sector. The set of indicators for monitoring prevention and control of NCDs in Vietnam is incomplete. The information shortage is especially acute for mental illness and risk factors.

Recommendations

- The health sector must collaborate multi-sectorally and mobilize the participation of various sectors, social organizations and the community to reduce NCD risk factors.
- The health sector must advocate for NCD prevention and control to become a priority program of the Government and the health sector. The following three basic steps should be undertaken: (i) increase awareness of NCDs among policymakers, especially those outside the health sector; (ii) analyze intervention alternatives using the criteria of cost-effectiveness, equity and appropriateness with local socio-economic conditions; and (iii) on that basis, develop a national strategy for NCD prevention and control. Pay special attention to neglected diseases for which there is not currently a national program.
- Re-assess Vietnam's NCD monitoring indicators and develop a plan and provide funding for information gathering necessary to monitor NCDs in Vietnam and assess impact of interventions. Set up, refine and operate a surveillance system, with a focus on death registries, community monitoring, surveys on exposure, risk factors and response of the health system. Pay special attention to mental health information and statistics.

Chapter IV: Control of common NCD risk factors

NCD risk factor control is one of three main groups of measures that WHO recommends using to prevent and control NCDs globally. The situation of NCD risk factors in Vietnam was introduced in Chapter III. This chapter provides an overview of Vietnam's policies and strategies for control of the four common NCD risk factors, namely: tobacco use, harmful use of alcohol, unhealthy diet and physical inactivity. The report will also analyze and evaluate results that have been achieved and difficulties and challenges in the organization and implementation of these policies and strategies. On the basis of this analysis, policy gaps and priority problems will be identified and measures proposed for effective control of NCD risk factors in Vietnam, with emphasis on inter-sectoral measures, mobilization of whole of society participation and consideration of the ten highly cost-effective interventions for NCD risk factor control recommended by WHO (Chapter III, Table 23) [178].

1. Tobacco control

1.1. Objectives

Prime Ministerial Decision No. 229/QĐ-TTg approved the National strategy for the prevention and control of harm from tobacco use to the year 2020", including the following goals to be achieved by 2020:

Overall objective

Reduce the demand for tobacco and control to gradually reduce supply of tobacco products consumed in the Vietnamese market in order to reduce the risk of disease and death caused by tobacco use.

Specific targets

- Reduce smoking prevalence in several demographic groups including:
 - Adolescents and youth (15-24 years of age): From 26 percent in 2011 down to 18 percent in 2020;
 - Males: From 47.4 percent in 2011 down to 39 percent in 2020;
 - Females: Reduce to below 1.4 percent by 2020.
- Strengthen compliance of the people with regulations on smoke-free areas.

1.2. Results of implementation

Policies, strategies

Tobacco control activities began to be introduced into national policies in Vietnam starting around 2000 with Government Resolution No. 12/2000/NQ-CP approving the "National policy on prevention and control of harm from tobacco use for the period 2000-2010". Vietnam ratified the Framework Convention on Tobacco Control in 2004 (effective date was 17 March 2005). In 2005, the Government issued Decree No. 45/2005/ND-CP regulating several public

places where tobacco use was banned and the fines that would be imposed on people smoking in those non-smoking areas. In 2007, the Prime Minister issued Directive No. 12/2007/CT-TTg on strengthening tobacco control activities. In 2009, the Prime Minister signed Decision No. 1315/QD-TTg approving the plan for implementing the Framework Convention on Tobacco Control, which came into effect on 1 January 2010.

Tobacco control activities in Vietnam entered a new phase after the Tobacco control Law (Law No. 09/2012/QH13) was enacted by the National Assembly on 18 June 2012 and came into effect as of 1 May 2013. This policy document has the highest legal status for regulating tobacco control activities in Vietnam. On the basis of the law, the Ministry of Health has directed and coordinated other relevant ministries and sectoral agencies to develop and submit for approval various documents guiding implementation of the Tobacco control law in their jurisdiction, including:

- Prime Ministerial Decision No. 229/QD-TTg (2012) approved the National strategy for prevention and control of harm from tobacco use to the year 2020.
- Decree No. 67/2013/ND-CP stipulating details of some articles and methods for implementing the Tobacco control law related to sales and trade in tobacco products.
- Decree No. 77/2013/ND-CP stipulating details for implementing the tobacco control law in regard to methods to prevent and control harm from tobacco.
- Prime Ministerial Decision No. 47/2013/QD-TTg on establishing and approving the charter for the organization and activities of the Tobacco control fund and Ministry of Health Plan No. 801/KH-BYT on implementing Decision No. 47/2013/QD-TTg.
- Decree No. 176/2013/ND-CP stipulating penalties for administrative violations in the area of health, including penalties for smoking in public places.
- Decree No. 185/2013/ND-CP stipulating penalties for administrative violations in the field of commerce, sales of counterfeit goods, banned goods and consumer protection.
- Joint Circular No. 05/2013/TTLT-BYT-BCT of the Ministry of Health and Ministry of Trade guiding labeling and health warnings on cigarette packs.

Besides the above policies, the Ministry of Health has also assigned the Food Safety Administration to serve as the leading agency for preparing national technical standards on cigarettes. Currently the draft standards are being completed and prepared for issuance.

With the issuing of the Tobacco control law, along with its guiding documents, the policy framework for tobacco control in Vietnam is relatively comprehensive and includes all four of the cost-effective ‘best-buy’ interventions recommended by WHO. Nevertheless, some tobacco control policies remain incomplete compared to recommendations (Box 1).

Box 1: Gaps in Vietnam's tobacco control policies compared to WHO recommendations

- **Protection of people from tobacco smoke exposure**
 - Smoking is not yet banned in all public places (for example cafes, bars) and on all public transport.
 - Funds have not been allocated for enforcement.
- **Tobacco cessation support**
 - There is not yet a free tobacco cessation advising service; nicotine replacement therapy is not yet approved for use; and health insurance does not yet cover costs of tobacco cessation therapy.
- **Health warnings on tobacco packages**
 - Some specific regulations on tobacco pack style are missing (requirements for plain packaging to make packs less attractive and elegant).
 - No information on smoking cessation on packaging.
 - No ban on smokeless tobacco sales.

Source: WHO Report on the Global Tobacco Epidemic, 2013 - Country profile: Vietnam [179] and Tobacco Control in Vietnam [180].

Organization of policy implementation

The Vietnam Committee on Tobacco or Health (VINACOSH) was established under Prime Ministerial Decision No. 467/QĐ-TTg dated 17 April 2001 with the Minister of Health as chair and a vice-minister of health as permanent vice-chair, a vice minister of Culture and sports as another vice-chair and 11 members representing leadership of relevant ministries, sectoral agencies and mass organizations.

In the role as the permanent agency responsible for tobacco control, the Minister of Health has signed the official letters No. 1767/BYT-KCB and No. 1766/BYT-KCB (2013) proposing the ministries, sectoral agencies and provincial-level people's committees collaborate in the organization of activities to implement the Law on tobacco control. So far, the Ministry of Health has received tobacco control plans and strategies of six ministries and sectoral agencies and 36 provinces and 10 mass organizations.

On the basis of the Law on tobacco control and related sub-legal documents, the ministries, sectoral agencies, mass organizations have set up steering committees, issued decisions and directives on the organization of implementation of the Law on tobacco control and strengthening tobacco control activities within their sector or agency. The Ministry of Health has issued Directive No. 05/CT-BYT; The Ministry of Transport issued Directive No. 02/2005/CT-BGTVT and Directive No. 20/CT-BGTVT; The Ministry of Education and Training issued Directive No. 56/2007/CT-BGDDT; The Ministry of Public Security has issued Decision No. 1959/QĐ-BCA; The Vietnam Federation of Labor Unions issued Guidance No. 1350/HD-TLD and guidance No. 29/HD-TLD.

MPOWER assessment

Monitoring and evaluation

Monitoring is considered an important measure for implementing the national tobacco control strategy to the year 2020, even though there are no specific legal documents focused

on this activity. However, in 2011, the Ministry of Health issued Decision No. 2180/QD-BYT providing a set of indicators for monitoring and evaluation of NCD prevention and control, which includes five indicators related to tobacco, specifically the proportion of people who currently smoke, the proportion of people who smoke daily, average age at onset of daily smoking, average number of cigarettes smoked per day by daily smokers and the proportion of people exposed to secondhand smoke on a daily basis. Responsibility for gathering information for monitoring was assigned to the Ministry of Health, provincial health bureaus and local health IEC centers³³.

Protecting the people from tobacco smoke

The policy protecting people from tobacco smoke is mentioned in the Law on Protection of the People's Health (1989) stipulating "ban smoking in meeting rooms, cinemas, theaters and other public places according to regulations." The number of public places where smoking is prohibited has gradually been expanded along with regulations that strengthen fines for violations in the National tobacco control strategy 2000-2010, Governmental Decree No. 45/2005/ND-CP and Prime Ministerial Decision No. 1315/QD-TTg in 2009.

The Tobacco control law stipulates the rights of people to live in a smoke-free environment. Smoking is banned on the entire indoor and outdoor premises of health facilities, educational facilities (other than universities, colleges, and academic institutes where smoking is prohibited indoors only), childcare facilities and entertainment areas designated for children. In other public places and workplaces, smoking is prohibited indoors, with the exception of airport waiting areas, bars, karaoke lounges, discos, hotels, and guesthouses, where smoking rooms can be designated if appropriate ventilation systems are in place. Sub-legal documents to aid in implementation of the law also regulate the development and implementation of models for smoke-free communities, government offices and organizations, promote further development and scaling up of models shown to be effective, and stipulate penalties for administrative violations related to no smoking areas.

On the basis of these regulations and policy guidance, some localities have piloted projects for developing smoke-free cities like Ha Long, Thai Nguyen, Hanoi, Hue, Da Nang, Hoi An, Nha Trang and Tien Giang. The pilot activities mainly focus on IEC about harm from tobacco, supply of signs for designating no smoking areas and to inform about harm from tobacco use, advocacy to set up a steering committee, support and monitoring of smoke-free policy implementation in government offices, public places and public transport.

The Ministry of Education and Training has started a campaign for "Developing friendly schools with active students" over many years. This campaign has had initial successes in changing the face of schools, increasing awareness of students about building their classes. The health sector has also started a campaign for smoke-free hospitals, health sector units and offices. At Chi Linh general hospital (Hai Duong province), due to the determination of the leaders, tight collaboration with the police in checking and imposing sanctions, the hospital has effectively implemented a smoke-free model with 100 percent of hospital staff being smoke-free. In addition, the hospital imposes sanctions on relatives of staff or patients who violate the hospital smoking ban [181]. The Vietnam Labor Federation, police and army are also working on developing smoke-free environments within their sectors.

³³ Ministry of Health Decision No. 2180/QD-BYT dated 28 June 2011 on issuing the set of monitoring and evaluation indicators for NCD prevention and control.

The Ministry of Health has organized seminars, training and preparation workshops for initiating implementation of penalties for violations in smoking bans according to Decree No. 176/2013/ND-CP, which came into effect on 1 January 2014.

The initial assessment of the Hanoi School of Public Health regarding the pilot project of Smoke-free cities in Hue and Nha Trang indicated some promising results in terms of increasing awareness of the community about the harm from tobacco use, reducing smoking prevalence and exposure to secondhand smoke in the workplace. Results of interviewing more than 1200 people in January 2014 indicated that male smoking prevalence is 39.3 percent, a reduction of 10.1 percentage points compared to the survey at the beginning of 2012 (49.4 percent). The proportion of workers exposed to secondhand smoke in the workplace has also fallen 9.3 percentage points in Nha Trang (from 57 to 47.7 percent) and 19 percentage points in Hue (from 62.5 to 43.5 percent). Three-quarters of respondents in Nha Trang and more than half (56.9 percent) in Hue know about the Law on tobacco control [182].

Another survey by the Public Health Association in five cities (Hanoi, Thai Binh, Dong Thap, Ha Tinh and Khanh Hoa) indicate that 90 percent of workers support regulations banning smoking in hospitals, schools, transport vehicles and government offices. 93.8 percent support banning smoking in schools; 100 percent of leaders of provincial government offices, committees, sectors support fully the policy of smoke-free public places [181].

Offering help to quit tobacco use

Supporting counseling for tobacco cessation was stipulated in the National tobacco control strategy 2000-2010 and has been emphasized and clarified with measures for both technical and financial support in Prime Ministerial Decision No. 1315/QD-TTg (2009) approving the plan for implementing the Framework Convention on Tobacco Control.

The Tobacco control law stipulates “Encourage and facilitate agencies, organizations and individuals, both domestic and foreign, to participate in providing services to support smoking cessation; study and produce medicines to help with smoking cessation; cooperate with or fund tobacco control activities; and consumers to voluntarily quit smoking”. Decree No. 77/2013/ND-CP permits organizations or individuals meeting certain conditions to organize free or paid counselling activities to aid in smoking cessation (can be supported by the Tobacco control fund).

On the basis of the Law, the Ministry of Health in collaboration with VINACOSH has developed a tobacco cessation handbook and is drafting guidance for self-help cessation of tobacco use to be issued in the near future. The VINACOSH website provides information on the smoking cessation handbook and other information aimed at providing advice, sharing experience, and supporting tobacco cessation. Contact information for two Tobacco quit centers at Bach Mai Hospital and the University Medical Center of HCMC have also shared this information on the internet.

Warnings about the dangers of tobacco

Decree No. 119/2007/ND-CP stipulated that starting 1 August 2008, all cigarette packs must include the printed warning “Smoking can cause cancer” or “Smoking can cause COPD” in black letters on a white background taking up 30 percent of the surface area of the cigarette pack.

Pictorial warnings were proposed in Prime Ministerial Decision No. 1315/QĐ-TTg dated 21 August 2009, followed by clear regulations in the Tobacco control law and guidance for implementation in Joint circular No. 05/2013/TTLT-BYT-BCT that came into effect on 1 May 2013. According to these regulations, labels must be in Vietnamese. The pictorial and text warning must take up at least 50 percent of the front and back of the cigarette pack. The warnings must be rotated among six specific warnings and images regulated in detail in Joint circular 05. Labels are not allowed to use the terms low tar, light, ultra-light, mild or other terms that might mislead consumers to think they are less harmful.

With these regulations, Vietnam is one of four Southeast Asian nations and one of about 40 nations in the world that is implementing pictorial warnings. Thang Long tobacco company is the first unit to implement pictorial warnings on their packs from 1 August 2013. Phillip Morris is the second company, applying the policy from 1 December 2013. Up till now, all units of the Vietnam General Tobacco Corporation have implemented pictorial health warnings on their cigarette packs produced for consumption domestically and for imported tobacco products.

Enforcing bans on tobacco advertising, promotion and sponsorship

Bans on tobacco advertising in the mass media were stipulated in Prime Ministerial Directive No. 13/TTg since 1992. After this, the National tobacco control strategy for the period 2000-2010 stipulated bans on all tobacco advertising and promotion. A comprehensive ban on all forms of tobacco advertising, promotion and sponsorship was reaffirmed and emphasized in Prime Ministerial Directive No. 12/2007/CT-TTG and Prime Ministerial Decision No. 1315/QĐ-TTg (2009). In particular, item 2 in Article 9 of the Tobacco control law states clearly “strictly ban tobacco advertising and promotion, direct marketing to consumers in any form”. According to Decree No. 176/2013/ND-CP, violations of the tobacco advertising ban can be fined up to 40 million VND.

In addition to banning tobacco advertising in all mass media, banning tobacco sponsorship for cultural and sports events, the Ministry of Culture, Sports and Tourism has issued Circular No. 02/2014/TT-BVHTTDL dated 14 May 2014 limiting use of smoking in theatre, movies and television. According to the circular images of people smoking tobacco will be limited to portrayals of historical figures, recounting historical events, or for the purpose of criticizing tobacco use. For any other artistic use permission must be sought from the arts council.

Vietnam is one of 83 countries that has comprehensive ban on tobacco advertising, promotion and sponsorships. Vietnam has been assessed as one of seven countries with the highest performance in comprehensively banning tobacco advertising, marketing, promotion and sponsorships [32].

Raising taxes on tobacco products

The special consumption tax (like an excise tax) have been imposed on tobacco products since 1990, with a tax rate of 52 percent for filtered cigarettes produced using imported ingredients, 70 percent for filtered cigarettes produced with domestic ingredients and imported cigars and 32 percent for non-filtered cigarettes. By 1999, the special consumption tax rates were reduced 5 to 7 percent for all tobacco products when the value added tax of 10 percent was imposed. From 2006, all tobacco products were imposed a special consumption tax of 55 percent, increased to 65 percent in 2008. In addition tobacco enterprises must also pay the enterprise tax.

According to stipulations in the Law on special consumption tax (whose implementation was guided by Decree No. 26/2009/ND-CP and Ministry of Health Circular No. 05/2012/TT-BTC), cigarettes, cigars and other tobacco products should be imposed a tax rate of 65 percent. According to the revised Law on special consumption tax approved on 26 November 2014, the tax rate on cigarettes and cigars will increase to 75 percent as of 1 July 2015 and 85 percent from 1 January 2018. Imported cigarettes and cigars are imposed an import tax of 150 to 225 percent of the CIF price. Currently no taxes are imposed on pipe tobacco [180].

Other policies

Policies related to reducing supply of tobacco products

The Tobacco control law stipulates that the tobacco distribution is a sector and field of business subject to various conditions and requiring a government license; the development of the tobacco distribution master plan is directed and coordinated by the Ministry of Trade and Industry with assistance from other ministries and sectors, then submitted to the Prime Minister for approval. The Law also stipulates measures to control production of cigarettes appropriate with the master plan and control over the amount of cigarettes that will be sold in the domestic market. The Ministry of Trade and Industry also has regulations on controlling imports of tobacco products and prevention of tobacco smuggling.

The Tobacco control law and guiding sublegal documents for implementing the Law also stipulate clearly that it is forbidden for people under age 18 years to use tobacco products, or to sell or buy products for people under age 18; it is also forbidden to sell tobacco products in vending machines.

Information, education, communication on harm of tobacco use

The Tobacco control law considers IEC to be an important measure for preventing and controlling harm of tobacco use and stipulates specific IEC responsibilities for various ministries and sectors including the Ministries of health; information and communication; culture, sports and tourism; industry and trade; education and training; the people's committees in various localities and the Fatherland front at all levels.

The Ministry of Health, in collaboration with VINACOSH has organized many conferences, seminars and discussions to disseminate the Law on tobacco control and related sub-legal documents to many different groups, including ministries, sectoral agencies, mass organizations, political and social organizations and localities. Tens of thousands of booklets were distributed to introduce the Law on tobacco control and a question and answer book about the Law on tobacco control along with hundreds of thousands of pamphlets and posters, hundreds of DVDs providing IEC about the Law on tobacco control were printed and supplied to various ministries, sectoral agencies and localities. The Ministry of Health also collaborated with the Youth Union to launch an IEC campaign to try to reduce tobacco use, organized mobile phone message campaigns and campaigns through the website <http://vn0khoithuoc.com/> to support implementation of the Law on tobacco control. They also organized song-writing, photo competitions and posters promoting "Smoke-free life" [183].

IEC activities about tobacco control were implemented in different diverse forms such as IEC in the mass media including VTV1, O2TV, Vietnam News Agency, Voice of Vietnam. Hundreds of news articles were published to communicate through written and internet news.

Meetings were organized on the occasion of World No Tobacco Day and the national no tobacco week. Competitions about people's understanding about tobacco, performances to communicate about harm of tobacco use have been implemented by different ministries, sectors and localities. Signs, posters on harm from tobacco were posted on traffic routes, in residential quarters in urban and rural areas [184].

Not only the different sectors, but also different localities that have been studied, mass organizations and socio-political organizations such as the Youth Union, Women's Union, Veteran's Union, have also actively participated in IEC activities on tobacco control. Many organizations like Health Bridge Canada, the Public Health Association, the Hanoi School of Public Health have implemented research studies on the smoking situation and tobacco control. Advice and technical support from different projects have piloted the development of smoke-free environment.

Regulating technical standards for cigarette products

Vietnam has also put in place regulations on hygiene and safety standards for tobacco products (Decision No. 02/2007/QĐ-BYT) and the Ministry of Health is completing a draft regulation regarding the maximum amount of nicotine and tar allowed in tobacco products. National technical standards on cigarettes are being completed by the Ministry of Health and will be issued in the near future.

Regulations on penalties for violations of tobacco control regulations

The Law on tobacco control stipulates the responsibilities of different ministries, sectoral agencies and localities for imposing sanctions on violations tobacco control legislation. Four decrees have been issued in 2013 including Decrees 81, 158, 176 and 185 related to handling violations of tobacco control legislation related to various issues including production, distribution, smoking in public places, etc.

Regulations related to finance for activities to prevent and control harm from tobacco use

The Tobacco control law stipulates the establishment of the Tobacco control fund from mandatory contributions of cigarette manufacturers and importers in the amount of 1 percent of the price used for imposing the excise tax starting on 1 May 2013, and increasing to 1.5 percent on 1 May 2015 and 2 percent as of 1 May 2019.

1.3. Difficulties and challenges

Tobacco control policies and strategies still have shortcomings

Even though the Law on tobacco control was enacted, some regulations and sanctions in sub-legal documents are having inadequate deterrent effect, or are in conflict with each other in terms of functions, tasks or are infeasible. For example, regulations on handling administrative violations on tobacco control related to the four Decrees (81, 158, 176 and 185) implemented by nine different units with authority to impose sanctions, including: People's committee chairmen at all levels, health inspectors, market management, police, border police, coast guard, navy, tax agency and finance inspector. At the same time the guiding documents are still somewhat general, unfocused, leading to difficulties in imposing penalties. Banning smoking in public places is only being applied for cigarettes, but not for pipe tobacco smoking.

In Vietnam, the tax policy to raise consumer prices of tobacco products to discourage consumption has improved with the increased tax rates that will apply with the new Law on special consumption tax approved late in 2014, however even these increases will not raise retail sales prices of cigarettes to an adequately high amount as recommended by WHO. WHO recommends the tax should account for 65 to 80 percent of retail price of tobacco products [185]. With Vietnam's current excise tax rate of 65 percent, 1 percent tobacco control fund fee and VAT of 10 percent, taxes accounts for only about 45.2 percent of retail prices (for domestically produced cigarettes. With the increase in excise tax to 75 percent and tobacco control fund fee to 1.5 percent, the tax share of retail price will increase only to 48.4 percent. Then in 2018, when the excise tax rises to 85 percent and the tobacco control fund fee to 2 percent, the tax share will increase to only 51.4 percent. To achieve WHO recommended tax levels, the excise tax would have to be set at 155 percent.

Retail prices for tobacco products in Vietnam are lower than several countries in the Southeast Asia region including even Indonesia, a country that has not ratified the Framework convention on tobacco control [186]. Despite the increases in tobacco taxes, tobacco prices have declined 5 percent between 1995 and 2006. The number of cigarettes smoked per day among smokers increased from 9.6 to 13.5 between 1995 and 2010. Average annual spending on cigarettes per smoker increased from 49 USD to 86 USD, however the annual rate of growth in cigarette spending has been lower than overall economic growth and household purchasing power, so the taxes are not having the desired impact of increasing the cost of smoking to households [180]. Increasing the tobacco excise tax is facing pressure from tobacco manufacturers in Vietnam, which provide revenues to the state budget in the amount of 14 trillion VND per year and provide jobs for 20 000 industrial workers and 200 000 farmers [187].

Accession to the Trans Pacific Partnership agreement (TPP) is oriented towards comprehensive free markets, and elimination of 100 percent of import taxes for cigarettes, which would make imported cigarettes even cheaper, increasing access and use of cigarettes. If no effective measures are put in place, accession to TPP may impede implementation of the goal of reducing the need for tobacco combined with controls to gradually reduce supply of cigarettes. This requires consideration in the TPP negotiations, as well as preparation of campaigns and policies to cope with it effectively.

Organization, leadership and implementation are still limited

Results of monitoring implementation of the Law on tobacco control by the Social Affairs Committee of the National Assembly in Ben Tre, Tien Giang and Quang Ninh provinces indicated that localities appear to be limiting their efforts to issuing of policy documents and organizing some superficial activities such as mass media IEC and distributing IEC materials. Authorities at all levels, leaders of government agencies and organizations have not emphasized implementation of the Law, and even posting "no smoking" signs in government offices in the communes has not been implemented stringently.

IEC work on the Law on tobacco control is mainly focused on central channels for IEC with very modest amounts of broadcast time, while IEC activities in the localities are limited. Because of this, the terms of the Law on tobacco control have not been widely disseminated in the community, awareness of the population about the Law is still limited, and even some government officials and leaders, and inspectors working in this area do not fully comprehend the contents of the Law.

Compliance with the Law on tobacco control among some of the population is weak, yet inspections and checking on implementation of the Law have not been adequately stringent, particularly issues related to smoke-free areas.

The organization of implementation of methods for counseling to quit smoking and nicotine replacement therapies has not yet received adequate attention. No effective models have been developed for counselling on quitting smoking; the state has not been able to regulate facilities that have sprung up to help people quit smoking; electronic cigarettes are still being advertised widely on the internet even though effectiveness, quality and safety have not yet been verified [188].

Violations in tobacco control regulations are still widespread

Violations in advertisements at point of sale are still prevalent

A survey of the Hanoi School of Public Health at 1530 cigarette sellers in 10 provinces in 2009 found that 95.4 percent of cigarette sellers violated regulations banning advertisements and marketing of cigarettes, most commonly by displaying more than the amount allowed (91.2 percent), the display cupboard or kiosk was in the colors of the tobacco brand (41.5 percent), etc. [189]. Violations do not seem to be declining, and in fact have increased. A similar survey in 2011 indicated that 58.1 percent of cigarette sellers violated at least one regulating banning advertisements, 35.8 percent of sellers violated both advertising and marketing bans. A high proportion of cigarette sellers with mobile carts violate advertising bans, with 90 percent violating regulation allowing only one pack of each brand to be displayed, nearly 36 percent of sellers violated regulations prohibiting multiple displays of different brands, 33 percent sold packs smaller than 20 cigarettes and 5.6 percent gave gifts to reward consumers for buying cigarettes [190]. A survey at the beginning of 2013 indicated that 100 percent of points of sale for tobacco products in HCMC, Khanh Hoa and Hai Phong provinces had violations of regulations banning display of more than one pack/carton of a given brand of cigarettes [191].

Loose control over tobacco sales

Ease in buying cigarettes is one cause of high smoking prevalence. About 98.1 percent of male youths, when asked, indicated they know they can buy cigarettes easily anywhere [164]. The ban on cigarette sales to people under age 18 is seldom complied with because government agencies are unable to control the retail sale of cigarettes. Licenses are only required for wholesale sale of tobacco products. Cigarettes are sold everywhere, and marketers inviting people to try out new brands of cigarettes are still evident. In Vietnam the environment still makes it easy for adolescents to access cigarettes.

Smuggled cigarettes are still abundant in the market. In most places, especially urban areas, consumers can purchase smuggled cigarettes. Estimates by Vietnam General Tobacco Corporation (VINATABA) indicate that cigarette smuggling is on the rise. In 2013 they estimated smuggled cigarettes in the amount of 930 million packs, or about 22.2 percent of the market, leading to losses of about 7 trillion VND in tax revenues and 400 million USD in international currency reserves. It is estimated that in 2014, smuggled cigarettes will account for 25 percent of the market.

Smoking in public places is still widespread

Smoking continues within government offices, especially in the corridors and entryways of the workplace and in the courtyards and parking lots, since areas reserved for smokers in the workplace are not yet guaranteed [192]. Although there are regulations banning smoking in public places, it remains widespread; many people are unaware of these regulations, while implementing agencies are facing difficulties in handling violations. Up till now, less than 10 people have been fined for smoking in areas where it is banned.

A survey of the Public Health Association in Hanoi, Thai Binh, Dong Thap, Ha Tinh and Khanh Hoa provinces indicates that even though the ban on smoking in government offices, schools, hospitals and other public places is supported by the leadership and staff, violations are still widely detected: 92 percent of train stations and bus terminals; 74.7 percent of medical facilities; 63.8 percent of schools and 37.4 percent of government offices. Reasons for violations include difficulties in quitting smoking (53 percent), no place reserved for smokers to smoke (36 percent) or find that nobody is penalizing violations (32.4 percent) [181].

1.4. Priority issues

- There is no single integrated management agency or unit that has the ability to mobilize multiple sectors and the whole society to collaborate effectively on tobacco control. The main duties are still undertaken by the health sector, while the role of VINACOSH is somewhat limited to policy advocacy and financial mobilization. The special consumption tax remains low keeping tobacco product retail prices very affordable to consumers.
- The information system and monitoring, surveillance, checking and evaluation of tobacco control activities are still limited, data gathering is not yet implemented as a regular activity and continuously; there are no readily available sources of information at one source, and data are hard to access.
- Activities of other ministries and sectors and of the localities are still mainly focused on issuing instructions and organizing internal IEC on policy; there is a lack of concrete implementation measures on the ground and the model for inter-sectoral cooperation is ineffective (between trade/industry sector and health sector for regulation of production and trade; between market management and the policy with health inspectors for inspection and imposing penalties).
- Inspections, checking and imposition of sanctions have not been implemented stringently, the consequence is that violations are still widespread, such as people smoking in places where it is banned, advertising at point of sale and selling cigarettes to people under age 18 years.
- Community awareness about the Tobacco control law is low, people's compliance with the Law is still weak, while communication about tobacco control has not yet been implemented deeply and broadly, treatment of cases of violations have not yet served as a deterrent.

1.5. Recommendations

See details in Section 5 of this chapter.

2. Control of the harmful use of alcohol

2.1. Objectives

The objective for control over harmful use of alcohol is stated in the National policy to control harmful use of alcoholic beverages to the year 2020.³⁴

General objective

Prevent and mitigate harm to community health and law and order from consumption of alcoholic beverages in order to protect community health and contribute to stable and sustainable socio-economic development.

Specific objectives

- By 2020, develop and complete a set of policies and laws on prevention and control of harmful use of alcoholic beverages;
- Gradually reduce and eventually eliminate the circulation in the market of alcoholic beverages that do not meet quality standards;
- Reduce the rate of growth in annual alcoholic beverage consumption (measured in terms of pure alcohol) per adult (aged 15 and older) from 12.1 percent for the period 2007-2010, down to 10 percent in 2013-2015 and 6.5 percent in the period 2017-2020;
- Prevent and ban access to and use of alcoholic beverages among people under age 18; ban alcohol use before and during work hours, during lunch breaks during on-call duty and in the workplace among government officials and staff, workers and among the armed forces;
- Prevent drivers from using alcoholic beverages, prevent domestic violence and disruptions to public order related to use of alcoholic beverages.
- By 2016, 70 percent of the population will have been exposed to IEC on the harmful effects of alcohol consumption, especially information on diseases caused by or exacerbated by alcohol use, and 50 percent of the population should have increased awareness of these issues; by 2020 the respective targets are 80 percent and 60 percent of the population.
- By 2016, 30 percent of alcoholics will be diagnosed, 25 percent of alcoholics will receive counselling and rehabilitation treatment in the community, 20 percent of alcoholics will be treated for chronic diseases related to alcohol use; by 2020 the respective targets are 50 percent, 40 percent and 30 percent.

2.2. Results of implementation

Policy development

Since 1954, President Ho Chi Minh issued a presidential order on control of production and use of alcohol. Up till the present, the National Assembly has issued several laws with

³⁴ Prime Ministerial Decision No. 244/QĐ-TTg dated 12 February 2014.

contents related to limiting production, distribution, consumption and use of alcoholic beverages. The Government, ministries and sectoral agencies have also issued various decrees and circulars guiding implementation of laws related to preventing and controlling harmful use of alcohol.

Most recently, on 12 February 2014, the Prime Minister signed Decision No. 244/QĐ-TTg issuing the National policy on control of harmful use of alcoholic beverages to the year 2020. This policy was developed based on the perspective that “the State does not encourage consumers to use alcoholic beverages, the people have the right to protect themselves from negative effects of alcohol use; production, distribution and use of alcohol is comprehensively and uniformly controlled in a way that is appropriate for requirements of socio-economic development with seven concrete objectives and five groups of measures to implement those objectives.

Thus, Vietnam has substantial legislation related to activities of production, trade, sales and use of alcoholic beverages, including priority interventions for control of harmful use of alcoholic beverages according to WHO recommendations. Policies and strategies related to prevention and control of harmful use of alcohol include the following:

Policies related to reducing demand for alcoholic beverages

Imposition of excise taxes on alcoholic beverages

In Vietnam, alcoholic beverages are included in the group of goods subject to excise taxes. According to regulations in the Law on excise taxes No. 27/2008/QĐ12, Decree No. 26/2009/ND-CP and Decree No. 113/2011/ND-CP, the level of tax imposed on alcohol under 20 degrees³⁵ is 25 percent, and for alcohol at or above 20 degrees and beer it was 45 percent (before 1 January 2013) and 50 percent as of 1 January 2013. The revised Law on special consumption tax intends to increase tax rates for beer and alcohol above 20 degrees to 65 percent, while for alcohol less than 20 degrees it will increase to 35 percent as of 1 July 2015.

Ban on use of alcoholic beverages for some groups

Starting in 1996, the Prime Minister issued Directive No. 351/TTg banning use of alcoholic beverages during working hours and drunkenness in public places. Prime Ministerial Directive No. 05/2008/CT-TTg dated 31 October 2008 on improving effectiveness of working time among government staff and officials also stipulated a ban on alcohol use among this group before and during working hours, including during the meal break between shifts on working days or on-call days.

Policies to reduce supply of alcoholic beverages

Limit advertising and direct marketing of alcoholic beverages

The Law on Advertising No. 16/2012/QĐ13, which came into effect as of 1 January 2013, stipulated that alcohol 15 degrees or more is a product for which advertising is banned in any form (Article 7, Section 3). Article 22 of Decree No. 94/2012/ND-CP also mentions illegal advertising and promotion of alcohol: sponsorship of activities linked with alcohol advertising, use of alcohol as an award in competitions, except competitions between alcohol products, are violations of legislation on production and distribution of alcoholic beverages.

³⁵ In Vietnam degrees indicates percentage of alcohol by volume.

Limit availability of retailed alcoholic beverages

According to Decree No. 94/2012/ND-CP and Ministry of Industry and Trade Circular No. 39/2012/TT-BCT, alcohol belongs to the group of goods whose distribution is restricted by government; organizations and individuals who produce or distribute alcohol must obtain a license. The issuing of licenses for alcohol production or distribution is limited at the district level to not more than 1 license for retail sales of alcohol per 1000 people, in the province it is limited to not more than 1 license for wholesale alcohol distributor per 100 000 people and nationally it is limited to not more than one license for an alcohol distribution enterprise per 400 000 people. Decree 94/2012/ND-CP also stipulates a ban on sales of alcohol to people under age 18 and prohibits sale of alcoholic beverages through vending machines or the internet.

Policies on alcohol production and imports

In 2009, the Ministry of Industry and Trade approved the Master plan for development of the alcohol, beer and beverage industry to the year 2015 and a vision to the year 2025; according to this, the amount of alcoholic beverages to be produced by 2015 would reach 4 billion liters of beer, 188 million liters of industrially produced alcohol and by 2025 6 billion liters of beer and 440 million liters of industrially produced alcohol.³⁶

The Ministry of Health has issued regulations on food safety and hygiene related to alcohol and beer: Decision No. 3542/2000/QD-BYT on food safety standards for alcohol and Decision No. 1283/2004/QD-BYT stipulating routine techniques for detecting methanol contamination in alcohol.

In 2013, the Ministry of Science and Technology issued Decision No. 2338/QD-BKHCHN on the Vietnamese standards for alcohol and beer including: TCVN 6057:2013 for canned beer, TCVN 7042: 2013 for draught beer, TCVN 7043: 2013 for rice wine, TCVN 7044: 2013 for liqueurs, TCVN 7045: 2013 for wine, TCVN 9779:2013 for distilled spirits.

Policy related to mitigating harm from alcoholic beverage use

IEC on preventing harmful use of alcoholic beverages

There are many policy documents that discuss IEC about harm from use of alcoholic beverages, especially in relation to government offices and schools.

The Law on youth No. 53/2005/QH11 dated 29 November 2005 stipulates that youth organizations are responsible for advocating to youth not to become addicted to alcohol and not to drink until intoxicated (Article 21) and “the family has responsibility to manage and educate their youth from age 16 to 18 years to not drink alcoholic beverages of 14 degrees or higher (Article 29).

Decree No. 94/2012/ND-CP assigns responsibility to provincial people’s committees to implement IEC to increase awareness of the people about the risks and harm of alcohol use at harmful levels (Article 29).

In 2013, the Prime Minister issued Decision No. 2043/QD-TTg approving the Project on IEC for traffic safety for the period 2013-2015, including contents related to the harm of alcohol use on health and social safety.

³⁶ Ministry of Trade and Industry Decision No. 2435/QD-BCT dated 21 May 2009.

Decision No. 244/QD-TTg of the Prime Minister also considers IEC as an important measure for reducing harm from alcohol use with many forms and for many different target audiences.

Detoxification and treatment and rehabilitation of alcoholism

The Law on domestic violence (No. 02/2007/QH12) also stipulates that alcoholics are a target group in need of attention for family counselling to prevent domestic violence. It assigned responsibility to the Ministry of Health to issue a protocol for treatment of alcoholism. The National strategy on prevention and control of harmful use of alcohol to the year 2020 considers alcohol rehabilitation and treatment of alcoholics as one of the goals of the strategy and one of the measures to achieve the other goals. The Ministry of Health issued Decision No. 5140/QD-BYT dated 23 December 2013 issuing the guidelines on diagnosis and treatment of alcohol-related mental disorders.

Regulations on penalties for administrative violations related to production, distribution and use of alcoholic beverages

Decree 94 reserves an entire chapter (Chapter IV) to stipulate the violations and penalties related to production and distribution of alcohol. Decree No. 185/2013/ND-CP of the Government dated 15 November 2013 includes 12 articles stipulating concretely the penalties for violations related to production and distribution of alcohol with maximum fines up to 70 million VND. Fines of 500 000 to 1 million VND are imposed on violators who sell alcohol to minors under age 18. The level of fines increases to 50 million VND for marketing alcohol or using alcohol or beer to market to people under age 18 years.

The Law on road traffic that came into effect on 1 July 2009 stipulates a complete ban on use of alcohol for people driving automobiles, and sets a low limit for blood alcohol levels among motorcyclists. The Government also issued Decree No. 34/2010/ND-CP, Decree No. 71/2012/ND-CP revising Decree 34 and Decree No. 171/2013/ND-CP stipulating penalties for administrative violations in the area of road traffic and railroad traffic, including specific and heavy fines for driving while intoxicated. Regulations banning use of alcohol while participating in traffic, if implemented stringently, will contribute to reducing harmful use of alcohol.

While there is a substantial amount of legislation aimed at control over various aspects of harmful use of alcohol, nevertheless, there remain some gaps in legislation (Box 2).

Box 2: Policy gaps related to control of harmful use of alcohol

- There is no national policy on control of harmful use of alcoholic beverages.
- There are no time limits (day, hours) for when alcoholic beverages can be sold; there are no bans on selling alcohol to intoxicated individuals.
- There are no regulations limiting sponsorship related to alcohol products.
- There are no mandatory regulations on health warning labels for alcoholic beverage products.
- Funds have not been allocated for control of harmful use of alcoholic beverages; there is not yet any support for organizing community-level alcohol rehabilitation.
- No national system is in place for monitoring use of alcohol and control of harmful use of alcohol.

Source: Country Profiles in Global status report on alcohol and health 2014. WHO. Geneva. 2014 [153].

Organization and leadership for implementation

IEC on preventing harmful use of alcohol has been implemented through the mass media including television, radio, print and internet news; through organization of conferences, seminars, meetings and events; and especially through youth organizations, labor union organizations, in the health sector and other sectors. For example the Ministry of Education and Training issued Directive No. 7484/BGDDT-CTHSSV on strengthening IEC about compliance with legislation about drinking and driving and harm of driving drunk; The Ministry of Defense organized a week for not smoking and limiting alcohol use in the army.

Some localities and sectors have implemented bans on use of alcohol among government staff, party members during administrative hours, lunchtime during workdays, when participating in traffic, such as Hai Phong, Nghe An, Vinh Phuc, Hanoi, Long An, An Giang, Bac Giang, Ha Tinh, Quang Nam provinces and the Central region electricity company.

The industry and trade sector has also implemented licenses for production and distribution of alcohol products for wholesalers, collaborated with related sectors to strengthen checking on production and distribution of alcohol, especially in night clubs, restaurants and bars. In order to limit retail sales of alcoholic beverages, HCMC has proposed bans on selling alcohol after 11 pm.

The Food Safety Administration (MOH) has set up eight centers throughout the country to monitor alcohol products circulating in the market. In the near future, the Food Safety Administration will pilot specialized inspections in major cities; the inspection network will be increased to strengthen surveillance. On an annual basis, the Food Safety Administration (Ministry of Health) develops and implements plans for monitoring of food safety risks, and guides specialized institutes and 63 localities to implement monitoring of food samples, including monitoring of food safety targets for alcoholic beverages circulating in the market.

The traffic police have also strengthened checks on blood alcohol levels of people participating in traffic. In the first six months of 2013, the traffic police nationally have penalized more than 24 600 drivers with blood alcohol levels higher than allowed, most driving motorcycles, with violators mainly men, aged 22 to 50 years. Checking and limiting violations of blood alcohol levels of people participating in traffic serves mainly to reduce accidents caused by alcohol, but when implemented regularly, continuously they can also indirectly contribute to reducing cumulative harm from chronic use of alcoholic beverages.

Central Mental Hospital Number 1 has set up a Department for treatment of addiction, which is involved in alcohol detoxification, and includes a website providing information guiding detoxification in general, as well as information specific to alcoholism. The website of the HCMC Mental Hospital also has an article specifically on treatment of alcoholism and alcohol-related mental illness. The Central Acupuncture Hospital also has uploaded information on support for detoxification from alcoholism.

Results of activities on prevention and control of harm from alcohol use

There are few studies assessing impact of activities to prevent harm from alcohol use in Vietnam, particularly in relation to the effects on NCDs. Statistical data generally focus on traffic accidents related to alcohol use. Statistical data from An Giang province indicates that after requiring 40 000 government officials and staff in the province to sign a form indicating

their commitment not to drink alcohol or beer during working hours or when participating in traffic, the number of accidents related to alcohol fell from 60 percent to 30 percent.

The Health Environmental Management Administration (MOH) collaborated with the Ninh Binh Provincial Health Bureau to develop a model for counselling to prevent use of alcohol when driving, implemented through three hospitals, and a model for communities safe from traffic accidents, prevention of alcohol use when driving in 2 communes in the province. Through diverse forms of IEC, signed commitments for developing a safe community and preventing use of alcohol while driving, after three months of implementation from September to November 2013, 60 percent of households were aware of the risks of drinking and driving; over 80 percent of the people did not drink and drive and traffic accidents related to alcohol fell by 10 percent.

2.3. Difficulties and challenges

Legal documents and policies

The Law preventing and controlling harmful use of alcohol has not yet been enacted. There is still a gap in regulations on production and use of beer. Financial regulations for implementing activities for prevention and control of harmful use of alcohol are not in place.

The Master plan for development of the alcohol, beer and beverage industry has not paid attention to alcohol-related harm control and reduction. The perspective for development of the alcohol, beer and beverage industry is “mobilize all resources from all economic sectors, in all forms to strongly promote production of beer, alcohol and beverages to meet the growing and diverse needs of society”, which appears to be going in the opposite direction of the efforts to control harm from alcohol use.

In general, the current policies and measures mainly focus on the goal of reducing harm from alcohol in relation to public law and order, traffic safety, but are not paying much attention to reduction of harm to health from use of alcohol, particularly reduction of NCDs related to alcohol use. There are still no regulations or concrete guidance on implementation of models for detoxification or rehabilitation, reintegration into the community of alcoholics. The organization of counselling, detoxification is not yet tightly regulated in terms of quality, safety and effectiveness.

Organization, leadership and implementation

Regulation of supply

There are still many major difficulties in control of supply, especially of beer and alcohol produced in small-scale unregulated production facilities. Annual consumption of alcohol produced in such facilities is estimated at 250 to 300 million liters per year; it is consumed by 95.7 percent of alcohol consumers and accounts for more than 70 percent of total social consumption of alcohol products. However, state management, issuing of licenses for production or distribution and enforcing proper labelling are all difficult because these products are mostly produced by small household enterprises on an intermittent basis; the households producing and distributing these products do not understand the regulations in Decree 94; many localities are neglecting enforcement of regulations in this area.

Control over counterfeit and smuggled alcohol remains ineffective, every year cases of methanol poisoning are reported. Nearly anywhere, consumers can purchase foreign alcohol products imported in hand luggage, ranging from high quality to toxic. The market management force in the localities has few officers and cannot meet the need for implementing their tasks. Little active cooperation from associations and businesses has occurred in providing information on incidents of production of substandard and counterfeit alcohol products, etc., development of standards related to artisanal alcohol production or guidance for consumers.

Little attention has been paid to regulation of beer production. Reduction in excise taxes for beer after accession to WTO has contribute to supporting the beer sector, especially small production facilities, but at the same time it has contributed to encouraging the establishment of many breweries and promoted strong growth in the beer production industry [193].

Limiting consumption

Control over alcoholic beverage demand and consumption behavior has been neglected. Sale of alcoholic beverages to youth under age 18 has not been controlled. Consumers still lack knowledge to help them choose safe alcohol products and to say no to alcohol products without clear origin or without a trademark. No measures are in place to limit drunk people from continuing to consume alcohol in restaurants and bars or to limit use of alcohol during the hour before closing time to prevent drunk driving.

IEC on prevention and control of harmful use of alcohol has been implemented by several ministries, mass organizations and localities. However these activities don't go into great depth on the substance of harm from alcohol use; for example Youth Union activities often end with consumption of alcoholic beverages.

No policy is in place regarding warnings of harm of alcohol use and alcohol manufacturing and distribution enterprises have not been mobilized to participate in warning consumers. Currently, only four units (Bia Larue, Heineken, Tiger and Bivina) have agreed to communicate warning messages through textual warnings on bottle labels, however the warning text font size on the labels is small, so consumers may not notice them.

Use of alcoholic beverages among pregnant women has received little attention. There are no regulations limiting consumption of alcohol among pregnant women. Awareness of the harm to the fetus when the mother consumes alcohol is limited, especially among ethnic minority women.

Support for detoxification and rehabilitation

Even though the Ministry of Health has issued a protocol for treatment of alcohol addiction (alcoholism), this activity has not yet been widely implemented in curative care facilities. Screening and counseling for alcoholics has not been applied regularly by health care facilities. Models for counselling on detoxification and rehabilitation and reintegration of alcoholics into the community have not been implemented. Many private detoxification facilities advertise widely but are not being regulated regarding their quality or effectiveness.

2.4. Priority issues

- There is no focal agency for managing activities; information, surveillance and evaluation are limited.

- Policies on prevention and control of harmful use of alcohol are still incomplete (there is not yet a Law on prevention and control of harmful use of alcohol; the focus of existing policies is more on acute health problems and public law and order; lack of policies on hours when alcohol is allowed to be sold; bans on selling to intoxicated individuals and lack of policies mandating warning labels on alcoholic beverages). Policies still contain many points that are inappropriate, or lack guidance for implementation (such as managing quality of artisanal alcoholic beverages, alcohol rehabilitation), making it difficult to apply the policies in reality. Inadequate funds are available for implementation of activities.
- Inter-sectoral collaboration on control of production, distribution, consumption of alcoholic beverages is facing many difficulties (control of origin and quality of alcohol products produced in small-scale household enterprises, alcohol demand and consumption behavior, including among government staff, purchase of alcohol by people under age 18).
- Awareness of harm from alcohol use and compliance with regulations are both limited, while IEC to encourage people to limit alcohol consumption is still quite general, and difficult to implement.
- Organization of counselling on detoxification, treatment of alcohol dependence and rehabilitation of alcoholics have received inadequate attention: Guidelines are inadequate for screening of alcoholism, for community-based detoxification models; inadequate resources and supporting policies.

2.5. Recommendations

See details in section 5 of this chapter.

3. Promotion of an appropriate diet

3.1. Objectives

Prime Ministerial Decision No. 26/QĐ-TTg approved the National nutrition strategy for the period 2011-2020 and a vision to 2030, which lists the goals to the year 2020 as:

General objective

By 2020, meals eaten by the population will be improved in terms of quantity, balance, quality and food safety; child malnutrition, especially stunting, will be strongly reduced, contributing to increase stature and physical fitness of the Vietnamese people; overweight and obesity will be effectively controlled, contributing to limiting chronic NCDs related to nutrition.

Specific objectives related to NCDs

- Improve nutritional status of mothers and children: Control the rate of overweight in children under five years of age to below 5 percent in rural areas and below 10 percent in urban areas by 2015 and sustain this through the year 2020.
- Gradually achieve effective control over overweight-obesity and risk factors of chronic NCDs related to nutrition in adults.

- Control obesity in adults to below 8 percent in 2015 and maintain below 12 percent in 2020.
- Control the proportion of adults with high total blood cholesterol (>5.2 mmol/liter) below 28 percent by 2015 and maintain at levels below 30 percent in 2020.
- Strengthen capacity and improve performance of the nutrition network in the community and health facilities.

3.2. Results of implementation

Policy development

Although Vietnam does not have policies or strategies on nutrition to serve goals of preventing and controlling NCDs, nevertheless there are strategic policies in general about nutrition, and recommended guidelines for appropriate nutrition.

National nutrition strategy evolution over time

The National nutrition strategy for the period 2001-2010 was issued in 2001 with the overall objective of “Ensuring that by 2010, the nutritional status of the population will have improved considerably. Limit nutrition-related health problems from occurring.”³⁷

In 2012, the Prime Minister approved the National nutrition strategy for the period 2011-2020 and a vision to 2030,³⁸ with the goal of gradually achieving effective control over obesity and risk factors of some chronic NCDs related to nutrition in adults. This strategy also mentioned measures related to NCD prevention and control such as: Implement IEC activities in the mass media in order to strengthen understanding and practice for healthy diet, especially for prevention of stunting and controlling overweight, obesity and nutrition risk factors for chronic NCDs for all groups in society; and apply experience and scientific advances in nutrition for the prevention of obesity, metabolic syndromes and chronic NCDs related to nutrition.

Dietary guidelines and recommendations

The Ministry of Health has issued Decision No. 05/2007/QD-BYT in 2007 on “Ten recommendations for appropriate nutrition for the period 2006-2010” and Decision No. 189/QD-BYT in 2013 on “Ten recommendations for appropriate nutrition till 2020” to serve as the basis for health facilities to implement IEC on nutrition in order to improve knowledge and practice of rational nutrition among the population. These recommendations focus on: recommendations for diet consisting of diverse foods; combining animal and plant protein and fat; using iodized salt and limiting the amount of salt; consuming vegetables and fruits every day, ensure food safety; drinking sufficient clean water; breastfeeding babies right after birth, exclusive breastfeeding for the first six months and continuing to breastfeed until 24 months of age; consumption of milk products for children after six months and for adults; increasing physical activity; limiting consumption of sweet foods and drinks, carbonated beverages, alcohol, beer and tobacco.

In order to strengthen nutrition care for patients, the Ministry of Health issued Circular

³⁷ Prime Ministerial Decision No. 21/2001/QD-TTg dated 22 February 2001.

³⁸ Prime Ministerial Decision No. 226/QD-TTg dated 22 February 2012.

No. 08/2011/TT-BYT requiring hospitals from district to central level to set up a clinical diet and nutrition department. According to the circular, hospitals must implement clinically indicated diets to serve therapeutic purposes for patients admitted to the hospital, and in this way, to also educate patients and their family members on appropriate diet for the medical condition, ensure food hygiene and safety, prevent both communicable and NCDs.

Inter-sectoral policies related to nutrition

The Law on food safety was issued in 2010, including “encouragement of food production and distribution facilities to achieve high quality and ensure safety of their food” and to implement diverse forms of IEC to improve the population’s awareness of safe food consumption. The Government has also issued Decree No. 38/2012/ND-CP in 2012 stipulating details of some articles in the Law on food safety.

Appropriate care and nutrition for children contributes to forming healthy dietary habits in the future, thus indirectly reducing risks of NCDs in adults. Decree No. 21/2006/ND-CP and Joint Circular No. 10/2006/TTLT/BYT-BTM-BVHTT-UBDSGDTE stipulate regulations on distribution and use of nutritional supplements for small children, focusing on information, education, communication on taking care of small children, encouraging breastfeeding, banning any forms of IEC that encourage bottle feeding or discourage breastfeeding. The Prime Minister signed Decision No. 149/2006/QD-TTg approving the Project “Development of pre-school education for the period 2006-2015” and Decision No. 239/QD-TTg approving the Project on universalizing preschool for children under 5 years of age for the period 2010-2015. These policies are related to ensuring nutrition for children before they reach school age.

In 2012, the Government issued Decision No. 01/2012/QD-TTg on some policies to support application of good agricultural practice in the agricultural, forestry and fisheries sector. The Ministries of Planning and Investment, Agriculture and Rural Development and Finance have issued a joint Circular No. 42/2013/TTLT-BNNPTNT-BTC-BKHDT guiding implementation of Decision No. 01/2012/QD-TTg. This policy is related to encouraging the practice of producing agricultural products in a way that is appropriate with technical standards, ensuring food hygiene and safety and preventing disease.

Organization and leadership in policy implementation

The Ministry of Education and Training has included contents on health and nutrition in the program for education and care of children in preschools with the goal of reducing malnutrition below 15 percent and limiting obesity to below 5 percent of pre-school children by 2015.

The Ministry of Health has also organized the launch of World Breastfeeding Week from 1 to 7 August 2014 and the National Nutrition and Development Week in October each year with different themes. The Ministry has also participated in the innovation of friendly hospitals and implemented guidance for ten steps for successful breastfeeding in order to support and promote breastfeeding and the right way to breastfeed. The Ministry has organized various forms of IEC about the ten recommendations for appropriate nutrition, and has helped to set up clinical nutrition departments in hospitals.

Regarding training of nutrition personnel, since 2013 the National Institute of Nutrition has issued the three-month Program for school nutrition training of teachers and staff of

preschools in order to provide the most up-to-date and comprehensive knowledge on nutrition care and food safety and hygiene for pre-school age children. Also in 2013, the Hanoi Medical University has begun to implement bachelor's degree training in community nutrition in order to provide highly skilled nutritionists to medical facilities, thus contributing to improving the quality of nutrition for patients and the population.

Some localities like HCMC have issued plans for implementing the National Nutrition Strategy for different periods including 2001-2005, 2006-2010, and 2011-2015. The localities have also organized meetings to promote the Nutrition and Development Week on an annual basis.

Hanoi and HCMC have approved projects for production and sale of safe vegetables³⁹ (Decision No. 2083/QD-UBND in Hanoi and Decision No. 1494/QD-UBND in HCMC). In Hanoi, by 2012, the municipality had 154 facilities in 94 communes that met standards for producing safe vegetables with a total cultivated area of 3800 hectares. Districts also set up 31 projects to develop safe vegetables, focusing on a cultivated area of 2080 hectares. By 2013, the cultivated area of safe vegetables will expand to 4500 hectares, distributed in 166 communes. The whole municipality has 35 supermarkets and 58 stores certified as meeting conditions to distribute safe vegetables. In addition the municipality has identified 300 distribution points for safe vegetables in residential areas, including 50 distribution points that have already been put into operation [194].

In HCMC, by the end of 2012, there were 182 organizations and individuals certified as meeting standards of safe vegetables with a total cultivated area of 90.16 hectares and production volume of about 11 450 tons per year. The municipality has set out the target by 2025 for the total cultivated area of safe vegetables to reach 3817 hectares with total volume of production to be 471 580 tons per year.

The Ministry of Finance is considering imposing excise taxes on non-alcoholic sugar-sweetened beverages, on the basis of evidence from studies that warn of the great harm from use of sugar-sweetened beverages on the health of consumers, such as diabetes and obesity, but a link with gastro-esophageal reflux disease and heart disease [195], [196].

Results of the national nutrition census in 2010 indicate that the structure of energy sources in diet (ratio of carbohydrates: fats: protein) among families and children has changed towards greater balance compared to 2000 [166].

3.3. Difficulties and challenges

The National Nutrition Strategy to the year 2020 still puts greater emphasis on measures to prevent under nutrition, although reducing child obesity is one of the tasks that is emphasized in the introduction. There are only two measures proposed related to prevention and control of NCD risk factors. These are education and spreading knowledge about nutrition to the whole population and prevention and control of chronic diseases related to nutrition.

In general, the main measures in place still focus on IEC and spreading general knowledge of appropriate diet. However, they do not recommend specific standard daily diets. Consumers still lack information on how to eat to ensure proper nutrition, what foods to choose, where to purchase foods to ensure food safety and avoid disease.

³⁹ In Vietnam there is a distinction between regular fruit and vegetables, safe (clean) fruit and vegetables and organic fruits and vegetables. Safe fruit and vegetables are not necessarily organic, but they do require that certain standards be applied related to agricultural chemical use.

Highly cost-effective interventions recommended by WHO such as encouraging people to reduce salt intake, reduce salt in foodstuffs, replace trans fatty acids with unsaturated fats have not yet received adequate attention, and there are no concrete measures for promoting and supporting implementation of these measures in a healthy diet for the population.

Nutritionists recommend that trans fatty acids in foodstuffs should not exceed 2 percent of total fat. Currently Vietnam does not have any standards regulating the amount of trans fatty acids in food, nor does it have regulations requiring that enterprises producing foodstuffs must record information on the proportion of trans fatty acids out of total fat on the product labels. Vietnamese consumers have also not received adequate warnings about presence or harm of trans fatty acids in food. However, a survey of the Center for laboratory analysis services in HCMC in 2010 found that in 34 samples of instant noodles, 38 percent of samples had trans fatty acids, three of which had trans fatty acids exceeding recommended levels [197].

No health impact assessment of policies, projects, socio-economic development plans has been made. The master plan for production and distribution of beverages and fast food, including instant noodles, is still not linked with the goal of promoting healthy diet to prevent NCDs. Monitoring of quality and technical standards for fast food has not been implemented stringently.

The scale of projects on production and sale of clean vegetables and safe food in the localities has been modest, mainly focused on the objective of ensuring food safety rather than healthy diet to prevent NCDs. No measures are in place to support and encourage production, distribution of clean and safe food so these foods are more readily available for consumers. Quality of facilities distributing food stuffs have still not been tightly regulated, leading to lack of confidence among consumers in their products.

At the same time, contamination of food from toxic chemicals without clear origin is at alarming levels, in production, storage, distribution, and processing. The mass media continuously present news on use of chemicals to speed up growth of vegetables, or of livestock; use of toxic chemicals to preserve seafood, meat, fruit; use of chemicals to process spoiled meat so it looks fresh, fake foods, leading to consumers being afraid, and losing confidence in goods being sold in the market. The response of state management agencies to this situation has been slow, so consumers do not feel that food safety is assured.

3.4. Priority issues

- Contents of IEC on healthy diet are still very general, and do not focus on important issues like reduction in consumption of salt, sugar and foods containing trans fatty acids. Awareness among the people about foods that are beneficial to health and healthy diet is somewhat limited, especially in relation to information about the amount of salt and fat in food;
- Currently there are no policies or technical measures aimed at controlling salt and trans fatty acids in foods, or limiting production and distribution of foods with high salt, sugar or fat content;
- Regulations for a uniform set of financial and social sanctions to encourage and support production, trade, distribution of healthy foods that are beneficial to health, for example preferential tax rates, subsidies for clean vegetable and food production and distribution;

implementation of health impact assessments when reviewing new policies, projects and plans for socio-economic development.

- Contamination of food due to use of toxic chemicals in the production, preservation and processing of food is at alarming levels, and is difficult to control.

3.5. Recommendations

See details in section 5 of this chapter.

4. Strengthening and promotion of physical activity, physical fitness and sports

4.1. Objectives

Currently Vietnam lacks a concrete strategy aimed specifically at strengthening physical activity for NCD prevention. The most relevant existing policy on physical activity is the Project for development of physical fitness and stature of Vietnamese people for the period 2011-2030, which has the following goals:

Overall objective

Develop physical fitness and stature of the Vietnamese people over the next 20 years to improve quality of human resources, serve industrialization and modernization of the nation; gradually improve health, fitness, stature and increase healthy life expectancy of the Vietnamese people.

Specific goals (relevant for NCD prevention and control)

Strengthen health care for children, pre-adolescents and adolescents in order to minimize cardiovascular disease, obesity, diseases causing disorders in physical stature, and contribute to improving quality of life.

4.2. Results of implementation

Policy development

The idea of encouraging the whole population to participate in physical fitness and sports is evident in the slogan “strong people, prosperous country” and has been apparent since the founding of the nation. After the decision to establish the Central fitness house, President Ho Chi Minh issued a call for the whole population to get physical exercise and to consider “participating in physical exercise and improving one’s health is the duty of a patriot” and “hope that all of our people try to get physical exercise”.

On the basis of these perspectives, development of sports and physical fitness have always received attention from the nation’s leaders, guidance from the Party, the Government and the State. On the part of the Communist Party, most recently the Politburo issued Resolution No. 08-NQ/TW dated 1 December 2011 on strengthening leadership of the Party, creating a strong development step on fitness and sports to the year 2020.

On the part of the government, there are at least six laws enacted in different fields that include contents related to developing fitness and sports to improve physical fitness and health of the population, including: The Law on fitness and sports enacted in 2006 (No. 77/2006/QH11); the Law on protection of the people's health issued in 1989; the Law on education enacted first in 1998, then a new law in 2006 and revised in 2009 (No. 44/2009/QH12); the Law on protection, care and education of children enacted first in 1991, and the second time in 2004 (No. 25/2004/QH11); the Law on youths enacted in 2005 (No. 53/2005/QH11); Law on the elderly enacted in 2009 (No. 39/2009/QH12). The common point of these laws is that they all mention the benefits of physical exercise and sports on health, the right of the people to get physical exercise and concern about physical development. In addition, they assert the responsibility of government agencies to communicate, encourage, organize and facilitate conditions for all different groups of the population (especially children, youth and the elderly) to get physical exercise to promote health. The Law on the elderly and Decree No. 06/2011/ND-CP stipulating details and guidance for implementing specific articles of the Law on the elderly, stipulates that relevant ministries and sectoral agencies have responsibility to create convenient conditions for the elderly to participate in physical activities appropriate with their health and psychological state, and to give discounts on fees charged to the elderly for participating in physical and sports activities.

On the basis of these laws, the government and related ministries and sectoral agencies have issued policies and strategies to encourage and facilitate activities for fitness, sports, physical exercise physical fitness, sports and exercise to improve health. Following the approval of the Master plan for development of the fitness and sports sector for the period 2001-2010, and programs for development of fitness and sports for the general population, including specifically at commune and ward levels, in 2010 the Government approved the Strategy for developing the fitness and sports sector for the period 2011-2020 (Decision No. 2198/QD-TTg), including the identification of physical education and sports in schools as measures to implement this strategy. Decision No. 2160/QD-TTg (2013) approved the Master plan for development of fitness and sports in Vietnam to the year 2020, and an orientation to 2030, including targets of 28 percent of the population to get regular physical exercise by the year 2015, 33 percent by the year 2020 and 40 percent by the year 2030. This decision also regulated the amount of land area to be devoted to sports fields for physical education in schools at all levels of the education system. The Ministry of Culture, Sports and Tourism also issued Circular No. 02/2009/TT-BVHTTDL guiding the organization and assessment of fitness and sports in the population in the localities.

In 2001, the Government issued Decision No. 201/2001/QD-TTg approving the Education strategy for 2001-2010 and in 2012 the Government issued Decision No. 711/QD-TTg approving the Education strategy for 2011-2020. The Ministry of Education and Training is also developing a draft decree on physical education and sports in schools, including the stance that physical education in education facilities is a mandatory education activity. On that basis, the decree also lays out regulations on the curriculum and standards for physical facilities and other conditions to ensure physical education and sports in education establishments. The draft decree also stipulates clearly the responsibility for physical education and sports activities of different ministries and sectoral agencies such as: Ministry of Education and Training, Ministry of Culture, Sports and Tourism, the Ministry of Labor, Invalids and Social Affairs, and the provincial-level people's committees. In addition, Joint circular No. 22/2013/TTLT-BGDDT-BYT mandates that nursery schools must have a playground and landscape trees; Circular No. 02/2014/TT-BGDDT also stipulates that nursery schools must meet mandatory standards of a

room for physical education of at least 60m². The Ministry of Education and Training has also set targets for 2015 to ensure that physical education teachers must have education beyond secondary level, and by 2020 to ensure that all general schools at all levels have teachers dedicated only to physical education who have graduated with a specialized degree in physical education.⁴⁰ In addition, MOLISA has also issued Circular No. 15/2013/TT-BLDTBXH dated 28 August 2013 regulating the organization of physical activities and sports for students in vocational training establishments.

Decision No. 641/QĐ-TTg approved the Project on developing physical stature and fitness of the Vietnamese people for the period 2011-2030, including the goal of strengthening healthcare for children, adolescents and youth in order to minimize cardiovascular disease, obesity, and diseases causing disorders in stature and thus to contribute to improving quality of life.

The Ministry of Health has also developed and issued 10 recommendations for healthy nutrition for the period 2006-2010 (Decision No. 05/2007/QĐ-BYT) and 2011-2020, including the recommendation for regular physical activity to maintain weight at an appropriate level.

Organization and leadership of policy implementation

The Coordinating committee office for Project 641 has been established and acts as the coordinating unit for activities of four component programs in the Project for comprehensive development of fitness and stature of the Vietnamese people for the period 2011-2030. The office has a plan for organizing many activities such as meetings, walks, song writing and logo drawing competitions for Project 641 aimed at communicating widely about the contents of the project nationwide to the whole population.

Many ministries and localities have developed plans and projects to strengthen physical exercise and participation in sports within the health sector and among youth, as well as collaborating with the labor union at all levels to intensify IEC and advocacy for union members to actively participate in physical exercise and sports competition throughout their industry or locality, and thus to encourage all people to actively participate in physical activity and sports and improve their health [198]. The Television channel O2TV has also allocated a substantial amount of broadcast time for IEC on smoking, alcohol, unhealthy diet and physical inactivity with the objective of encouraging the population to protect their own health.

On the basis of policies and strategies about fitness and sports activities, the Ministry of Culture, Sports and Tourism has and continues to develop and implement collaborations for developing physical fitness and sports with other units, including the Ministry of Defense, the Ministry of Public Security, the Ministry of Education and Training, the Committee for Ethnic Minorities and Mountainous areas, the Vietnam Federation of Labor Unions, the Woman's Union, the Central Youth Union, the Peasant's Union, the Association of the Elderly and other organizations.

The Ministry of Culture, Sports and Tourism has also launched a national movement for the whole population to participate in physical fitness following the model of the Great Ho Chi Minh for the period 2012-2020, linked and integrated into implementing the campaign for the whole population in solidarity to build a cultured life, the NTP program on developing a

⁴⁰ Ministry of Education and Training Announcement No. 1001/TB-BGDĐT conclusions made by Deputy Prime Minister Tran Quang Quy at the Conference on physical education and the movement for secondary school sports competitions for the period 2008-2012.

new countryside for the period 2010-2020, the Project on developing fitness and stature of the Vietnamese people 2011-2030, and other projects and programs of the Government on health care, environmental health. The goals of the movement for Physical fitness following the model of the Great Ho Chi Minh, have been incorporated into the Party resolutions at all levels, plans of all levels of authority, in order to focus leadership and direction for implementation.

Encouragement of physical activity and exercise has also been integrated into the strategic master plans of ministries and localities. At the beginning of February, 2014, the Prime Minister had guided the ministries and people's committees of five municipalities (Hanoi, HCMC, Hai Phong, Da Nang and Can Tho) to study implementation of projects to pilot provision of public bicycles. In Hoi An City of Quang Nam province, since 1 April 2014, nearly 2000 government staff have begun commuting to work by bicycle. The People's committee of the city also encourages the people to get around on bicycles.

Some new urban developments that have been planned in recent years, have complied with regulations on the proportion of area to be reserved for green space, parks and recreational and sports areas. Many fitness centers and sports clubs in the private sector have been established in major cities, attracting many youth and office workers to get physical exercise.

Physical education has been organized regularly and widely in schools at all levels in order to implement the comprehensive education goals for students. By the end of 2013, nationally over 90 percent of schools effectively implemented the standard physical education curriculum according to regulations; over 60 percent of schools organize regular after school sports activities for students [199]. The school sports movement has been launched, culminating in major regular competitions at each school, district, province and nationally for children in general schooling since 1984 and National university student sports congress, which have contributed to encouraging competition in sports among students.

In recent years, the sports movement among the population has begun to be developed both in depth and breadth. According to a review report of the Ministry of Culture, Sports and Tourism, up through 2013, nationally about 18.6 percent of families and 27.2 percent of the population regularly participate in physical exercise (See Table 10 in Chapter I); there are more than 40 000 sports clubs in communities. However in ethnic minority communities and mountainous areas, only about 6-8 percent of the population and about 2-3 percent of households meet standards to be considered to participate in physical exercise [198]. The elderly are particularly active in sports and physical exercise in both urban and rural areas, in forms such as badminton, table tennis, yoga, and aerobics classes.

4.3. Difficulties and shortcomings

Physical activity and sports have been mentioned in many policy documents related to several different sectors and localities, but they focus mainly on development of high-level competitive sports rather than mobilizing the participation of the community in physical fitness, health promotion. Policies to encourage physical activity are still kept within the scope of sports activities in general, without clear linkages to health sector activities, particularly prevention of NCDs.

Planning activities of ministries and localities still do not ensure consistency nor pay attention to creating convenient and safe conditions for physical activity and exercise to improve

health of the people. For example, the master plan for major cities generally lacks recreational areas for the elderly, children and youth, road construction does not always reserve area for sidewalks or lanes to encourage biking, etc. Inadequate attention has been paid to creating conditions for physical activity in the work environment.

School physical education has not received adequate attention, and is considered less important compared to other subjects. The system of facilities and fields for physical education and sports in schools are inadequate and do not meet standards. The number of physical education teachers is insufficient, and many have inadequate training, remuneration is low. After-school sports activities are still limited, and not attractive to students [200].

Policies, strategies and plans on strengthening physical activity have not been closely monitored or evaluated. Sustainable funding is lacking for promoting physical activity, while conditions to mobilize investments of society have not yet been effective; private sports clubs are still inaccessible to most of the population.

Box 3: Gaps in policies for encouraging implementation of healthy nutrition and strengthening physical activity

- There is no national policy encouraging healthy diet and strengthening physical activity.
- Activities encouraging healthy diet and increased physical activity have not been integrated into socio-economic development plans and health programs.
- There are no national guidelines for healthy diet (e.g. limiting salt intake, fat intake) or for exercise regimes for different population groups.
- The environment to encourage and support adoption of healthy diet and adequate physical activity is lacking.
- No source of funds is available for nutrition and physical fitness activities.
- There is no national monitoring and evaluation system.

Source: Global strategy on diet, physical activity and health. WHO 2004 [201]; A guide for population-based approaches to increasing levels of physical activity: implementation of the WHO global strategy on diet, physical activity and health. WHO 2007 [202]; Diet and Physical Activity for the Prevention of Non-communicable Diseases in Low- and Middle-Income Countries: A Systematic Policy Review [203].

4.4. Priority issues

- There is no information system for monitoring or supervision and evaluation of physical fitness activities for health promotion (such as exists for other risk factors).
- IEC on physical activity to prevent NCDs is not as effective as it could be. Population awareness about physical activity to improve health is still somewhat limited, especially among youth and children.
- There is inadequate convenience and lack of physical facilities to support people to get physical exercise to improve health, especially in schools at all levels and at government offices.
- Inter-sectoral efforts to encourage physical activity to promote health are lacking, including in IEC activities and city planning. Physical education in schools does not yet

meet requirements, movements for fitness and sports in the general population have not yet been widely developed.

4.5. Recommendations

See details in section 5 of this chapter.

5. General conclusions and measures to control common NCD risk factors

Prevention and control of common NCD risk factors requires inter-sectoral effort with high-level political commitment, participation of the whole society for both development of policies and organization of implementation and action. In the past few years, Vietnam has developed many policies related to controlling risk factors, but those policies are still inadequate and many problems exist in their implementation. Priorities for policy to control common NCD risk factors at present are:

- Policies to control NCD risk factors are incomplete and have many shortcomings, particularly in terms of encouraging a healthy diet and strengthening physical activity, while capacity for policy advocacy and policy formulation remain limited;
- There is no focal organization with adequate authority and capacity for inter-sectoral mobilization and coordination to effectively implement NCD risk factor control policies
- There is no system in place to adequately monitor and evaluate all risk factors and results of implementing NCD risk factor control activities;
- Awareness and practice of the people in controlling NCD risk factors remain limited.

On the basis of the analysis and assessment above, the following recommendations for control of common NCD risk factors are proposed:

Strengthen capacity for policy advocacy and formulation, gradually complete a full set of policies on NCD risk factor control.

Short term

- Learn from the experience of other countries in the region and globally about policy advocacy and formulation related to NCD risk factors.
- Ministry of Health collaborate with other sectoral agencies to review and revise to eliminate shortcomings in regulations, policies on tobacco control, and control of harmful use of alcohol (penalties for violations of regulations on smoke-free public places, management of production and distribution of artisanal alcoholic drinks; supplement regulations completely banning smoking indoors, mandatory warning labels on alcoholic beverages...)
- Develop strategies and measures for negotiating TPP accession to minimize effects of the treaty on tobacco control and prevention of harm from alcohol.

Long term

- Strengthen capacity for health sector policy advocacy, mobilize participation of ministries, sectors, mass organizations in policy advocacy and formulation for control of risk factors. Ministry of Health collaborate with other relevant sectors to advocate for passing the Law on control of harmful effect of alcohol use.
- Gradually develop and complete policies encouraging appropriate diet and physical exercise; limit production, distribution and consumption of processed foods, sugar-sweetened soft drinks, fast food, foods with excessive salt, sugar or trans fatty acids; encourage production of healthy foods, and policies that support physical activity;
- Develop a strategy for NCD prevention and control for the period 2015-2020 and a vision to 2030, including contents on control of risk factors with concrete targets for each risk factor. Consider including services such as alcohol rehab, tobacco cessation therapy into the list of services covered by health insurance.
- Study to propose establishment of a health promotion fund from special consumption tax revenues for alcohol as well as tobacco.
- Develop and issue policies and regulations for health impact assessment (HIA) to be undertaken for all socio-economic development projects and plans. In planning for cities, roads, schools and transportation, it is necessary to consider creation of an environment amenable to physical activity and fitness, sports for health promotion.

Develop a unified organizational model for management of activities to control risk factors in the framework of one unit that organizes and provides leadership for NCD prevention and control, with adequate capacity and authority for inter-sectoral mobilization and participation of the whole of society; Develop an appropriate organizational model and strengthen capacity of coordinating agencies in directing and coordinating risk factor control activities; Strengthen effective inter-sectoral cooperation for implementing activities for risk factor prevention and control.

Short term

- Integrate activities for controlling harmful use of alcoholic beverages, promote healthy diet and appropriate physical activity into the existing functions of the Vietnamese committee for Tobacco or Health (VINACOSH).
- Assess the situation and propose measures to strengthen the role and capacity of the General Department of Preventive Medicine (MOH) in leading and coordinating the integration of NCD risk factor control activities.
- Various ministries, sectors, mass organizations and localities need to develop concrete plans to integrate preventive medicine and NCD risk factor control activities.
- National Institute of Nutrition should collaborate with the Food Safety Administration to study development of concrete guidelines to set limits to alcohol, salt, sugar, trans fatty acid consumption to prevent NCDs; set standards for limiting these items in processed foodstuffs to ensure NCD prevention.

Long term

- Implement a pilot organizational model at each level, develop the functions, tasks, operational, financial, inter-sectoral cooperation mechanism for implementing NCD risk factor control activities.
- Incorporate targets for risk factor controls and NCD prevention into action plans for socio-economic development in provinces and sectors.
- Ministry of Health research and complete guidelines, regulations on organization of alcohol rehabilitation, tobacco cessation therapy for alcoholics and addicted smokers; collaborate with the Ministry of Labor, Invalids and Social Affairs and other relevant sectors to organize a pilot and scale up rehabilitation models in the community. Mobilize participation of organizations, mass organizations and the community in organizing alcohol rehabilitation and tobacco cessation. Incorporate screening and counseling for alcohol and tobacco addictions into regular medical service provision.
- Food Safety Administration develop a roadmap for announcing and including on labels the amount of trans fatty acids in food; study technical measures to support for manufacturers to replace trans fatty acids in their products with unsaturated fats; strengthen checking and surveillance of implementing declaration of the amount of trans fatty acids and their labeling, especially in fast food;
- Invest in strengthening capacity of food quality control facilities, strengthen checking and ensure safety of foodstuffs, monitor quality of alcoholic beverages, especially artisanal products.

Set up an effective risk factor surveillance system and system for monitoring and assessing activities for control over common NCD risk factors; Set up a unified system for management and monitoring of risk factors; Strengthen checking and evaluation of the results of risk factor control activities

Short term

- Review, supplement and update the Vietnamese system for gathering information to monitor NCDs according to WHO recommendations on monitoring indicators;
- In the action plan for risk factor control and NCD prevention and control of various ministries, sectoral agencies, and localities, there should be activities to check, monitor and evaluate results of implementing the plan.

Long term

- Study to propose a network for collecting information for monitoring common NCD risk factors, under a unified management unit.
- Study and propose implementation of a periodic reporting system covering risk factors and situation of implementing risk factor control activities.
- Allocate funds for periodic surveys to monitor risk factors and evaluate results of risk factor control activities.

Strengthen awareness of risk factors, consciousness of complying with risk factor control policies and encourage risk factor-related preventive activities; Strengthen IEC, widely disseminate information on legislation for risk factor control; Strengthen inter-sectoral collaboration in promoting actions for prevention and control of risk factors and stringently check and penalize violations.

Short term

- Implement IEC focused on priority groups for each risk factor: Advise production facilities to limit salt and trans fatty acid in their food products; advocate that production facilities and households say no to harmful chemicals in the food production and processing; IEC to mobilize people to say no to alcoholic beverages, smoking and to strengthen physical activity among youth, school pupils and university students and office workers.
- Strengthen cooperation between family, community, government agencies, mass organizations, and the whole of society in IEC to improve awareness and consciousness about complying with regulations on control of risk factors;
- Promote imposition of penalties for violations in regulations related to smoke-free public spaces and the community; ban advertising of alcoholic beverages, tobacco; ban sales of alcohol and tobacco to youth below age 18.

Long term

- Health IEC centers collaborate with professional agencies to study and develop IEC messages that are simple, easy to remember, easy to understand and implement about prevention of NCD risk factors, and focused on priority areas. For example, collaboration between the National Institute of Nutrition developing recommended dietary guidelines regarding what foods to eat and what to avoid or limit; developing the habit of checking food labels for the amount of salt, trans fatty acids to help in making appropriate choices for healthy family diet.
- Strengthen the role and responsibility of leaders of organizations, agencies, units and the community in implementing regulations on controlling risk factors like bans on use of alcohol, tobacco. Incorporate standards on compliance with NCD risk factor policies into emulation campaigns for individuals, organizations and the community
- Continue to strengthen inter-sectoral collaboration in strict treatment of violations, including in the areas of production, processing and distribution of foodstuffs.

Chapter V: Implementation of NCD component projects of the national health target program

In order to implement the goals for control and management of NCDs, one of the four specific goals of the Strategy for the care and protection of the people's health for the period 2001-2010,⁴¹ the Prime Minister approved and implemented the first national program for NCD prevention and control for the period 2002-2010⁴² covering four disease groups: cardiovascular disease, diabetes, cancer and mental and neurological disorders. In fact, the project on protection of mental health in the community had been approved and implemented as early as 1999. COPD was the latest disease to be incorporated into the NTP, with implementation beginning in 2011 (Table 31).

Table 31: Various periods of implementing the five NCD control projects, 1998-2015

NCD control project	Implementation periods according to Prime Ministerial decisions			
	1998-2005 ⁴³	2006-2010 ^{44,45}	2011 ⁴⁶	2012-2015 ⁴⁷
Hypertension		X	X	X
Cancer		X	X	X
Diabetes		X	X	X
COPD			X	X
Mental health protection	X	X	X	X

Some of the main activities in the NCD control projects according to Prime Ministerial Decision No. 1208/2011/QĐ-TTg (Table 32) include: (i) strengthening awareness of the population about NCD prevention and control; (ii) training and developing human resources; (iii) screening for early detection of NCDs; (iv) managing and guiding treatment; (v) developing care models for the grassroots level; (vi) integrating with commune health activities; and (vii) rehabilitation and reducing disability.

⁴¹ Prime Ministerial Decision No. 35/2001/QĐ-TTg dated 19 March 2001

⁴² Prime Ministerial Decision No. 77/2002/QĐ-TTg dated 17 June 2002

⁴³ Prime Ministerial Decision No. 196/1998/QĐ-TTg dated 10 October 1998, added 2 goals into the National health target program, one related to community mental health and the other to dengue fever.

⁴⁴ Prime Ministerial Decision No. 108/2007/QĐ-TTg dated 17 July 2007 approving the National health target program for the period 2006–2010.

⁴⁵ Prime Ministerial Decision No. 172/2008/QĐ-TTg dated 19 December 2008, supplementing Decision No. 108/2007/QĐ-TTg ngày 19/12/2008 on the NTP for 2006-2010.

⁴⁶ Prime Ministerial Decision No. 2331/QĐ-TTg issuing the list of national programs for the year 2011.

⁴⁷ Prime Ministerial Decision No. 1208/QĐ-TTg dated 4 September 2012 issuing the list of national health target programs for the period 2012–2015.

Table 32: Summary of main activities of NCD control projects according to Decision No. 1208/2012/QĐ-TTg

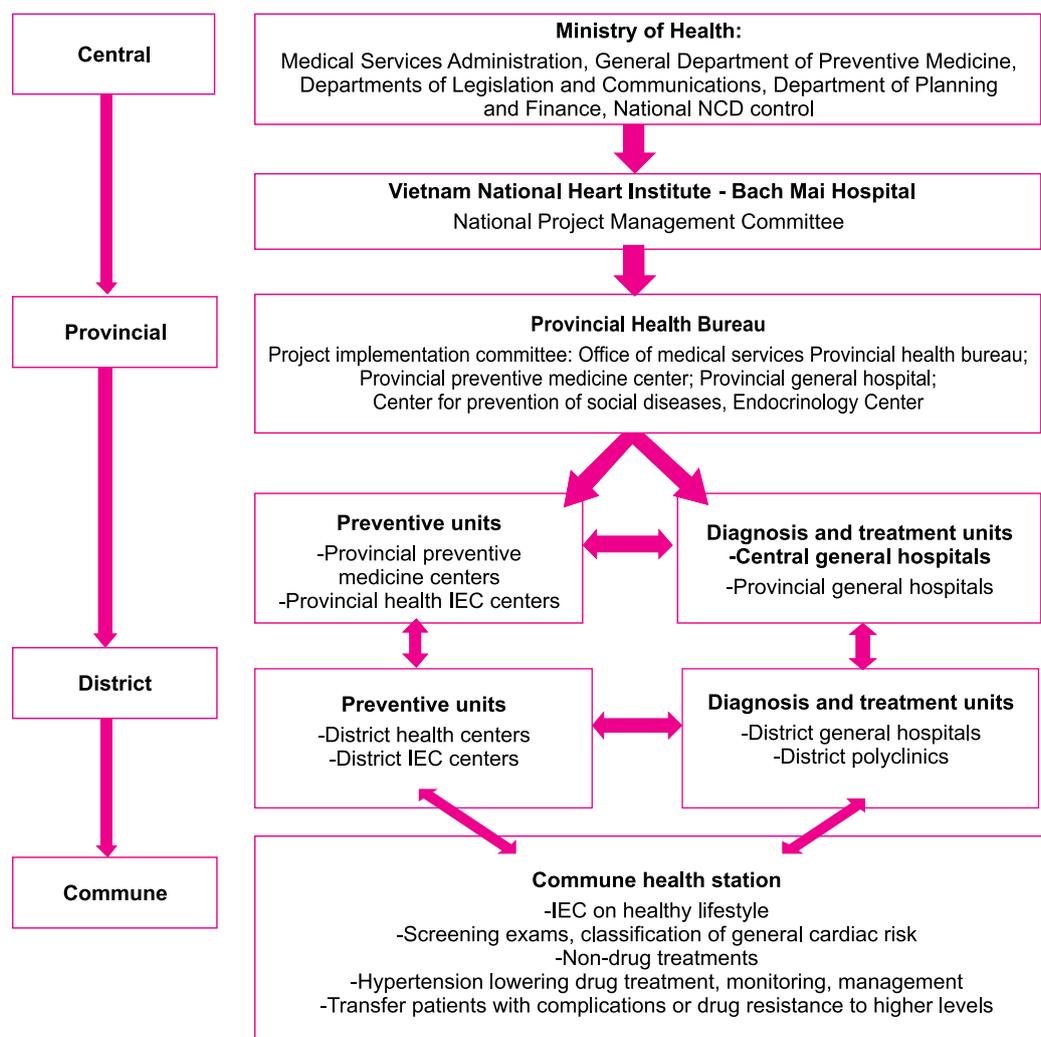
Objective	Hypertension	Cancer	Diabetes	COPD	Mental health protection
Strengthening awareness of the people about NCD prevention and control	50 percent of the population with correct knowledge	Strengthen awareness for prevention and early detection of cancer			
Training to develop human resources	Train 80 percent of health workers working in localities where the project is implemented		Train and retrain project workers in the provinces	Train and develop human resources at all levels of the health system	
Screening, early detection		Increase by 5 to 10% the proportion of cancer patients detected in early stages	Strengthen screening in the community		Early detection, management and treatment for 70 percent of epileptics
Management and treatment guidelines	50 percent of hypertension patients at high risk are treated according to guidelines		Manage 60 percent of pre-diabetics and 50 percent of type 2 diabetics	50 percent of patients are given correct prescriptions according to MOH guidelines	
Developing management models for the grassroots level	Develop, implement and maintain sustainably the hypertension management model at the grassroots level			Develop, implement and sustainably maintain the management model at all levels of the health system	Implement and manage epilepsy patients in 90 percent of communes
Integrating care at the commune level					70 percent of communes implement the integrated model
Rehabilitation, reduction of permanent disability					Rehabilitate, reduce the proportion with permanent disability to below 20 percent of epilepsy patients

The NCD control projects are vertical programs, with clear statement of the goals and targets of the program and the measures to be implemented to achieve them. Below is an assessment of the results of implementing each project, identification of problems and limitations as well as priorities and recommendations for overcoming them⁴⁸.

1. Project on hypertension prevention and control

Even though the Prime Minister approved the project from December 2008 (Decision No. 172/2008/QĐ-TTg), funds were not allocated for activities until the beginning of 2010. The Vietnam National Heart Institute at Bach Mai hospital is responsible for implementing the project under the leadership of the Ministry of Health. The project covers all 63 provinces, and is implemented in 474 districts. The hypertension control units are located in provincial hospitals and 96 district level hypertension control units of 16 pilot provinces. Figure 50 shows the organization of the hypertension management network that is integrated into the health system.

Figure 50: Organization of the hypertension management network in Vietnam



⁴⁸ This chapter was compiled from thematic reports written by five national experts. Dr. Pham Thai Son (Hypertension), Associate professor Tran Van Thuan (cancer), Professor Ngo Quy Chau (COPD and asthma), Dr. Phan Huong Duong (Diabetes) and Dr. Truong Le Van Ngoc (mental health).

1.1. Implementation results

Results of implementing the main project goals are described below.

Strengthening awareness of the people: Project health IEC activities include television programs (VTV, O2TV, VOV), communication materials (billboards, posters, flyers, booklets), television spots on hypertension developed and broadcast in the localities. Events of “World Heart Day” and “World Hypertension Day” are organized annually. Hypertension clubs have been established in the community with activities organized on a monthly basis. The clubs are locations where members can exchange and share information on hypertension and receive advice from heart specialists on prevention and treatment of hypertension. Up till now no evaluation has been made of changes in awareness among the population resulting from these diverse and widespread communication activities during the period 2010-2011.

Screening and early detection: Screening for early detection of hypertension is being implemented following a population-based screening model for people with risk factors. By the end of 2013, in 1116 communes a total of 2 456 928 people were screened and 724 695 people are currently receiving treatment to manage their hypertension.

Training and human resources development: This is one of the main activities and goals of the hypertension project. Cardiac specialists in the three regions of the country participating in the project were requested to train trainers in the 63 provinces; the provincial trainers then taught health workers in their province at the district and commune levels. By the end of 2013, the project had organized 2476 training classes, improving the capacity for screening, management and treatment of hypertension, management and monitoring of project implementation, and health IEC for 71 278 project managers and cardiologists in 63 provinces. The project provided training for commune health workers on measuring blood pressure, methods for changing lifestyles to prevent the disease, drug treatment for hypertension, and models for prevention, treatment and management of hypertension in the community.

Guidelines on diagnosis and treatment of hypertension: Guidelines for diagnosis and treatment of hypertension were issued in 2010 and have been widely disseminated. In addition, 35 diagnosis and treatment guidelines for cardiovascular disease have been developed; five books on cardiology and hypertension have been published.

Management of drugs and equipment: Provinces are procuring drugs and equipment for use in the Hypertension project. Specifically in the 16 pilot provinces, 103 electrocardiogram (ECG) machines, 1846 blood pressure measurement devices and 6 351 000 pills for treatment of hypertension were procured for distribution to commune-level units participating in the project.

Surveys and surveillance of hypertension were implemented in 2010, but indicated some worrying results. The prevalence of hypertension among adults in the community is relatively high, 28.3 percent in males and 23.1 percent in females. Among people detected as having hypertension, only 48.4 percent were previously aware of their hypertension and 29.6 percent were undergoing treatment [204].

1.2. Difficulties and shortcomings

The project coverage of the population remains narrow and scaling up has been slow; management of hypertension treatment is primarily still only carried out at the provincial level.

Although the project has been implemented in all 63 provinces and over 70 000 health workers have received training on hypertension prevention and control, up till now only 10 percent of communes are implementing hypertension treatment management at the commune level. In addition, there are *many other barriers to management of hypertension treatment at the commune level*, including lack of incentives for health workers to participate in patient counselling and management of hypertension treatment in the community, inadequate hypertension treatment drugs at the commune level and lack of mechanisms to pay for counselling services related to hypertension treatment.

Drugs for hypertension management at the commune level are inadequate. The types of blood pressure lowering drugs in the health insurance drug formulary for use at the provincial and district level (i.e. all hospitals) are comprehensive, but at the commune level they are somewhat restricted (Table 33). Some drugs in the commune level formulary are not appropriate with hypertension management, for example furosemide is a diuretic that causes loss of magnesium so it is difficult to use at the commune level when there is no capacity to monitor electrolytes in the blood.

Table 33: List of blood pressure lowering drugs reimbursed by health insurance at the commune level

Drug name	Type	Special considerations
Amlodipin	Calcium channel blocker	
Nifedipin	Calcium channel blocker	
Clonidin	Alpha-2 Receptor Agonist and imidazoline receptor	
Methyldopa	alpha-adrenergic agonist	Pregnant women
Enalapril	ACE inhibitor	
Captopril	ACE inhibitor	
Cerindopril	ACE inhibitor	
Perindopril+indapamid	ACE inhibitor with thiazide diuretic	

Source: Circular No. 31/2011/TT-BYT dated 11 July 2011

Inappropriate model for screening and early detection. The current screening model is a concentrated periodic screening targeted at the population with risk factors (organized on a periodic basis as a campaign at the commune health station for people aged 40 years and older). Implementation of this type of screening for 25 million people requires an enormous amount of funds and is therefore not feasible. At the same time, blood pressure measurement is not yet considered a routine activity during medical examinations of people at the commune level.

Detection of hypertension must be integrated into routine medical examinations at medical facilities. People aged 40 years and older who come to any medical facility should have their blood pressure measured and be screened for hypertension. This is an opportunistic screening model that helps integrate screening for hypertension into routine medical care at both public and private facilities. Medical facilities can use the Table classifying general cardiac risk factors to determine the high risk groups for having a cardiac event in the next 10 years as in the 2010 treatment guidelines for hypertension issued by the Ministry of Health (Table 34). Opportunistic screening helps to more fully utilize existing health human resources in the

health system and reduces costs of screening for hypertension through integrating payments for this screening into the payments for routine medical care.

Table 34: Table for classifying general risk of a cardiac event in the next 10 years

	Normal blood pressure	Pre-hypertension	Stage 1 hypertension	Stage 2 hypertension	Stage 3 hypertension
Disease situation	Systolic 120-129 mmHg and diastolic 80-84 mmHg	Systolic 130-139 mmHg and/or diastolic 85-89 mmHg	Systolic 140-159 mmHg and/or diastolic 90-99 mmHg	Systolic 160-179 mmHg and/or diastolic 100-109 mmHg	Systolic \geq 180 mmHg and/or diastolic \geq 110 mmHg
No cardiovascular risk factors			Low risk	Average risk	High risk
From 1 to 2 cardiovascular risk factors	Low risk	Low risk	Average risk	Average risk	Extremely high risk
More than 3 cardiovascular risk factors or metabolic symptoms or damage to heart or diabetes	Average risk	High risk	High risk	High risk	Extremely high risk
Have had cardiac event or cardiovascular disease or chronic kidney disease	Extremely high risk	Extremely high risk	Extremely high risk	Extremely high risk	Extremely high risk

Source: Decision No. 3192/QD-BYT dated 31 August 2010 of the Minister of Health on issuing the hypertension diagnosis and treatment guidelines

1.3. Recommendations

Short-term (2014-2015):

- Strengthen IEC activities on hypertension, integrate with IEC for other NCDs.
- Pilot an integrated screening model to detect hypertension during regular health care visits for high risk individuals (above 40 years) at all public and private medical facilities for early detection of hypertension, to replace the current mass screening model of high risk individuals.
- Organize treatment of hypertension at the grassroots level facilities, mainly the commune health station, and especially for individuals with Stage 1 or Stage 2 hypertension without complications. Implement the treatment strategy for people with hypertension after screening and classifying general risk of a cardiac event occurring in the next 10 years based on the 2010 Ministry of Health hypertension diagnosis and treatment guidelines.
- Develop standards for detection, management and treatment of hypertension at the commune health station; integrate this activity into the commune health benchmarks.
- Emphasize management of hypertension through lifestyle changes, particularly reducing

weight if overweight or obese; quitting smoking; eating more fruit, vegetables, dairy products, reducing fat consumption, especially saturated fats; minimizing salt intake; increasing consumption of magnesium; increasing regular physical activity; and limiting alcohol consumption [205].

- Review and adjust the health insurance regulations related to the period for which hypertension drugs can be dispensed to bring them in line with the needs of chronic disease treatment and the type of drug needed depending on co-morbidities or contraindications. Select the hypertension management drugs to be covered by insurance through careful assessment of cost-effectiveness evidence. Hypertensive drugs included in the list of drugs reimbursed by health insurance should be the same for district and commune levels, with five basic types: (i) thiazide diuretics; (ii) ACE inhibitors; (iii) calcium channel blockers; (iv) angiotensin receptor blocker; and (v) beta blockers.
- Add some services related to hypertension control into the list of services reimbursed by health insurance.

Long-term (2016-2020 and after 2020):

- Integrate hypertension screening into routine medical care at all public and private facilities and ensure these services are covered by health insurance. Ministry of Health should develop guidelines for opportunistic screening such as periodic hypertension examinations that are feasible at all levels of the health system, especially at the commune level.
- Along with opportunistic screening during regular medical exams, implement periodic health screening for people aged 40 and older at the workplace, integrate screening for different NCDs and risk factors to be implemented at the same time.

2. Cancer prevention and control project

The cancer control project in the national health target programs for the period 2006-2010 was approved by the Prime Minister on 17 July 2007 with Decision No. 108/2007/QĐ-TTg. The goal of the project was to gradually reduce prevalence and mortality from cancer and improve quality of life for cancer patients. During the period 2012-2015 the goal became more modest, specifically to increase awareness in the community about prevention and early detection of cancer and increase by 10 to 15 percent the proportion of cancers that are diagnosed in early stages, at the same time reducing mortality from certain types of cancer including breast, cervical, oral and colon cancers.

The Cancer project was started in 2008, with the main activities being IEC, screening for early detection, training and some other minor activities. The National Cancer Hospital was assigned responsibility for implementing the project with a relatively small budget that fluctuated over time. In 2008, the project was given 20 billion VND, then in the years from 2009 to 2013, the amounts allocated were successively 24 billion, 33 billion, 38 billion 36 billion and 35.6 billion VND. In 2014, the total amount allocated fell to only 12.5 billion VND. Some international organizations like WHO and International Atomic Energy Agency have also implemented activities for training and technology transfer.

2.1. Implementation results

The project was implemented in 37 provinces (by the beginning of 2014). Almost all goals of the cancer control project for the period 2006-2010 were not achieved or information is inadequate to assess whether they were achieved or not (Table 35). Some goals were not feasible (such as the goal of Hepatitis B vaccination for 100 percent of newborns). Currently no evaluation study has been done to assess implementation of goals for the period 2012-2015.

Table 35: Evaluation of performance of the cancer prevention and control project based on objectives for the period 2006-2010

Objective	Implementation
<p>General objective:</p> <ul style="list-style-type: none"> ▪ Reduce cancer morbidity ▪ Reduce cancer mortality ▪ Improving quality of life for cancer patients 	<p>Objective 1: Cancer morbidity increased by 28% in male and 33% in female, from 2000 to 2010</p> <p>Objectives 2 and 3: Insufficient information for assessment</p>
<p>Specific objectives:</p> <ol style="list-style-type: none"> 1. Reducing cancer morbidity related to tobacco use by 30% compared to 2000; 2. Immunize 100% of infants against hepatitis B; 3. Reducing fatality rate for specific types of cancer: breast, cervical, mouth, colon and rectum; 4. Reduce the proportion of cancers first presenting at specialist facilities in late stages from 80% to 50%. 	<ol style="list-style-type: none"> 1. Cancer morbidity related to tobacco increased in males by 20% for lung cancer and 167% for esophageal cancer. Little change in morbidity of these cancers for females. 2. Infants immunized against hepatitis B reached 48.2% (MICS 4, 2011) or 95.2% (Health Statistics Yearbook 2011). 3. Insufficient information for assessment of changes in fatality rates. 4. Using data from 135 hospitals in 5 major provinces (2010): of 22.7% of breast cancer cases where disease stage was assessed, 64.2% of cases were at late stage (stage > III). There is no data showing changes in proportion of late diagnosis

Source: Nguyen Thanh Huong, Hua Thanh Thuy. Report reviewing NCD control policies in the world and in Vietnam. 2013 [Báo cáo rà soát chính sách phòng chống BKLN trên thế giới và Việt Nam].

Training and human resources development: Training and improving professional qualifications has focused on oncologists, nurses and cancer registry officials. The project organized training courses on prevention and early detection of common cancer types; cancer registry; palliative care; cancer nursing care, and technology transfer (oncology surgery, oncology chemotherapy and radiotherapy).

Organized the network of cancer registry centers in nine provinces including Hanoi, Hai Phong, Thai Nguyen, Thanh Hoa, Hue, Da Nang, HCMC, Can Tho and Kien Giang; of which Hanoi and HCMC cancer registries have been quality certified by the International Agency for Research on Cancer (IARC). Results of the cancer registry have helped to provide estimates of cancer incidence (at least 126 000 new cancer cases in 2010, projection of 189 300 new cases in the year 2020) [206].

Screening and early detection of cancer is being conducted for four main types of cancer, including: cancer of the breast, cervix, oral cavity and colon including both collaborations for active screening (in which the population is aware of the benefits and goes to a facility for the purpose of cancer screening) and organized screening events. Screening is mainly implemented in the two largest cities of Hanoi and HCMC. In the period 2008-2013, more than 120 000 women

aged 40-54 years were screened nationwide for early detection of two common types of cancer, namely breast and cervical cancer [207]. In 2013 alone, the plan intended to screen 100 000 people for early detection of four types of cancer. Initial results indicate that the screening has proved highly effective. Many cases that were detected were in the pre-cancer and early stages. After the screening, detected cases were referred to oncology centers for treatment. Results indicated that treatment was simpler and cheaper, costing only 20 percent of the cost of treating late-stage cases.

Diagnosis and treatment of cancer has improved over the past few years, especially after the cancer prevention and control project was included in the health NTP in 2008 and the Minister of Health approved the development of the cancer prevention and control network in Vietnam in the period 2009-2020. Additionally, project 1816 and cancer satellite hospital projects have been effective at technology transfer related to oncology.

The cancer diagnosis and treatment network has been developed in all regions. Vietnam has six specialist oncology hospitals in the public sector including the Vietnam National Cancer Hospital, the HCMC Oncology Hospital, Hanoi Oncology Hospital, Nghe An Oncology Hospital, Da Nang Cancer Hospital and Can Tho Cancer Hospital. There are 43 oncology centers/departments/units located in central, provincial general and specialist hospitals. A number of private cancer hospitals are also opening (e.g. Hung Viet Oncology Hospital).

2.2. Difficulties and shortcomings

IEC on cancer prevention and control is discontinuous and seasonal, without a clear plan or strategy, there is a lack of coordination in IEC methods used and almost no integration with IEC related to other NCDs leading to lower than desired effectiveness. Funding for IEC activities has been completely cut in the most recent years of the project.

Limitations in cancer registry: Cancer registration and cancer statistics are mainly implemented as part of the periodic statistical reporting system of the health sector. However, because almost all cancer patients die at home, these cases are not captured by the statistical system and result in an undercount of the number of cancer cases. The nine cancer registers in nine provinces cover only about 20 percent of the population and only two registries, the ones in Hanoi and HCMC, have had their quality accredited by the IARC. Currently only cancer incidence is registered not mortality. Forecasting and planning using the cancer registry still faces many problems inhibiting use of its data in planning and policymaking.

Screening for early detection of cancer as part of the national health target program has been implemented only on a pilot basis limited to a few localities. Screening for early detection of cancer in Vietnam has been implemented on a pilot basis through a Vietnamese-American cooperation program on cervical cancer prevention and control and the cancer prevention and control program of the Ministry of Health, focused on screening and early detection of breast and cervical cancer in Hanoi, Hai Phong, HCMC, and Can Tho. The main obstacles preventing scaling up of screening include a shortage of trained personnel, lack of appropriate diagnostic equipment and the lack of health insurance reimbursement for screening services. Even for common and easily detected cancers like mouth cancer and colorectal cancers, screening is still limited to a small scale covering fewer than 20 000 patients, mainly for research purposes.

Lack of qualified trained personnel to diagnose and treat cancer: Development of diagnostic capacity, mainly histopathological and cytological skills, confronts numerous

challenges due to the severe lack of personnel trained in these areas. Even though these skills are essential for cancer diagnosis, few doctors are attracted to work in these specialties.

The structure of most specialist oncology facilities is incomplete and there are shortages of personnel and equipment. A number of oncology facilities (hospitals, centers, departments, units) have been established over the past 5 years; nevertheless, skills and competencies are unevenly distributed and many oncology centers and departments cannot provide the full range of needed services because they lack radiotherapy equipment. Shortages of specialist human resources are common, especially at the provincial level. According to Ministry of Health regulations on requirements for a fully functional oncology facility, four units should be present including a surgical unit, radiotherapy unit, chemotherapy unit and palliative care unit. Currently only 10 percent of oncology facilities have the full set of units.

Oncology treatment facilities are not evenly distributed across the country, while oncology hospitals in Hanoi and HCMC suffer from severe overcrowding. There are a total of 51 radiotherapy machines in Vietnam, mostly concentrated in Hanoi and HCMC. The uneven distribution of radiotherapy machines contributes to overcrowding of oncology hospitals in the two major cities and uneven capacity for diagnosis and treatment among facilities in the provinces. A master plan was developed to ensure appropriate geographic distribution of oncology diagnosis and treatment facilities, but the development of some oncology facilities has not followed the plan, while others have suffered severe delays in development. With available capacity, the existing network of cancer prevention and control can only meet approximately 30 to 40 percent of the need for oncology services among the population [207].

Palliative care has received inadequate attention and suffers severe constraints. The need for palliative care is high because more than 70 percent of patients present at medical facilities for care in late stages of the disease and a high share of them face pain and other discomfort due to cancer or its treatment. Conditions to provide palliative care such as training, dedicated palliative care units and supervision, are generally available at the central level, but not at district and commune levels. A high share of patients reported end-of-life care at home, without medical supervision. Among those who did get care, most did not receive psychological counselling, advice or care for symptoms other than pain. Currently the model of home care guided by trained health workers has not been developed [208].

Difficulties in accessing pain medication during palliative care. The Ministry of Health has issued strict guidelines on use of morphine at different levels of the health system in an effort to expand access to pain relief while minimizing diversion of opioid pain medicines to drug addicts. Despite these policies, patients still face difficulties in accessing these third level pain relief drugs, especially for outpatient care at the commune level or for people being treated at home. Lower level facilities reported that the main reasons were inadequate amount of drugs procured for commune use, low stocks or doctors reluctant to prescribe these drugs [208].

2.3. Recommendations

Short term

- *Continue to strongly implement and integrate activities aimed at improving awareness in the community about prevention and control of cancer.* Allocate funds for cancer prevention and manage IEC activities in a way that is integrated with other health IEC

programs, using various channels such as mass media, IEC volunteers or paid staff at the district level. Develop IEC materials and training materials for IEC. Encourage social organizations, medical professional associations and health facilities to participate in IEC to prevent and control cancer.

- *Strengthen capacity for cancer registration and management.* Strengthen capacity of nine cancer registries currently in place so they can more effectively be used to make plans and evaluate plans for cancer control. Capacity strengthening should be done through training of registry staff, supervision of registration, analysis and reports. Implement a model for cancer registry in the community.
- *Train and develop human resources:* Continue to implement training models in which the central level has the task of training trainers in the regional cancer centers, widely disseminating knowledge on cancer prevention and control including prevention, early detection, diagnosis and treatment of cancer for provincial level doctors. Trainers after being trained at the central level will implement training courses at the provincial and district levels.
- *Continue to invest in constructing facilities* for diagnosis and treatment of cancer at the central and provincial levels; strengthen the network according to the master plan combined with improving professional skills through the Project on satellite hospitals and technology transfer.
- *Expand palliative care facilities.* Establish and put into operation units that provide pain relief and palliative care at all cancer treatment facilities.

Long term

- *Implement screening for early detection of cancer throughout the country.* Strengthen professional qualifications, select an appropriate health financing model (including health insurance) to scale up to national level cancer screening for early detection focusing on cancers that are easy to detect including breast, cervical, oral, colon, prostate and thyroid cancers.
- *Develop a palliative care model for late stage cancer patients at the grassroots level.* Train grassroots health workers in basic knowledge and skills to help implement a palliative care model. Develop guidelines for a late stage cancer care model at the grassroots level.
- *Speed up epidemiological research* on cancer prevention and treatment and complete the national database system on cancer.

3. Diabetes prevention and control program

The Diabetes prevention and control Project was developed and subsequently approved by the Prime Minister in 2008 (Decision No.172/2008/QD-TTg), with actual implementation beginning in 2010. The diabetes project was included in the national health target programs in 2011 and continued into 2012-2015 as part of the health NTP approved under Prime Ministerial Decision No. 1208/QD-TTg in 2012.

The project's overall objective to the year 2010 was to reduce morbidity, complications and mortality due to diabetes. The specific objectives were to:

- Strive to ensure that 50 percent of people in the community understand about diabetes and its risk factors.
- Reduce the undetected share of diabetes cases in the community to below 60 percent.
- Develop, implement and sustain the diabetes management model nationwide.
- Systematically monitor and provide treatment using Ministry of Health diabetes treatment protocols for at least 50 percent of people who have been diagnosed with diabetes.

The goals of the project for the period 2012-2015 that was approved by the Prime Minister include:

- Strengthen community screening in order to detect pre-diabetes and diabetes early. Manage 60 percent of pre-diabetics and 50 percent of diabetes type 2 patients detected through screening.
- Train and retrain staff participating in the project, strengthen capacity for implementing the project for provincial project staff. By 2015, 100 percent of provincial staff will be able to implement the project on their own: 100 percent of staff participating in the project will be trained in methods for prevention, early detection, management and treatment of people at risk of diabetes and people diagnosed with diabetes.
- Complete the treatment network; strive by 2015 to ensure that 100 percent of provincial hospitals have a specialist endocrinology department. Maintain and consolidate the preventive network in the provinces, set quotas for number of permanent staff in each unit who will participate in preventive work to contribute to reducing incidence of diabetes.

3.1. Implementation results

A variety of IEC activities have been implemented nationwide. Activities of the Provincial Health IEC Centers have been implemented in all 63 provinces with diverse forms. In collaboration with the television stations (VTV2 and O2TV) various diabetes-related discussions have been broadcast on television. Annual meetings have been organized on the occasion of World Diabetes Day (14 November) and have included providing free diabetes examinations. The community-based behavior change communication model has been piloted in five provinces: Thanh Hoa Ninh Binh, Hai Phong, Lam Dong and Tien Giang.

Annual community-based screening has been conducted for hundreds of thousands of people for early detection of pre-diabetes and diabetes. In order to strengthen screening for early detection of pre-diabetes and diabetes, every year the diabetes project allocates a majority of its funds for screening in the community. In 2011, a total of 248 466 people at high risk of diabetes were screened and 18 738 cases of pre-diabetes (7.5 percent) and 38 315 cases of diabetes (15.4 percent) were detected. In 2012 a total of 268 373 high risk cases were screened, detecting 19 778 (7.4 percent) cases of pre-diabetes and 36 123 (13.5 percent) cases of diabetes. Then in 2013, 266 480 high risk individuals were screened, detecting 19 026 (7.1 percent) with pre-diabetes and 45 966 (17.3 percent) with diabetes. In addition to these community screening

activities, screening for early detection of pre-diabetes and diabetes has also been conducted in diabetes project clinics and medical facilities using diabetes project diagnostic guidelines for patients who come in for regular health checkups.

Counselling for hundreds of thousands of people nationwide and implementing the management and care model for pre-diabetes and diabetes patients in diabetes project provinces. Specialist endocrinology hospitals and centers and government preventive medicine centers have all set up clinics for examination and counselling on diabetes. In 2012, counselling on diet and exercise to prevent diabetes was provided to 111 743 people and in 2013 to 119 896 people at district counselling centers. The diabetes project has cooperated with WHO and the International Diabetes Fund in the region to develop and implement a diabetes management and treatment model for the provincial level in Thai Binh, Thanh Hoa, Dak Lak and Binh Thuan provinces. The “Guidelines on diagnosis and treatment of type 2 diabetes” have been issued with Decision No. 3280/QD-BYT in 2011.

Capacity building through project management training in the provinces and professional training for project staff. In the two years 2010-2011, the diabetes project provided short training courses on diagnosis and treatment of diabetes for 4020 provincial health staff and on diagnosis, treatment and health communication for 15 021 district health staff. Every year, short and long technical training courses for staff working in the system and in hospitals outside the system are organized by the diabetes project in cooperation with the Vietnamese Association of Diabetes and Endocrinology and medical universities. The diabetes project also provides training on project management, such as planning, implementation, reporting, financial management and data analysis for provincial staff. The National Hospital of Endocrinology has organized four specialized training course introducing the endocrinology specialty and providing training on theory and practice for lower level facility health staff. All provincial diabetes prevention and control units have regularly sent staff for training.

The provincial diabetes prevention and control network has been set up throughout the country. The diabetes project is being implemented in 63 provinces/cities and at six sectoral health facilities under six different ministries/sectors. Currently, the diabetes prevention and control network is comprised of six provincial endocrinology hospitals, nine endocrinology centers, one nutrition center and 47 endocrinology departments at provincial preventive medicine centers. More than 90 percent of facilities in the network provide counselling on diet and physical activity for diabetes prevention and management. The remaining provinces have not been able to set up counselling clinics under preventive medicine centers due to staff shortages. A summary of project implementation results is presented in Table 36.

Table 36: Evaluation of performance of the diabetes prevention and control project based on objectives for the period 2012-2015

Objectives	Implementation
<ul style="list-style-type: none"> • Strive to ensure that 50 percent of people in the community understand about diabetes and its risk factors; 	<ul style="list-style-type: none"> • No data available
<ul style="list-style-type: none"> • Reduce the proportion of diabetes cases in the community that are undetected to below 60 percent; 	<ul style="list-style-type: none"> • In 2012, 63.4% of diabetes cases in the community were undetected [209]. No data for 2013 or 2014.

Objectives	Implementation
<ul style="list-style-type: none"> Develop, implement and sustain the diabetes management model nationwide; 	<ul style="list-style-type: none"> More than 90% of project facilities have clinics for examination and counselling on nutrition and physical exercise. 65.4% of provinces have an endocrinology hospital/center or endocrinology department in the provincial general hospital.
<ul style="list-style-type: none"> Systematically monitor and treat diabetes using Ministry of Health diabetes treatment protocols for at least 50% of people who have been diagnosed with diabetes. 	<ul style="list-style-type: none"> No data available

Source Nguyen Thanh Huong, Hua Thanh Thuy. Report reviewing policies on NCD prevention and treatment globally and in Vietnam. 2012 [210].

3.2. Difficulties and shortcomings

Funds allocated for IEC are low and there is inadequate coordination between diabetes prevention and control units and the provincial Health IEC centers (units responsible for conducting IEC activities). Social organizations and medical facilities have not yet been actively engaged to participate in diabetes IEC.

Methods for screening in the community require substantial amounts of funding because they are expensive, and cannot be implemented widely. Currently project screening methods are implemented at the commune for people at risk of diabetes. The criteria for determining risk is that they are 45 years or older, and have at least one of the following risk factors: overweight or obese (BMI 23 or higher), large waist circumference (90 cm or higher for men and 80 cm or higher for women), high blood pressure, high blood cholesterol, family history of type 2 diabetes, ever previously diagnosed with impaired fasting glucose and/or impaired glucose tolerance, women with history of giving birth to baby over 3.6 kg and women with history of gestational diabetes. Screening in the community following the above method requires a large amount of human and financial resources. The number of communes for which screening is implemented each year is only 6.8 percent of all communes nationwide, with high costs per case diagnosed, especially in remote areas.

The diabetes project is gradually shifting from a community-based screening model to a model in which patients actively seek diabetes screening or an opportunistic screening model in which patients seeking medical care for whatever reason are assessed for risk and screened as part of their care package. However, because of the lack of integration and collaboration between units implementing the project (i.e. units under the preventive medicine system) and treatment facilities, problems exist in finding measures for effective management, care and monitoring of high risk individuals and patients who have been identified through screening, especially at the commune level.

Professional competencies are inadequate to meet requirements for diabetes prevention and control. The network for prevention and treatment of endocrinological and metabolic disorders over a long period of time has failed to train endocrinology specialists, because endocrinology is only considered as a small part of the training program for internal medicine specialists. The professional qualifications of the provincial and lower level staff in management and treatment of diabetes remains weak. A survey on knowledge of provincial health workers

about endocrinological disorders indicated that 18.1 percent of health workers had weak knowledge, 64 percent had average knowledge and only 17.8 percent had high level knowledge [211]. Staff working in units implementing the diabetes project, particularly at preventive medicine centers, have high job mobility, with many leaving after receiving training. There is also a shortage of nurses capable of implementing diabetes treatment.

Units providing counselling on nutrition and physical activity only exist at the provincial level, the number of district counselling centers is low so they are unable to meet the requirements of the diabetes project. Tools and materials to support counselling activities are poor and remuneration for counsellors is low, making it difficult to motivate staff to participate in counselling tasks.

The budget for diabetes prevention and control activities has been cut, and the funding sources for diabetes prevention and control work is not sustainable. In 2014, funds for the diabetes project were cut nearly 70 percent from the central and local levels, leading to the need to cut many diabetes project activities at both the central and local levels, making it impossible to meet the requirements of the diabetes project. Costs of counselling and screening to diagnose diabetes and pre-diabetes are not yet covered by health insurance.

3.3. Recommendations

- Strengthen *health IEC activities* and train IEC staff.
- *Training and human resources development*: Strengthen and expand diversity of training in the specialty of endocrinology, including specialist training for doctors, continuing medical education and practical training for management and treatment of diabetes in the community for general practitioners at the grassroots level.
- *Change the screening models used*, from community-based screening towards screening of patients exposed to information about diabetes who actively seek diabetes screening and opportunistic screening of at risk patients seeking medical services for other reasons. Implement screening at commune health stations that have adequate capacity for testing blood glucose for early detection of diabetes and pre-diabetes.
- Complete the diabetes prevention and control network including endocrinology hospitals and endocrinology departments within general hospitals capable of providing treatment services and a mentoring office of the endocrinology hospital or endocrinology department of the provincial preventive medicine center to implement prevention and control activities in the community.
- *Set up and expand nutrition counselling clinics* for diabetes patients, not only within diabetes project facilities but also in hospital outpatient clinics to ensure quality of counselling and increase population access to counselling services.
- *Develop policies for health insurance payment* of screening services and counselling about prevention and control of diabetes.

4. COPD and asthma prevention and control project

The Project on prevention and control of COPD and asthma is the latest project to be approved and implemented among the NCD prevention and control projects in Vietnam. On

20 December 2010, Prime Ministerial Decision No. 2331/QD-TTg promulgated the list of NTPs for 2011, the first to include a project on COPD and asthma. On 4 September 2012, Prime Ministerial Decision No. 1208/QD-TTg approved the NTPs for the period 2012-2015, which continued to include the COPD and asthma project. The Ministry of Health assigned responsibility for project implementation to Bach Mai Hospital. The project's general objectives are to: (i) improve people's correct knowledge about COPD and asthma and their risk factors; (ii) improve the quality of diagnosis, treatment, prevention and management of COPD and asthma at all levels of health facilities; and (iii) reduce the rate of morbidity and mortality from these diseases. Specific objectives of the project include:

- Collaborate with the Project on strengthening capacity for IEC, monitoring and evaluation to implement an IEC program aimed at improving population awareness on prevention and management of COPD and asthma.
- Train and develop health human resources to manage and treat COPD and asthma at all levels of health facilities. By 2015, strive to ensure that 70 percent of doctors involved in examining, diagnosing and treating COPD and asthma in all provinces are participating in the Project.
- Develop, implement and sustain a model and network for COPD and asthma management at all levels of health facilities. By 2015, strive to develop clinics for management of COPD and asthma in 70 percent of provinces participating in the project.
- Reduce prevalence of COPD and asthma, increase the proportion of COPD and asthma cases detected and treated appropriately according to the severity of the case. Strive to ensure that at least 50 percent of COPD and asthma patients in project provinces are correctly diagnosed and prescribed appropriate drugs according to the Ministry of Health treatment guidelines.

4.1. Implementation results

The project has only been implemented over a short period of time so no studies, surveys or impact evaluations have been implemented yet to compare results with goals of the project. The activities below were implemented in order to achieve the project objectives:

A diverse set of IEC activities have been conducted including: 13 216 radio broadcasts for a total of 198 240 minutes, 27 television broadcasts for a total of 482 minutes, 14 dialogues for a total of 420 minutes. In addition 335 000 pamphlets, 4500 posters and 285 banners and slogans were printed and distributed. Communication activities such as television interviews and talk shows have been organized with the participation of leading experts [212].

Training and capacity building for professional staff participating in the project have achieved important results. During three years of implementation, nine training of trainers courses have been conducted for a total of 439 doctors working in project provinces, who are now core trainers of the project. These trainers play a vital role in delivering further training to health workers at the grassroots level. Eleven training courses on spirometry for 316 respiratory specialists and technicians were conducted, which aids in opening of COPD and asthma management clinics that meet high standards and serves screening for early detection of patients in the community. Refresher training was provided to 9441 health workers, including doctors and nurses working at provincial, district and commune levels in the 25 project provinces.

Scientific conferences combined with continuing medical education have been organized annually: Every year in May, a scientific conference is organized on the occasion of World Asthma Day and every November another conference is organized on the occasion of World COPD day. Clubs for COPD and asthma patients at Bach Mai hospital and in the provinces maintain a regular set of activities. Patient clubs are places where patients exchange information, share experiences on treatment of COPD and asthma and receive examinations and advice to prevent acute exacerbations of the disease.

Professional guidance. Guidelines on diagnosis and treatment of asthma were issued by the Ministry of Health in 2009 (Decision No. 4776/QD-BYT dated 4 December 2009). Materials for medical professionals providing detailed guidance on diagnosis and treatment of asthma, diagnosis and treatment of COPD covering both acute episodes and stable periods have been compiled and distributed in many different forms including guidebooks and question and answer booklets.

Screening is still primarily implemented at the provincial level following the model of COPD and asthma management clinics at provincial general hospitals and specialist TB and lung hospitals. Clinical exams have been performed on 93 451 people with chronic respiratory symptoms and 11 994 have had spirometry to measure respiratory function. Through this screening, 2521 cases of asthma (2.7 percent of all cases examined) and 1941 cases of COPD (2.1 percent of all cases examined) were detected in the community and are currently being managed by COPD and asthma management clinics at local levels.

The model for disease management being applied in the Project consists of a COPD and asthma management clinic. So far, 42 COPD and asthma management clinics that meet project standards have been set up in 25 project provinces. A network of COPD and asthma management facilities with linkages between central and provincial levels, between the provincial health bureaus and provincial general hospitals and specialist TB and lung disease hospitals has been set up. In each project province, a COPD and asthma management office has been set up to manage outpatient care for COPD and asthma patients. Software for managing COPD and asthma patients is being revised based on feedback from health workers at lower level facilities. The webpage of the project has been maintained and articles are regularly written and uploaded to the project webpage.

4.2. Difficulties and shortcomings

Shortage of trained human resources to implement the project at all levels: At the central level, the project steering committee based at Bach Mai Hospital has insufficient members, and many members only work on the COPD and asthma project on a part-time basis since they hold many different positions. In the provinces, some health workers have not yet undergone training, but they have been assigned responsibility for working on the project, while others have received training on COPD and asthma but do not participate in implementing the project. There is a shortage of health workers with specialized training on COPD and asthma to work in the COPD and asthma management clinics who are capable of reading results of spirometry and prescribing appropriate drugs or using the software for patient management.

Central budget allocations for the COPD and asthma project have been cut by 65 percent between 2013 and 2014, and local budget funds have not been allocated to this project. In almost all provinces, only a small amount of funds are available to carry out essential activities,

while development and approval of action plans and budget plans in some provinces suffer long delays. Some activities, due to conflicts in administrative procedures, are implemented with delay or cannot be implemented leading to difficulties in disbursing project funds. In some provinces, linkages between provincial health bureaus and project implementing units are weak.

Limitations in access to drugs: Essential drugs for treatment of COPD and asthma are not generally available at the grassroots level. COPD and asthma treatment drugs recommended by the Global initiative for chronic Obstructive Lung Disease (GOLD) are not included in the list of drugs reimbursed by the health insurance fund. In many provinces, the health insurance offices do not agree to pay for outpatient care provided by the COPD and asthma management clinics set up by the Project.

Lack of equipment: There are not enough spirometry machines to carry out screening for COPD and asthma and ensure that COPD and asthma management clinics meet a basic minimum standard.

4.3. Recommendations

Provide adequate medications for dispensing to patients for treatment: It is necessary to supplement and adjust the list of essential drugs for COPD and asthma treatment that are reimbursed by health insurance during outpatient treatment for all levels of facilities from the grassroots to the central level for periods of one month at a time similar to other chronic diseases. Strengthen prevention activities and management of treatment at the district and commune levels.

Provide training to improve health worker knowledge: It is necessary to provide training and refresher training to strengthen professional skills of health workers involved in diagnosis and treatment of patients following correct treatment guidelines. There is a need to train specialist doctors working in different regions who commit to staying in those regions to work, and to provide continuing medical education to update knowledge of current health human resources.

Procure additional diagnostic and treatment equipment: It is necessary to provide standard spirometry equipment and bacterial filters to help grassroots health facilities to diagnose respiratory disease more correctly and manage patients effectively. In addition to spirometers, it is also necessary to provide non-invasive ventilators to provincial and regional (interdistrict) hospitals that are capable of treating asthma and COPD patients suffering from respiratory failure.

- *Strengthen inter-sectoral management and cooperation:* The Ministry of Health should promptly approve project plans to allow rapid implementation of activities at the provincial and local levels. In addition, funds must be provided in a timely fashion so the central steering committee of the project can implement activities appropriate for achieving the objectives. There is a need for close collaboration between the provincial health bureaus, provincial general hospitals and specialist TB and lung hospitals in order to implement the project. Leadership in implementing the project should be assigned to the provincial general hospitals, the facility with the largest number of patients, who should implement the work in close collaboration with the provincial TB and lung hospitals, general hospitals in provincial capitals, and district health centers. Provinces should promptly develop action plans to present to the provincial people's

committees for approval and actively seek local counterpart funding to effectively implement the activities.

5. Project on protection of mental health in the community and among children

In 1998, the Prime Minister approved the first project on protection of mental health in the community.⁴⁹ The Program on prevention and control of some NCDs for the period 2002-2010,⁵⁰ the NTP on prevention and control of social, epidemic diseases and HIV/AIDS in the period 2006-2010⁵¹ and the National health target program in 2011 all included contents related to mental health or mental disorders.⁵² During the period from 2006 to 2010, the targets of the project included: (i) 100 percent of provinces will implement the project; 70 percent of communes will integrate the model of mental health care in the community into the activities of the commune health station; (ii) 50 percent of cases of mental illness (schizophrenia, depression and epilepsy) will be detected and treatment managed in the community; and (iii) 70 percent of mentally ill patients that have been detected will have their treatment stabilized, and patient integration with families and communities will be supported.

The current project on Protection of mental health in the community and among children in the National health target program for the period 2012-2015⁵³ has four specific objectives, namely: (i) early detection, management and treatment for 90 percent of epilepsy patients nationwide; (ii) implementation of epilepsy management in 90 percent of communes; (iii) stabilized treatment and avoidance of relapse in 85 percent of epilepsy patients nationwide; (iv) rehabilitation and reduction in the proportion of chronic disability to below 20 percent of epilepsy patients that have been diagnosed and managed. Responsibility for implementation of the project has been assigned to the National Institute of Mental Health Number 1.

Besides the Ministry of Health Project on protection of mental health in the community and among children, the Ministry of Labor, Invalids and Social Affairs (MOLISA) is implementing Project 1215 on social support and community-based rehabilitation for mental illness and mental disorders for the period 2011-2020.⁵⁴ The Project's specific objectives are (i) provide rehabilitation services in social welfare centers for 90 percent of mentally ill people who are dangerous to their family and community and homeless mentally ill people; (ii) provide counselling, psychotherapy and social work services to 90 percent of mentally disturbed people at risk of becoming mentally ill; (iii) raise awareness and support psychiatric rehabilitation in the community for 100 percent of families with a mentally ill member and 70 percent of people with mental disturbances who are at risk of becoming mentally ill; (iv) formulate teams of social work staff working together with health workers to support and rehabilitate mentally ill people in communes that have high prevalence of mental illness. This project has officially been implemented only since 2012, therefore, there is inadequate information to assess impact.

⁴⁹ Prime Ministerial Decision No. 196/1998/QĐ-TTg dated 10 October 1998.

⁵⁰ Prime Ministerial Decision No 77/2002/QĐ-TTg dated 17 June 2002.

⁵¹ Prime Ministerial Decision No 108/2007/QĐ-TTg dated 17 July 2007.

⁵² Note that in Vietnam epilepsy, a neurological disorder, is classified as a mental illness as the term for mental illness commonly used in Vietnam (tâm thần) covers both neurological and mental illness.

⁵³ Prime Ministerial Decision No. 1208/QĐ-TTg dated 4 September 2012.

⁵⁴ Prime Ministerial Decision No. 1215/QĐ-TTg, dated 22 July 2011.

5.1. Implementation results

The National health target program component project on protection of mental health in the community and among children has been implemented in all provinces, managed patients in the community, reduced stigmatization of patients with mental and neurological disorders (Table 37). In 2013, more than 23 percent of communes, had implemented the community-based mental illness management model, with commune health station managing about 34 percent of schizophrenic and epileptic patients. The IEC program to increase community awareness of the mental health program has implemented activities aimed at reducing stigma and discrimination against people with mental disorders. Technical guidelines on screening, early detection and management of people with mental disorders have been developed by the Project for the protection of mental health in the community and among children, although they still need to be standardized to become national guideline materials.

The Government has implemented a policy of providing financial support to people with mental illness. The Government has a policy to provide a minimum of 270 000 VND per month for people with mental illness (i.e. who have been certified by specialized medical agency to have a mental illness that has been treated many times but not lessened in severity) who are living in the community and managed by the commune. People with mental illness who are living in social welfare facilities are financed in the amount of 450 000 VND per month.⁵⁵ In reality in some provinces, the amount of the subsidy is higher than this minimum entitlement because of additional support paid from the local budget.

Table 37: Evaluation of performance of the project on protection of mental health in the community and among children compared to objectives, 2011-2013

Objective/activity	2011	2012	2013 (Est.)
Implement the project on protection of mental health in the community and among children (number of communes)	782 (7.1%)	1 771 (16.0%)	2 541 (23.0%)
Detect and management and treat early 90 percent of epilepsy patients nationally (Number of patients)	11 730 (7.2%)	44 175 (26.8%)	55 725 (33.8%)
Treat, prevent relapse of 85 percent and provide early treatment for 90 percent of epilepsy patients (number of patients)	9 970 (6.0%)	37 548 (22.7%)	47 366 (28.7%)
Rehabilitate, reduce disability to below 20 percent for epileptic patients detected and being managed (number of patients)	1 700	6 000	8 000

Source: Ministry of Health, Báo cáo Sơ kết 3 năm (2011-2013) thực hiện Chương trình mục tiêu quốc gia y tế (Kèm theo Công văn số 4435/BYT-KH-TC dated 19 July 2013.

5.2. Difficulties and shortcomings

Policies on mental health care lack comprehensive and long-term vision. A Law on Mental health has not yet been developed. Current policies are not based on an overall, comprehensive and long-term strategy with a vision, goals and concrete solutions for mental health. The project on protection of mental health in the community only focuses on schizophrenia, epilepsy and depression and does not yet cover other common mental disorders, and doesn't pay special attention to certain vulnerable groups like children, youth, pregnant and post-partum women,

⁵⁵ Government Decree No. 13/2010/ND-CP dated 27 February 2010.

people in prisons and people suffering mental disorders after disasters. Management of patients with depression currently is only implemented in a few pilot models, and has not yet been integrated into the regular management program. There are no interventions related to reducing risk factors for mental illness in the community, school, family and workplace.

Relevant sectoral agencies are not yet collaborating with each other and interventions are spread too thinly in a mix of social and medical interventions. Inter-sectoral cooperation is very limited, particularly cooperation between the health sector and labor, education, justice and public security sectors. No clear division of responsibilities has been made between the health and labor sectors for provision of mental health care in the community. There is no national inter-sectoral specialized committee working on mental health. Within the Ministry of Health there is no government officer or unit with dedicated responsibility for mental health issues. There is no financial mechanism to maintain mental health activities in management agencies. There is no system for monitoring and evaluating impact of the Project on protection of mental health in the community and among children.

There are many shortcomings in current IEC on prevention and control of mental illness. No comprehensive program or plan for IEC on mental health has been developed. No impact evaluations have been done of existing IEC programs. Community IEC activities through the local loudspeaker network (low cost, high impact) or integrated into commune health activities have received little attention due to lack of resources. IEC on mental health is only implemented in communes that are implementing the NTP project on mental health. There is no policy on financial support for IEC through mass media such as television, radio at the central or local levels (such as preferential rates for mental health IEC through these forms of mass media), so mental health IEC is only implemented when Project funds are available. Skills in IEC and counselling among health workers are limited. Integration of IEC on mental health and mental illness with general health IEC programs is still uncommon.

Severe shortage of human resources in mental health care. Vietnam is one of the countries with the most severe shortages of mental health specialists. Most health workers involved in diagnosis, treatment and management of mental illness, particularly at district and commune levels, have not been adequately trained. Very few training courses on mental health care are provided for commune health station staff or village health workers [213]. One of the most important barriers impeding the ability to attract health workers to specialize in mental health is inadequate remuneration, even with the current 70 percent salary supplement applied to health workers directly involved in testing, examining, treating and caring for mentally ill patients. Human resources for mental health care in Vietnam mainly include doctors and nurses. However, to provide comprehensive and effective mental health care, personnel from other fields are also needed such as psychologists, social workers and rehabilitation specialists. Vietnam has few psychology experts working in mental health care facilities. A social worker workforce is being established and trained through implementing the Project on development of social work occupations 2010-2020.⁵⁶ However, the shortage of mental health workers and their quality and the attractiveness of the mental health professions are major challenges for the health system and will require comprehensive measures.

Screening for early detection of mental disorders is mainly implemented through selective population-based screening, which is costly and not very effective. Currently screening for early

⁵⁶ Prime Ministerial Decision No. 32/QĐ-TTg dated 25 March 2010.

detection of mental disorders is implemented through the organization of screening visits by a team from the provincial or central mental hospital or specialized mental health facility who come to the commune health station to examine people at risk or who are suspected of having mental disorders. This screening model requires large scale organization and is complicated, costly and wasteful of human and financial resources in the context of a less developed country with limited financial resources for the Project. Screening for mental health disorders during regular healthcare visits has received little attention nor has it been encouraged.

The grassroots and primary health care network lacks competencies in diagnosis, treatment and management of mental illness. Almost all cases of mental disorders must have a confirmed diagnosis performed by provincial or central level specialist mental health care facilities. District hospitals participate rarely in examination, diagnosis, treatment and management of mental illness. The main form of intervention is support from provincial mental hospitals and mental health specialty facilities directly at the commune level. In only a few provinces do district health centers have mental health clinics providing services (such as HCMC). Commune health stations mainly participate in managing mental illness following instructions in the patient record provided by the provincial mental health specialist facility. Professional interventions for mentally ill patients in medical facilities focus primarily on drug therapy, while other interventions, such as counselling, rehabilitation, psychotherapy, occupational therapy and social support, have not been emphasized.

Management of drugs for mental health treatment has substantial shortcomings. Even though essential drugs for treatment of schizophrenia and epilepsy are supplied for free through the Project, supply is not stable and some of the drugs have significant side effects. Patients with schizophrenia and epilepsy are not being prescribed newer generation drugs (with fewer side effects) that are included on the Ministry of Health Essential drug list.

Monitoring and surveillance of mental illnesses and risk factors are not implemented fully or in a uniform manner. An epidemiological survey of common mental illnesses was implemented in 2002, but has not been repeated, inhibiting the ability to assess trends and changes in morbidity patterns for mental disorders. The reporting system of the Project has not received supervision to ensure quality.

5.3. Recommendations

Short term

- Develop a National strategy on mental health for the period 2015-2020, with concrete and feasible objectives and targets, assigning responsibility and duties to different sectors and mass organizations, and including an activity monitoring and evaluation framework.
- Strengthen leadership, management and effective inter-sectoral cooperation for mental health through establishing a national steering committee on mental health with clear operating principles, action plans and mechanisms for maintaining committee activities.
- Develop and standardize training materials and training curriculum on mental health. Develop training materials and curriculum for both mental health care and social care. Finalize technical medical guidelines for screening, diagnosis and treatment of mental disorders. Review and revise professional medical guidelines on mental health examination, drug prescribing and management of mental illness.

- Review current financing mechanisms, ensure sustainable sources of funding for mental health care from health insurance and the state budget.

Longer term:

- The Ministry of Health should propose to the Government and National Assembly to develop a Law on Mental health.
- *Provide mental health services and comprehensive integrated social care based in the community.* Standardize comprehensive models for mental health including medical services and social care, support and rehabilitation of people with mental illness in all ages (including access to opportunities for employment, housing, education and community activities). In particular, pay attention to mental health care for children, women, the poor, and people suffering after trauma of natural disasters.
- *Develop and complete policies aimed at shifting long-term care and treatment for certain mental illnesses* from specialized mental health facilities towards non-specialized health settings and the network of linked community-based mental health services, including short-term inpatient care, outpatient treatment in general hospitals, primary care, centers for mental health and daytime care centers [214].
- The Ministry of Health should serve as the lead agency to collaborate with other related sectors to strengthen capacity of health, education and social workers to provide mental health care services and social care, especially non-specialist care services. Develop a network of social workers, clinical psychologists to meet the needs for mental health care. Develop and implement a monitoring and evaluation framework for the strategy.

Chapter VI: Strengthening the health system response in NCD prevention and control

To respond to the goal of prevention and control of NCDs, health systems must be strengthened and reoriented, through people-oriented primary health care and universal coverage.⁵⁷ This chapter will analyze and evaluate the NCD response, including difficulties and limitations for each component of the Vietnamese health system including: governance, human resources, financing, pharmaceuticals and equipment, health information system and health service delivery. From this analysis, priorities will be identified and proposals made for measures to strengthen the ability of the health system to more effectively respond to prevention and control of NCDs.

1. Governance

According to WHO, 80 percent of cardiovascular disease, stroke and type 2 diabetes as well as 40 percent of cancers could be prevented through risk factor prevention and control interventions [215]. Because many NCDs have common behavioral and lifestyle risk factors, control of risk factors to prevent NCDs requires multi-sectoral collaboration while care and treatment of chronic NCDs requires integration and tight and continual coordination between levels of the system, between service providers, between health workers and patients. “Whole of government” and “whole of society” approaches and multi-sectoral action are basic principles of NCD prevention and control.

In order to propose measures to strengthen effectiveness of NCD prevention and control, an assessment of implementation of management functions for NCD prevention and control in the Vietnamese health system is presented below, based on the “whole of government” approach and multi-sectoral actions, following major goals of the WHO Strategy for prevention and control of NCDs for the period 2008-2013, the Global action program for prevention and control of NCDs for the period 2013-2020 and the WHO Action plan for mental health 2013-2020 (for details see Chapter III, section 3.5).

In the Global Action Plan for the Prevention and Control of NCDs 2013-2020, WHO recommends four policy options to strengthen effectiveness of governance of the health system to respond to NCDs including: (i) exercise responsibility to ensure the availability of NCD prevention and control services in the health system; (ii) use participatory community-based approaches in designing, implementing, monitoring and evaluating inclusive NCD programs across the life-course and continuum of care to enhance and promote response effectiveness and equity; (iii) integrate NCD services into health sector reforms and plans for improving health system performance; and (iv) orient the health system towards addressing the impacts of social determinants of health, including through evidence-based interventions supported by universal health coverage.

1.1. Results and progress

Vietnam has developed and implemented several policies on control of joint NCD risk factors and NTPs for prevention and control of NCDs.

⁵⁷ The fourth of six goals of the WHO Global Action Plan for the Prevention and Control of NCDs, 2013-2020.

Up till the present, Vietnam has developed and issued a system of policies and health programs related to NCD prevention and control, including some that directly address general NCD prevention and control; concrete projects aimed at specific diseases: cancer, diabetes, hypertension and COPD and policies related to control of risk factors (see details in Chapter IV) [210].

Results and achievements in developing policies on control of risk factors and NTPs on NCD prevention and control were discussed in detail in Chapter IV and V. The section below simply lists the NCD prevention and control programs developed by the Ministry of Health to submit to the Government for approval in chronological order:

National health target programs for prevention and control of NCDs were developed and implemented nationally

- In 1998, the project for protection of mental health in the community was approved by the Prime Minister as part of the national health target programs aimed at prevention and control of especially dangerous diseases. The project focused on schizophrenia and epilepsy and piloted management of depression in the community.
- In 2002, the NCD prevention and control program of Vietnam began to be established according to Prime Ministerial Decision No. 77/2002/QD-TTg dated 17 June 2002: the program focused on prevention and control of four disease groups including cardiovascular disease, diabetes, cancer and mental health disorders.
- In 2007, the project on prevention and control of cancer and the project on protection of mental health in the community were incorporated into the national health target program for the prevention and control of social diseases, dangerous epidemics and HIV/AIDS for the period 2006-2010 according to Prime Ministerial Decision No. 108/2007/QD-TTg dated 17 July 2007.
- In 2008, the project on prevention and control of hypertension and the project on prevention and control of diabetes were added to the National health target program according to Prime Ministerial Decision No. 172/2008/QD-TTg dated 19 December 2008.
- In 2010, the Prime Minister issued decision No. 2331/QD-TTg issuing the list of NTPs for 2011, including the project on NCD prevention and control (including the projects on cancer, hypertension, diabetes, COPD and mental health in the community).
- Most recently, on 4 September 2012, the Prime Minister issued Decision No. 1208/QD-TTg approving the NTPs for the period 2012-2015, including the national health target program, Project 1: prevention and control of diseases dangerous to the community, including leprosy, TB, malaria, dengue, cancer, hypertension, diabetes, protection of mental health in the community and among children and COPD.

1.2. Difficulties and challenges

1.2.1. Priority and political commitment for NCD prevention and control is lacking.

Although policies for controlling risk factors and implementing programs and projects for NCD prevention and control exist, the burden of disease and economic burden due to NCDs has

been inadequately acknowledged, leading to insufficient prioritization and political commitment to NCD prevention and control activities. NCD prevention and control were not mentioned in the XIth National Party Congress documents; financial resources for NCD prevention and control programs have been cut in recent years. At the same time, according to WHO, investments in NCD prevention and control are considered highly cost-effective and affordable to all countries, even lower income countries [125]. Total costs of a package of NCD prevention and control interventions that is cost-effective for both community and individual level would amount to only 2 percent of total health expenditures in lower middle income countries.

The low level of priority assigned to NCD prevention and control is also evident in examining implementation of the principle of health in all policies. The Law on environmental protection stipulates that environmental impact assessment is required but health impact assessment is not; requirements for health impact assessment are stipulated in the Law on infectious disease control, but limits its use to only a few projects.

1.2.2. Policy on prevention and control of NCDs is not comprehensive or adequate

Currently Vietnam lacks a comprehensive policy or strategy for NCD prevention and control, there is no Law on mental health or even a Strategy for protection of mental health. Because a comprehensive strategic plan is lacking, there remain gaps in policies for control of NCD risk factors. Up till now, only one of the four common NCD risk factors is regulated under a Law (the Law on tobacco control). The remaining three risk factors (harmful use of alcohol, unhealthy diet and physical inactivity) (see details in Chapter IV) and factors affecting mental health, are not yet regulated by law.

NCD prevention and control programs only cover a small portion of all NCDs. Five NCD prevention and control programs being implemented only focus on five NCD groups, while the burden of disease of these five groups (in terms of DALYs) only accounts for about one third of burden of disease due to NCDs in Vietnam. Thus, the remaining NCDs, accounting for two-thirds of NCDE burden of disease, remain outside of any current NCD programs (details of coverage of NCD control programs in terms of DALY are presented in Chapter III of this report).

1.2.3. Organize and direct management of NCD prevention and control appropriate with the principles of “whole of government”, “whole of society”, and multi-sectoral actions

NCD prevention and control requires multi-sectoral action and “whole of government” and “whole of society” approaches. NCDs are partially attributed to socio-economic factors that are outside the scope of health sector interventions. As a result, it is necessary to have “whole of government” and “whole of society” participation and collaboration for development and implementation of inter-sectoral policies that affect socio-economic factors that are beneficial to health and prevent behaviors that increase risk of NCDs.

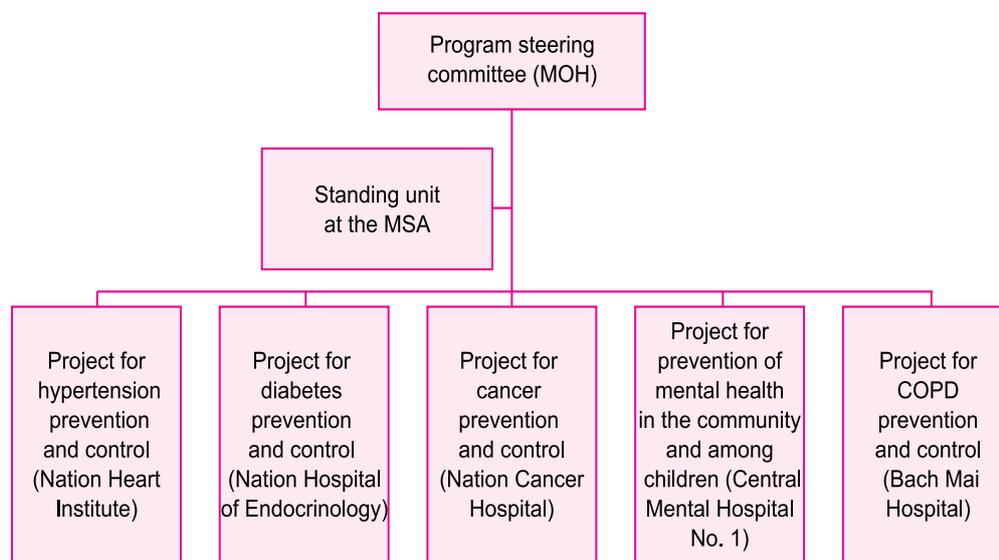
At the High-level Meeting of the General Assembly on the Prevention and Control of NCDs (September 2011), leaders of each country and government throughout the world made commitments to establishing and strengthening multi-sectoral policies for NCD prevention and control and integrating policies and programs for NCD prevention and control into national development plans and health sector plans [132].

The NCD prevention program steering committee of the Ministry of Health⁵⁸ only includes members from the health sector: the committee chair person is the vice minister of health, the standing deputy chairperson is the director of the MSA, another deputy chairperson is the director of the General Department of Preventive Medicine. Members are representatives of the leadership in various Ministry of Health departments and administrations and central level medical facilities and a few experts from related departments, administrations and hospitals participating in the Secretariat (Figure 51).

The functions and tasks of the NCD prevention and control steering committee have not ensured multi-sectoral action and collaboration with agencies outside the health sector: the Committee has the task of developing and implementing strategies and action plans, programs, projects on NCD prevention and control; proposing development of legal documents on NCD prevention and control to submit for approval from the relevant authority; monitoring, checking, surveillance and evaluation of performance in implementing activities of the programs and projects for NCD prevention and control and on an annual basis, reviewing the NCD prevention and control program to report to the Minister of Health and relevant agencies on the progress and performance.

Although the function and tasks of the NCD program steering committee is in line with the management and administration mechanism for implementing NTPs of the Government,⁵⁹ they do not facilitate the implementation of a multi-sectoral collaborative role, one of the basic principles of NCD prevention and control activities.

Figure 51: Diagram of the organization of NCD prevention and control programs



1.2.4 Integration of NCD prevention and control

For a long period of time, NCD prevention and control activities in developing countries were organized and implemented through vertical programs as national health target programs, each program focused on one disease or disease group. However, because NCDs have increased in prevalence, require life-long care, must be prevented already from when people are children,

⁵⁸ The NCD prevention and control steering committee was established under Minister of Health Decision No 2812/QD-BYT dated 3 August 2011.

⁵⁹ Prime Ministerial Decision No. 135/2009/QD-TTg dated 4 November 2009.

have shared risk factors, reliance on vertical programs for NCD prevention and control is no longer appropriate. The most appropriate solution for NCD prevention and control is to integrate them into an integrated primary care system [216].

In 2009, the World Health Assembly called on member countries to integrate NTPs into integrated primary health care [217]. Integration in relation to NCD prevention and control, first of all, according to WHO, requires integration of NCD prevention and control into primary health care. This is evident in the fourth goal of the Global Action Plan for the Prevention and Control of NCDs 2013-2020. The goal is “to strengthen and orient health systems to address the prevention and control of NCDs and the underlying social determinants through people-centered primary health care and universal health coverage.”

WHO recommends NCD prevention and control to be integrated in the following ways [125]:

- Integrate training on NCD prevention and control in the health worker training curriculum;
- Integrate NCD prevention and control services into primary care activities, and primary care network should be integrated with secondary and tertiary specialist care units;
- Integrate mental health care and treatment into general hospitals and the primary care network [206];
- Meet the requirements for long-term care among NCD patients, with any co-morbidities or disabilities that go along with those diseases, through integrated health care models, needs of patients with NCDs, linked with occupational health care, community health care and the entire medical service delivery system;
- Integrate monitoring and surveillance of risk factors and NCDs in the available health information system.

NTPs for prevention and control of specific NCDs in Vietnam currently are designed as fragmented vertical programs, resources for implementing programs are monitored and managed separately, each program and project is coordinated by a specialist hospital. Therefore, it is difficult to implement integration between the programs from the central to local levels, and there is little integration with the overall health service delivery system. The organization and coordination of current programs have the following shortcomings:

The organization of the Steering committee does not easily allow for integration of NCD programs or for multi-sectoral action.

All members and the secretary of the NCD prevention and control steering committee⁶⁰ perform their committee functions in addition to their main, rather substantial responsibilities in the health sector (Deputy Minister of Health, directors of departments or hospitals). The components projects operate completely independently from each other (Figure 51), because the steering committee within each hospital directly manages the activities.

Membership, functions and tasks of the Steering committee, although they are appropriate with the current procedures⁶¹ for managing implementation of NTPs, nevertheless cause substantial difficulty in implementing the multi-sectoral collaboration, a basic principle of NCD prevention and control programs.

⁶⁰ According to Ministry of Health Decision No. 2812/QĐ-BYT dated 3 August 2011.

⁶¹ According to Prime Ministerial Decision No. 135/2009/QĐ-TTg dated 4 November 2009.

Lack of integration between component projects in the overall NCD prevention and control at the central and local levels

Tertiary hospitals including the National Heart Institute, the National Hospital of Endocrinology, the National Cancer Hospital, the Central Mental Hospital No. 1 and Bach Mai Hospital were assigned responsibility to lead the component projects of the NCD prevention and control program. Each component project has its own project management committee, responsible for planning activities on an annual basis and organizing implementation after the plan is approved; provide steering and professional guidance for the provinces; managing and using project funds and every 6 months providing a report to the NCD prevention and control program steering committee. Each component project operates entirely independently of each other (Figure 51).

Because of the vertical program design, at the provincial level there is also no single focal unit to jointly manage and administer in an integrated fashion the NCD component projects; a diverse set of local health sector units implements the component projects at the province level.

1.2.5. Investment in research for NCD prevention and control is not commensurate with the burden of disease attributed to NCDs

The limited financial resources from the state budget for prevention and control of NCDs has been focused largely on IEC to increase awareness in the community, training of health workers, development of screening models, development of patient treatment and management models and monitoring and evaluation. According to current regulations, financial resources from health insurance are only allowed to be used for treatment. Therefore the investment in research for NCD prevention and control remains limited, inadequate for implementing surveys and research in a systematic way to provide comprehensive information on the NCD situation.

1.3. Priority issues

- The burden of disease attributed to NCDs has not been adequately recognized, and NCD prevention and control have not yet been sufficiently prioritized.
- There is not yet a comprehensive and long-term national NCD prevention and control strategy or mental health protection strategy;
- NCD prevention and control component projects are designed, organized and implemented as vertical programs with autonomous activities; there is almost no integration between programs at the central and local levels, nor are NCD prevention and control activities integrated into the overall health system
- The members of the Steering Committee for Prevention and Control of NCDs is inappropriate with the principle of multi-sectoral action; the fact that all members of the Steering committee hold high level management positions in the health sector and are not available to work full time on this work is inappropriate with the functions and tasks assigned to the Committee.
- There is inadequate research on NCDs to meet the need for developing and selecting policies for NCD prevention and control;

1.4. Recommendations

- Strengthen IEC, and promote strengthening of awareness of the disease burden and economic burden due to NCDs to promote NCD prevention and control to be a national priority, which should be taken into account in developing and implementing national socio-economic development plans; Strategic plan for NCD prevention and control for the period 2015-2025 and a vision to 2030 should be developed and issued.
- The strategy for NCD prevention and control must ensure basic principles following WHO recommendations, including multi-sectoral action, evidence-based selection of interventions, management of conflicts of interest, and an equity approach.
- The inter-sectoral steering committee for NCD prevention and control should have the participation of representatives of various ministries, sectoral agencies and social organizations to ensure multi-sectoral leadership and collaboration; should ensure that some members work full time on the Committee, and that funds are allocated to ensure more effective leadership and management of the committee functions.
- Regarding integration of NCD prevention and control: implement integration following a clear roadmap, starting from choice of activities to integrate between vertical programs in the initial period, moving towards comprehensive integration of activities into the health system. Conditions to permit comprehensive integration of NCD prevention and control services into the health system include the existence of an integrated primary care network and sufficient health workers with professional training in NCDs [125], as well as sufficient necessary equipment for IEC, counselling on prevention, health promotion, early detection, treatment, rehabilitation, palliative care, management of NCD patients. Thus, even in the early stages, along with integration of some activities between vertical programs, it is necessary to implement a strategic plan to strengthen capacity of the health system to provide medical services centered on a primary care foundation, aimed at improving quality, effectiveness, accessibility and affordability.
- Activities that can be integrated between NCD component projects in the initial period include IEC, continuing medical education and screening for early detection.

2. Health human resources

Policy options aimed at human resources development to respond to NCDs that have been recommended by WHO [125] include: (i) identify competencies required and invest in improving knowledge, skills and motivation of the current health workforce and plan to address projected health workforce needs in the future; (ii) incorporate the prevention and control of NCDs in training of all health personnel including social workers, with emphasis on primary care; (iii) provide adequate compensation and incentives for health workers to serve underserved areas; (iv) strengthen post-graduate training specialized in NCDs for health workers and pharmacists and other staff involved in caring for patients with NCDs; (v) optimize the scope of nurses' and allied health professionals' practice to contribute to prevention and control of NCDs, including addressing barriers to that contribution; and (vi) strengthen capacities for planning, implementing, monitoring and evaluating service delivery for NCDs.

WHO recommended policy options mentioned above have been considered in the analysis and evaluation of the current situation, identification of priorities and proposals for measures to develop human resources for NCD prevention and control.

2.1. Results and progress

2.1.1. Deployment of human resources for health

The health workforce, including health workers in the field of NCDs, continues to grow. Shortages remain in some fields like pathology, but there are no longer problems of severe shortages, except for the field of mental health. The number of doctors, including doctors specialized in NCDs, has increased over the years reaching 7.5 doctors per 10 000 people in 2013. In order to resolve the shortage of health human resources, various solutions related to training have been implemented over the past 2 decades, such as increasing intake quotas at medical schools and prioritizing training of health workers with commitments to return to their origin areas in rural and disadvantaged regions. In addition the Ministry of Health has also introduced some specific measures on human resources deployment. Project 1816, which began implementation in 2008, has sent experienced doctors from higher level facilities to support and transfer technology to lower level facilities. In the first year, 1037 higher level health workers were sent to help the lower levels for periods ranging from 1 week to 3 months. Some 19 specialties were involved including internal medicine, oncology, endocrinology and mental health. In the first year after implementing this project, it is estimated that the number of patients referred to higher level facilities was reduced by about 30 percent [218]. The Pilot project to send newly graduated doctors voluntarily to serve mountainous, remote, isolated, border, island and other socio-economically disadvantaged areas (with priority on the 62 poorest districts) was approved by the Minister of Health and began implementation in 2014.⁶² It is estimated that by 2016 there will be about 500 newly graduated doctors working in remote, isolated, border, island and other socio-economically disadvantaged regions, with priority on the poorest 62 districts.

Health workers working in the fields of NCDs receive remuneration similar to health workers in the general health system. However, because of difficulties attracting staff, health workers in the field of mental health, like TB and HIV, are given greater priority with higher remuneration.

Decree No. 56/2011/ND-CP dated 7 April 2011 stipulated priority salary supplements for health workers in state health facilities. According to this policy, health workers who directly participate in examining, treating or caring for patients will receive a salary supplement of 20 to 70 percent of base salary depending on the type of work. Health workers examining, treating and caring for mental health patients, one of the specialties with the most difficulty recruiting staff, is among the group receiving the highest supplement level of 70 percent. The Ministry of Health has also collaborated with the Ministry of Home Affairs and Ministry of Finance to issue Circular No. 02/2012/TTLT-BYT-BNV-BTC dated 19 January 2012 guiding implementation of Decree 56. The Government has also issued Decree No. 64/2009/ND-CP dated 30 July 2009 stipulating remuneration for health workers working in regions with especially difficult socio-economic conditions. The Ministry of Health, Ministry of Home Affairs and Ministry of Finance have also issued Joint circular No. 06/2010/TTLT-BYT-BNV-BTC dated 22 March 2010 guiding implementation of Decree 64. These two legal documents stipulate that government staff, including military-medical staff, working in especially disadvantaged regions will receive a priority salary supplement level of 70 percent of the base salary currently being received based on position and years of experience. In addition, health workers serving these disadvantaged

⁶² Ministry of Health Decision No. 585/QD-BYT dated 20 February 2013.

areas also receive subsidies for travel, studying, professional development. For example, they receive 100 percent of school fees, transport funds and may even receive free housing. For regions with inadequate drinking water, health workers are also given a budget for purchasing and transporting drinking water. The Prime Minister has also issued Decision No. 73/2011/QĐ-TTg dated 28 December 2011 stipulating additional salary supplements for health workers in government health facilities and for epidemic control. The Ministry of Health collaborated with the Ministry of Home Affairs, Ministry of Finance, Ministry of Labor to issue Circular No. 10/2014/TTLT-BYT-BNV-BTC-BLDTBXH dated 26 February 2014 to guide implementation of some articles of Decision 73. These legal documents stipulate the salary supplements for overnight work, performing surgery or procedures, for health workers.

To guide implementation of Circular No. 07/2005/TT-BNV dated 5 January 2005, the Ministry of Health has issued an official correspondence no. 6608/BYT-K2DT dated 22 August 2005 guiding details of salary supplements for dangerous or toxic work for health sector staff. Accordingly different salary supplements are paid for health workers with differing levels of dangerous or unpleasant conditions.

In 2013, the Government issued Decision No. 317/QĐ-TTg approving the project for maritime development to the year 2020 with goals aimed at strengthening capacity for the health network, developing health human resources appropriate with the particular health care protection and emergency transport requirements of maritime areas, strengthening knowledge and skills of the local population living and working in maritime areas.

2.1.2. Pre-service training on NCDs

Degree granting training programs for doctors and nurses currently includes important NCD-related contents. The university-level training curriculum for general medicine⁶³ has determined that the skills that should have been attained by a newly graduated doctor should include: diagnosis, treatment, monitoring and prevention of common illnesses and basic first aid; preliminary diagnosis of diseases requiring some degree of specialty knowledge, etc.” The training curriculum includes important subjects that provide knowledge and skills about NCDs such as basic internal medicine (8 credits), basic pathology (16 credits), neurology (3 credits), psychiatry (3 credits) and oncology (3 credits). Basic internal medicine provides knowledge and skills to students allowing them to perform comprehensive medical exams, recognize symptoms related to pneumology, cardiology, gastroenterology, emergency medicine, neurology, orthopedics, urology and endocrinology. In the training on pathology, students learn how to diagnosis and treat diseases related to these specialized fields. Neurology also provides knowledge and skills for examining and detecting common neurological symptoms. Psychiatry provides basic concepts about mental health, major risk factors for mental health, symptoms, syndromes in the practice of psychiatry, treatment of emergency situations in mental disorders, organization of care and monitoring of patients in the community, treatment methods and prevention of mental disorders. Oncology provides basic knowledge of cancer, basic diagnostic methods for common cancer types found in Vietnam, prevention and early detection of common cancer types. Besides the knowledge and skills for various diseases, medical students also learn about IEC and health education (2 credits) including healthy behavior, skills, methods and materials for health IEC. These skills are then put into practice in the community in the course

⁶³ General Medicine curriculum in Ministry of Education and Training Circular No. 01/2012/TT-BGDĐT dated 13 January 2012 issuing the University training curriculum framework for the health sciences.

on community practice 1 (2 credits). In the course on community practice 2, students practice design and implementation of diagnosis, basic first aid, monitoring and treatment of health in the family and community, and preliminary intervention plans.

The university curriculum framework for nursing,⁶⁴ in addition to basic general nursing courses, also includes important courses related to care of patients with NCDs including care of adults with internal medicine disorders (10 credits), care of the elderly (2 credits), care of mental health patients (4 credits), care of patients in need of rehabilitation (3 credits) health care in the community (4 credits). The training program also includes 4 credits of training in communication and interactions with patients and 3 credits in health IEC for the practice of nursing. The course on care of adults with internal medicine disorders provides basic knowledge on care of adults who have common internal medicine disorders and some disorders requiring specialist training, implement techniques and procedures for internal medicine care. The course on health care for the elderly provides basic knowledge of changes in physiology and psychology and health problems of the elderly, health care needs for the elderly and the role of nurses, implementation of basic techniques and procedures for nursing care for the elderly. The course on psychiatric care includes basic knowledge on mental health and care of mental illness; treatment methods, care of psychiatric patients; implementation of techniques and procedures for care of people with mental illness. The course on care of people in need of rehabilitation includes basic knowledge on rehabilitation, some physical therapy methods for rehabilitation; the role and tasks of nurses in care of patients and in the community using physical therapy and rehabilitation; implementation of some basic physical therapy and rehabilitation techniques. The course on community health care includes basic knowledge on health care in the community; methods and role of community health, tasks of nurses in care of community health; implementation of skills and procedures for nursing care in community health.

The assistant doctor training program lasts only 2 years, so the contents and training period related to NCDs is also severely limited.

Post-graduate training programs related to NCDs are currently available at universities, institutes and hospitals to provide doctors and other health workers increased depth of knowledge and skills. Programs for Specialist I, Specialist II and Master's degrees in specialties of gastroenterology, pulmonology, nephrology and urology, endocrinology, cardiology, gerontology, neurology, psychiatry and oncology. By 31 December 2013, there were 21 schools, institutes and hospitals providing training for Specialist II qualifications and 27 units participating in training in Specialist I qualifications and 15 units participating in training medical residents and Masters level qualifications.⁶⁵ With this large number of training facilities, in 2013, about 500 people graduated as Specialist II, nearly 2700 people graduated as Specialist I and nearly 300 people graduated as medical resident [219].

To contribute to resolving the shortage of health workers in specific fields of medicine in disadvantaged areas, in 2013 the Prime Minister approved a project encouraging training of health workers in specialties for which it is difficult to recruit personnel,⁶⁶ with specific

⁶⁴ Nursing curriculum in Ministry of Education and Training Circular No. 01/2012/TT-BGDDT dated 13 January 2012 issuing the University training curriculum framework for the health sciences.

⁶⁵ Statistical data from the Administration of Science, Technology and Training of the Ministry of Health, January 2014.

⁶⁶ Prime Ministerial Decision No. 319/QĐ-TTg dated 7 February 2013 approving the Project encouraging training and development of health human resources in the specialties of TB, leprosy, mental health, forensic medicine and pathology for the period 2013-2020.

targets related to health workers specialized in mental health, as follows: (i) by 2020, 600 health workers specialized in mental health will be trained in post-graduate programs; (ii) 90-100 percent of central level hospitals and institutes and training facilities will have adequate personnel specialized in TB, leprosy, mental health, forensic medicine and pathology; (iii) 70-90 percent of provincial level hospitals and institutes and training facilities will have adequate personnel specialized in TB, leprosy, mental health, forensic medicine and pathology; (iv) 50-70 percent of district hospitals will have adequate personnel specialized in TB, leprosy and mental health. Measures to encourage training in these specialties include development and implementation of incentives and conditions that encourage university students and trainees to obtain specialist training. In addition, measures are in place to ensure necessary conditions for specialized health workers in these 5 specialties to work effectively, long-term and sustainably in medical facilities in order to meet the need for diagnosis and treatment in these specialties at all levels of facilities throughout the country.

2.1.3. Continuing medical education

Professional development activities in various NCD projects and programs have begun to be implemented according to plans. Projects and programs apply relatively uniform training strategies including orientation to specialty (short-term specialist training for a few months), short-term training on specific narrow topics, professional training, management training and IEC training. Almost all programs and projects have training courses for the central, provincial, district and commune levels for different level qualifications with the intention of strengthening capacity for the entire health system. In 2013, the diabetes component project organized 74 training courses for 3369 health workers and organized specialty orientation training for 34 trainees, training to update knowledge for the provincial level in Thanh Hoa and Hoa Binh provinces, screening skills training for the system, training on care of diabetics for nurses, and training on IEC [220]. The component project for prevention and control of cancer has implemented training and technology transfer activities, training on prevention and early detection of some types of cancer, training on palliative care at the provincial level and prepared training materials [221]. The sub-project on mental health protection in the community and among children has organized central, provincial and commune level training [222].

In addition to the training courses of NCD prevention and control projects, NGOs, professional medical associations, hospitals and universities are also organizing health worker training on NCDs with different scope, coverage and sources of funding.

Hospitals in specialties related to NCDs are also in the process of organizing and managing continuing medical education activities. In 2013, the Ministry of Health issued Circular No. 22/2013/TT-BYT dated 9 August 2013 to replace Circular No. 07/2008/TT-BYT dated 28 May 2008 guiding continuing medical education for health workers. The new circular provides guidance and more concrete stipulations on the organization and implementation of continuing medical education. Many central hospitals have registered and been recognized as meeting requirements for providing continuing medical education to health workers, such as the National Endocrinology Hospital, Bach Mai Hospital, Viet Duc Hospital and the National Cancer Hospital. Pilot CME accreditation will begin in 2015.

2.2. Difficulties and challenges

Health workers in the field of NCDs have been assessed as having inadequate skills, being insufficient in number and lacking uniformity in quality [220]. Reports of NCD prevention and control programs all mention this gap. Various reasons exist for these shortfalls including the lack of specialist post-graduate training in some fields like metabolic disorders [209], or lack of students choosing to specialize in psychiatry. The current health workforce that has the capacity to diagnose and treat NCDs is mainly located in major cities such as Hanoi, HCMC, Hue and Da Nang, and tends to be concentrated in tertiary care facilities. At the provincial level, human resource capacity is limited because of the lack of training and guidance by experienced specialists. Grassroots level health workers (district and commune) have low levels of understanding about NCDs [207].

Current competencies of health workers at the commune level do not allow these facilities to meet requirements for management of NCD and chronic diseases. Both domestic and international reports confirm the important role of the grassroots health system in management of NCDs. Vietnam has an extensive network of grassroots health facilities in all communes and wards. By the end of 2012, the number of health workers in commune health stations reached about 70 000 people, that is 6.1 health workers per commune health station. However, most of these health workers have only secondary and junior college-level training such as assistant doctors, nurses, midwives and pharmacists. Nationally in 2013, 76.9 percent of all commune health stations have a medical doctor, ranging from 63.5 percent of all communes in the Northern midlands and mountain areas to 85 percent in the Southeast and 82.2 percent in the Mekong River Delta [18]. Almost all doctors currently serving the commune health stations are former assistant doctors who received upgrade training to become medical doctors with skills relevant for serving the commune health station. With relatively less qualified recruits, and the lack of any system for quality assessment to determine whether minimum standards have been achieved (for example a test for issuing the medical practice certificate), the quality of these doctors cannot be assured, and in many localities, the people lack trust in these practitioners' skills. Some research of the Health Strategy and Policy Institute has shown that the competencies of doctors and assistant doctors at commune health stations are quite weak [223], that they lack the ability to diagnose and treat common medical conditions such as hypertension. In a study assessing professional competencies of health workers at the commune level, it was found that more than 50 percent of doctors and assistant doctors answered incorrectly when asked questions about cardiovascular disease and other basic medical conditions [224]. Assistant doctors currently participate in prevention and treatment of NCDs at the commune health station, yet the amount of training on NCDs in the assistant doctor curriculum is rather limited, only 5 study credits (about 75 hours) of theory and 4 weeks of practice for all common medical conditions.⁶⁷

Utilization of health workers in NCD prevention and control is wasteful, there is little integration of tasks for health workers between different levels of the system or between facilities at the same level. NCD prevention, control and management is mainly implemented on a disease-by-disease basis and for each individual risk factor with little coordination on actions between risk factors [223]. Health workers themselves do not yet implement their functions and tasks fully because of limitations in their competencies and because the systems monitoring and supervising their work are not effective. The mechanism to encourage professional development

⁶⁷ Assistant doctor curriculum in Ministry of Education and Training Circular No. 19/2010/TT-BGDĐT dated 29 June 2010 issuing the curriculum framework for the health sciences at the technical secondary level.

is weak. The remuneration and human resources management at the lower level facilities are inadequate compared to the important role these health workers play in NCD prevention and control [215].

There is not yet a mechanism for ensuring uniform quality of university and post-graduate training curricula in the health sciences, leading to lack of uniformity in the quality of new medical school graduates. Some training curricula have been assessed as being of low quality [225]. In developed countries and many developing countries, in order to be allowed to practice medicine, doctors and nurses must undertake a national medical licensing exam. This exam can ensure that medical doctors and nurses who graduate from different schools, with different curricula, nevertheless achieve the same basic competency levels to meet the requirements of their occupation. However, in Vietnam, this type of exam does not yet exist, thus there is no common standard for assessing quality of health worker training from different medical schools, and medical practice licenses are not issued based on an examination to assess professional qualifications.

Remuneration policies prioritizing health workers in general, and the specific ones for disadvantaged regions or specialties have been issued, but there remain some shortcomings. The amount of the salary supplements is still not high enough to attract health workers to work in disadvantaged areas where working and living conditions are poor. For people who are eligible for both priorities (related to location or to specialty), they are only allowed to receive the one that would be highest, but not the combination of both. Thus, the highest level is 70 percent, which is insufficient to encourage skilled health workers to accept to work in disadvantaged areas or specialties. This is evident in the shortage of health workers in mental health, a specialty with low potential for earning income outside of the official salary.

Quality of some degree-granting training programs is not assured, leading to weak capacity for NCD prevention and treatment among new medical graduates. In recent years, in order to meet the need for health resources in the provinces, the Ministry of Education and Training permitted medical doctor training for local people from disadvantaged areas who committed to returning to their origin localities to serve after graduation for provinces with shortages of doctors and university-trained pharmacists. Under this training modality, applicants to medical school who had exam scores slightly too low to get in through official student recruitment processes, would be admitted with the condition that after graduation they must return to be deployed by the localities from which they came. In the 4 years from 2008 to 2011, 3357 medical students and 1355 pharmacy students were recruited through this policy [226]. This is a preferential policy for development of health workers in disadvantaged provinces. However, in reality, this training modality is being abused. Many people who graduate do not accept work positions assigned to them by their localities, or ask to reimburse the training costs in order to apply for work in other places [227].

Effectiveness of training in NTP projects on NCD prevention and control is low. The training activities all set targets based on number of health workers to be trained, but there are no clear goals for the outcomes of training. Evaluation of training effectiveness of programs and component projects related to NCDs remains limited. In addition, each program and project only focuses on a few localities, while NCDs are prevalent in all localities.

Continuing medical education for lower level facilities is being organized separately for each disease, rather than in an integrated fashion, which could better ensure sharing and collaboration in implementing NCD patient care and save on resources. NTPs in the health sector have limited financial resources, thus limiting the number of health workers that can be trained each year. Project training activities funded by external assistance account for only a small share of the total or are of small scale, training few health workers. With the slow pace of scaling up training and the current intervention strategies, it will be many years before training covers the entire country.

Training activities of some training centers in hospitals lack a clear orientation. Some central hospitals, despite being overcrowded and in addition to their in-depth NCD specialist training programs, also get involved in organizing training in fields for which universities would provide more effective training.

2.3. Priority issues

To contribute to improving prevention, treatment and management of NCDs, it is necessary to prioritize measures for the following issues:

- Health workers in the field of NCDs, including provincial, district and commune levels, are in short supply and of poor quality, partly due to inappropriate deployment.
- Professional qualifications of commune health workers are inadequate to meet the requirements for NCD prevention and control, and management of patients with chronic disease.
- Quality of newly graduated health workers is not uniform nor assured;
- The strategy for continuing medical education is inappropriate and ineffective, and has not led to substantial improvements in the number and competencies of health workers.

2.4. Recommendations

- *Deploy health workers appropriately for NCD prevention and control:* There is a need for clear classification of the functions and tasks for NCD prevention and control (integration of tasks of prevention, control of risk factors, care and disease management); the required level of specialization required at different levels of the health system; and the functions and tasks of various specializations (for each NCD) for each level of the health system. In particular, the grassroots level should effectively provide primary health care for NCD prevention and control, while the higher level facilities should have the tasks of providing specialist support, training, monitoring, and provide specialized treatment. There is a need to strengthen remuneration to encourage health workers to work at the grassroots level.
- *Strengthen continuing medical education activities that are integrated across NTPs and component projects and agencies,* appropriate with the needs of each level of care, with monitoring of training quality and clear identification of target outputs. Continue to organize training courses on NCD prevention, control and management, but integrate the contents, appropriate with the tasks of each level, prioritizing training of grassroots health workers. Activities of training should be combined with post-training support and

supervision. Forms of supervision need to be improved, including support through the internet, telephone (Currently HCMC medical and pharmaceutical university is providing such support for family doctors). Continuing medical education on NCD prevention and control requires clear investments, monitoring, tight supervision to ensure quality of training. In conditions where commune human resources remain weak, it is necessary to develop simple and clear treatment guidelines for management of NCD cases.

- A policy and facilitating mechanism should be put in place to encourage grassroots healthcare workers to participate in continuing medical education, to strengthen forms of training and provide continuing support at the workplace for commune health workers. Along with policies encouraging participation in continuing medical education courses, measures requiring mandatory participation in continuing medical education such as time-limited medical practice certificates, implementation of checking on professional skills before issuing medical practice certificates instead of issuing life-time licenses as is currently done, however this should only be done when Vietnam is able to organize transparent, fair, nationwide examinations.
- *Organize support for professional development for health workers in the field of NCDs directly in the workplace.* For example: specialist II doctors can support specialist I doctors and specialist I doctors can support newly graduated doctors, v.v. Technical support from higher level to lower level facilities can be through the phone or internet. Such forms of support must be considered as mandatory tasks for all health workers.

3. Health financing

3.1. Results and progress

In the face of rising prevalence and disease burden from NCDs, Vietnam has responded with various health financing policies with implications for NCDs. These include recurrent budget funds as well as investment funds from the state budget, policies related to the health insurance package and other sources of funding.

The state budget has provided funds for NCD prevention and control projects since 2002. Total funds budgeted for NCD programs in the two years 2012-2013 amounted to nearly 200 billion VND (Figure 52). Although funds budgeted by the government for NTPs is limited, it is still a stable source of funding for activities of the NCD component projects. The main activities funded by the state budget include training health staff, screening, development of patient treatment management models, IEC and monitoring and evaluation.

Figure 52: State budget funds allocated for NCD prevention and control projects in the National health target program, 2012-2013

Source: Official letters from the Ministry of Health on State budget allocation for NTPs (No. 305/BYT-KH-TC dated 17 January 2012; No. 6941/BYT-KH-TC dated 11 October 2012). Although funds allocated by the government are limited, the state budget nevertheless provided a stable source of funding to ensure implementation of planned activities in the NCD prevention and control projects within the national health target program. The main activities implemented using these funds include: health worker capacity building, screening, development of models for managing patient treatment, IEC and monitoring and evaluation.

Besides state budget allocations for recurrent spending, the state capital budget has also been used for construction, upgrading and expanding facilities specialized in NCD treatment. According to Project 930/QD-TTg (2009) state budget funds have been allocated for infrastructure development in 35 specialist mental hospitals and five oncology centers and hospitals.

In addition, funds from health insurance are also an important source of funding for NCD examination and treatment. Along with expanding health insurance coverage to achieve universal health insurance, the benefits of the insured continue to be expanded, to meet the growing needs for examination and treatment among the insured, including growing need for NCD treatment. The list of drugs reimbursed by health insurance according to Circular No. 31/2012/TT-BYT includes 1243 drugs, among which are all the therapeutic categories required for NCD treatment, from cancer (57 drugs and 57 radioactive substances), heart disease (97 drugs) mental illness (38 drugs) to diabetes (11 drugs). Nearly 17 000 diagnostic and treatment services are now covered by health insurance including many high tech services with high cost used for NCD treatment such as cardiac interventions, chemotherapy, radiotherapy and gamma knife surgery for cancer. Besides this, funds for NCD prevention and control are mobilized from other sources such as external assistance, loans and patient payment of hospital fees.

3.2. Difficulties and challenges

Financial resources for NCD prevention and control come from diverse, but uncoordinated sources, yet they are being cut so they are not commensurate with the NCD burden of disease

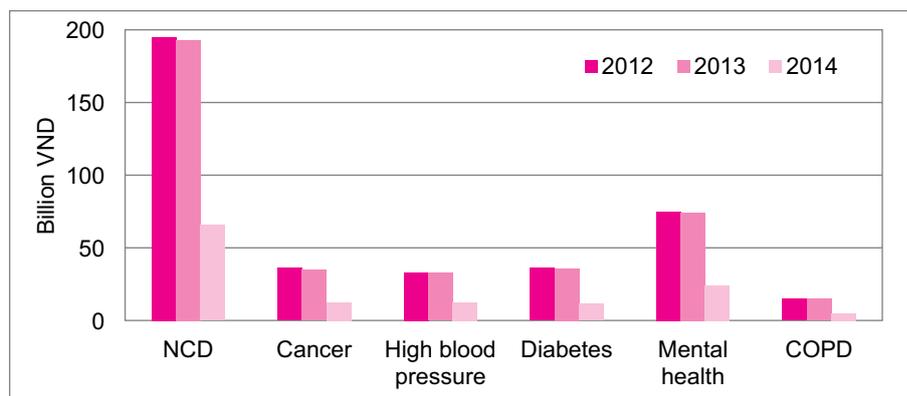
Currently government funding of NCD prevention and control programs is fragmented because it is allocated to individual NCD projects. At the same time, the preventive medicine and curative care systems are almost entirely separate from each other in organization, human

resources and funding. Funds for treatment include state budget, health insurance and payments from patients. For preventive medicine activities funds come mainly from the state budget through recurrent expenditure allocations to preventive medicine units and funding for NTPs.

The level of funding for NCD prevention and control activities is rather limited. According to National Health Accounts 2011, total funds for NCD prevention and control activities accounted for 3.5 percent of total national health spending and 12.5 percent of total spending on preventive medicine and health promotion activities. Analysis of statistical data for the period 2005-2011 indicates that the share of spending for NCDs in total health spending increased from 2.5 percent to 3.5 percent. Yet NCDs account for two-thirds of burden of disease in Vietnam, so clearly, funds allocated to NCD prevention activities is disproportionately small. Almost no external assistance has been used for NCD programs.

Analysis of funding for NTPs indicates that state budget funding for NCD programs (cancer, hypertension, diabetes, mental health protection, and COPD/asthma) out of total NTP funds is rather low, only about 12.7 percent in 2013, declining from 15.6 percent in 2012. In fact, budget allocations for NCD projects within the NTPs for 2014 have been cut up to 68 percent compared to 2013 allocations, and only meet about 23 percent compared to the program budget requests for 2014 (Figure 53).

Figure 53: Funds allocated for NCD prevention and control activities in the National health target program, 2012-2014



Source: Official letters from the Ministry of Health on State budget allocation for NTPs (No. 305/BYT-KH-TC dated 17 January 2012; No. 6941/BYT-KH-TC dated 11 October 2012; and No. 6517/BYT-KH-TC dated 14 October 2013).

Many NCD prevention and control activities are not yet covered by health insurance partly due to restrictions on what can be covered by insurance and partly due to low capacity at the grassroots level to provide appropriate services.

The current health insurance policy currently only reimburses curative care services and does not generally cover preventive medicine services. In fact, the 2014 Law revising various articles in the Law on health insurance even dropped coverage of screening for early detection of disease that had previously been included in the health insurance service package under the 2008 Law. Health insurance coverage for services related to NCDs also face limitations because of the following reasons:

The capacity for providing NCD care and treatment services at the grassroots level is low. Patients with health insurance have to be referred to or bypass lower levels and go directly

to provincial or central hospitals in order to access NCD-related care and treatment services. Referral policies, geographical barriers, transportation conditions limit the extent to which NCD patients can benefit from health insurance.

The list of drugs covered by health insurance at each level of facility is not yet in line with treatment needs or cost-effectiveness criteria for NCD prevention and treatment.

According to regulations, health insurance does not cover costs of treatments that are currently being covered by government budget. Therefore, when national health target programs include dispensing of treatment drugs such as in the program on mental health that dispenses drugs for treatment of schizophrenia and epilepsy, these types of drugs will no longer be reimbursed by health insurance. The conflict arises as funding for NCD projects in the national health target program have been cut by 66 percent, dispensing of drugs through the program have also had to be cut, but guidance for health insurance reimbursement has not been adjusted in time to compensate for this shortfall in ensuring access to drugs by patients. The consequence is that patients must pay out-of-pocket for these treatment costs.

The scope of benefits under health insurance currently do not include the full set of services needed for NCD prevention and control. Besides the range of preventive services and services included in national health target programs not covered by health insurance, other services for NCD patients are also excluded from health insurance reimbursement. For example, treatment of attempted suicide or self-harm is excluded, even though they are often the result of mental illness. Other services are excluded because they are not listed on the list of administratively set user charges for medical services, such as psychological counselling or psychotherapy, which are important in treatment of depression.

According to statistics from a WHO global survey (2010), major sources of funding for NCD prevention and control in the countries of the world include: state budget, external assistance, health insurance and earmarked tax revenues reserved for NCD prevention and treatment. Among these sources, the state budget plays a major role in 84 percent of surveyed countries [228]. Health insurance also plays an important role in payment of NCD care and treatment services, particularly in countries with national health insurance schemes. In 57 percent of countries, NCD-related services and treatments were covered by health insurance, although this varied across regions from 84 percent in European countries, to 35 percent in Africa, with about half of lower middle income countries covering NCD services by health insurance [228].

State budget allocations for NCD prevention and control are being cut, are slow to be disbursed, while NCD burden is rising.

While the NCD burden of disease is rising and accounts for up to 71 percent of total burden of disease and mortality nationally, the state budget allocation for NCD projects in the national health target program is being cut. From 2013, NTP funds for IEC were cut, which has caused difficulties for program activities. By 2014, almost all NTPs have had funding cuts, including NCD prevention and control projects, which have been cut substantially, over 66 percent for the diabetes, mental health and COPD programs. At the same time, recurrent budget spending for preventive medicine is relatively low (with some provinces allocating only 13 million VND per year per health worker for non-salary operating funds) [49]. It is likely in 2015 that funds for NTPs will be cut. The main reason for this is that state budget revenues are facing difficulties.

Besides the shortage in financial resources for NCD prevention and control, state budget allocations for NTPs also tend to be slow, causing difficulties for implementation and limitations in effectiveness of programs. Review and approval of programs is often prolonged and often approved long after the five year plans have been approved, causing difficulties for developing annual plans during the first years of the planning cycle [65]. The Diabetes program was initially approved along with other diseases in the NCD programs in 2002. In 2008, diabetes was included with some other NCDs into the health NTP (Decision 172/2008). However, activities of the diabetes program weren't actually started until 2009, even though targets and activity plans had been set up for the 2006-2010 period. The main reason is that funds for the period 2006-2010 were not approved until 2009 (official correspondence number 1298/TTCP dated 20 August 2009) followed by Circular No. 36/TTLB-BTC-BYT guiding implementation, which came into effect in April 2010. This is why activities planned for 2006-2010 weren't started until mid-2010.

The amount of time allowed for planning and allocating funds for NTPs as well as allocation of funds in the provinces and sectors involved in NTP implementation is often very short. Therefore it is difficult to ensure effectiveness and completeness of annual plans. The annual plans of the NTPs have to follow the overall plan and goals for the five year period approved by the Prime Minister. However, the annual budget allocated on an annual basis by the Government and Ministry of Planning and Investment is often much lower compared to the plan, making it very difficult to implement and achieve the goals approved by the Prime Minister.

While budget for NCD prevention and control programs is limited and does not meet the need, the effectiveness of budget allocation is also low. First of all, the fragmentation in fund allocations between programs for each specific disease as well as the division into preventive and curative care is inappropriate and inefficient. One of the main strategies WHO recommends to member nations is to combine and coordinate jointly any prevention and control activities for the main four NCDs causing high burden of disease (cardiovascular disease, cancer, chronic respiratory disease and diabetes) [229]. Countries should develop one common national action plan for NCD prevention and control, to ensure activities and resources are coordinated and integrated in an effective way.

In general, health sector fund allocations are concentrated primarily on treatment while preventive and promotive health activities receive less attention and insufficient investments. Total funds for prevention and health promotion in general account for only 25.9 percent of total societal health spending. If we analyze this specifically for NCDs, it is likely that it is even lower. On the other hand, funds for treatment are mainly focused on higher level hospitals. Data on health insurance reimbursements indicate that two-thirds of health insurance funds are going to provincial and central hospitals. The grassroots level including district hospitals and commune health stations has over 80 percent of health insurance cards registered for first level care, but receives only 30 percent of total health insurance reimbursements. Activities for prevention and community health have not received adequate investments. According to WHO recommendations, one of the most important strategies for NCD prevention and treatment is to integrate it with primary care to strengthen prevention, early detection and early treatment of NCDs [125].

Budget allocation and use among programs and within each program has not been strategically implemented, particularly the selection of evidence-based and cost-effective interventions and services. According to WHO, prevention and control of NCDs can be successful without depending on a high level of economic development of a country [108]. WHO has released a list of “best buy” interventions which should be top priorities for NCD prevention and control (Table 23 above). These are mainly preventive population-wide interventions related to risk factors.

Besides these 10 interventions, the WHO has also provided a list of cost-effective interventions for NCD prevention and treatment for countries to choose from, including an essential services package for primary health care to prevent and control NCDs with limited resources [230] (See Table 41 below).

The current provider payments system does not encourage screening for early detection and early treatment of NCDs

NCD prevention and treatment services are still paid mainly through the traditional fee-for-service payment method, which doesn't encourage quality of service and appropriateness with the goals of controlling NCDs such as early detection and management of NCDs in the community. This provider payment method creates strong incentives for overprovision of curative care services, mainly at higher level hospitals, leading to increased disconnection between levels of the curative care system. These behaviors are the opposite of what is needed for an effective NCD prevention and control strategy, in which priority is placed on prevention, health promotion, focused on primary care, strengthened continuity and integration of care for chronic NCDs. In order to reduce the burden of disease and mortality due to NCDs, prevention activities must receive increased attention. Almost all causes of NCDs have been identified. Some 80 percent of heart disease, stroke and type 2 diabetes and 40 percent of cancers can be prevented by eliminating risk factors [231]. While the costs of treating NCDs is usually very high, especially when they are diagnosed late, it is necessary to undertake cost-effective interventions [223].

The current provider payment system does not provide appropriate incentives for health workers

Currently spending on NTPs is not appropriate, is very limited and does not provide appropriate incentives to health workers. Specifically, Joint Circular No. 30/2010/TTLT-BTC-BYT guiding spending norms for NTPs, stipulates spending on diabetes program activities including some unreasonable amounts, such as payment to an individual of 50 000 VND per commune per day for the task of making a list, selecting a sample, sending invitation letters, motivating the invitee to come in for screening; each commune can have a maximum of five days per screening event, with payments made to the person implementing screening to detect diabetes (in addition to the current payments for business travel). For people who are directly involved, the amount is only 50 000 VND per person per day, not to exceed 10 people per screening event. In addition, regulations allow spending for periodic monitoring of diabetic patients in the amount of 5000 VND per patient per month, but only allow a maximum of 200 000 VND per health facility per month, which is entirely inappropriate. It provides no incentive for monitoring patients. Other cost norms include spending on the laboratory tests to diagnose diabetes, compile data, write reports on results of screening, rental of tables, chairs,

tents, etc. to serve the screening event. Spending for patient management: Spending to help the medical facility directly manage patients, to set up patient records is not appropriate with market prices and in many cases health workers even have to pay from their own pockets to purchase gasoline or rent vehicles to get to the screening site.

Surveys in several localities have shown that transfers of funds to the Health IEC centers for national health target program IEC work has been done, although there is not yet a concrete guideline on the role, responsibility and collaboration mechanism between the professional units managing the program and the Health IEC centers, leading to undesired effects on IEC work of the program.

The current financing mechanism and design of the medical service delivery system does not protect people from catastrophic spending when seeking care for NCDs

NCDs are and will continue to create a large financial burden for the nation, as well as negative effects on the global socio-economic development. It is estimated that NCDs are the cause of 63 percent of deaths globally, among which 80 percent are in low and middle income countries. Economists have estimated that in the next 20 years, NCDs will cause economic losses in the amount of 47 trillion USD, equal to 75 percent of global GDP in 2010 [119]. Research has shown that an increase of 10 percent in NCD prevalence will reduce annual economic growth rate by half a percent [108]. NCD treatment cost burden causes millions of families globally to fall into financial difficulty, or even poverty. In Vietnam, a study on financial burden on families due to NCDs found a clear effect of NCD treatment costs on catastrophic health care spending and impoverishment due to health spending. The proportion of households facing catastrophic spending in households that had at least 1 member with an NCD was 14.6 percent, higher than households with no members with NCDs (4.2 percent). Similarly, the proportion of households becoming impoverished due to health spending in households with at least one member with an NCD was 7.6 percent, higher than in households with no members with NCDs (2.3 percent). The probability of facing catastrophic spending is 3.2 times and impoverishment is 2.3 times higher among households with a member having an NCD compared to households without [232]. The cause of this situation can be attributed to the following factors:

- Costs of NCD treatment are high, especially chemotherapy and cardiology interventions (Table 38);
- NCDs are usually chronic diseases, with prolonged treatment periods;
- Indirect costs are high: Because treatment capacity for NCDs at the district and commune levels is limited, patients must go to higher level facilities, which leads to higher costs of transportation, food and accommodations, in addition to higher medical care costs compared to treatment at lower levels;
- Early detection of NCDs has not yet achieved the desired results, as a result a high proportion of patients are detected in later stages of disease, leading to higher treatment costs and lower treatment effectiveness.

Table 38: Costs of some cardiology interventions and cancer treatments in Vietnam

	Intervention/drug	Cost per year	Cost per treatment episode
1	Anti-rejection drug for organ transplant	31 374 000	
2	Insertion of a stent	60 000 000	
3	Chemotherapy for breast cancer (Herceptin)	503 546 000	
4	Chemotherapy for lung cancer (Erlotinib)	480 000 000	
5	Chemotherapy for lung cancer (Gefitinib)	432 000 000	
6	Chemotherapy for kidney cancer and advanced liver cancer (Sorafenib= Nevaxar)	1 416 000 000	
7	Chemotherapy for metastatic colorectal cancer and metastatic non-small cell lung cancer (Cetuximad)		600 000 000
8	Chemotherapy for treatment of stomach and breast cancer		800 000 000

3.3. Priority issues

Analysis of NCD prevention and control financing issues brings up some priority issues in need of resolution so the health financing system can respond appropriately to help achieve the NCD prevention and treatment goals.

- NCD prevention and control has not yet been adequately prioritized in allocation of funds, especially funds for controlling risk factors, screening for early diagnosis. The financial resources are inadequate to meet need: prevalence of NCDs has increased to high levels compared to the ability of the health system to respond in terms of human resources, physical infrastructure and financial resources.
- No sustainable financial mechanism for care of NCD patients is in place (no special health insurance scheme for the elderly, for people with chronic diseases is in place). Financial resources for health promotion have not yet been created from taxes on tobacco or alcohol.
- Allocation of financial resources is inappropriate for effective implementation of NCD prevention and control goals (divided among different projects, separation between funding for preventive and curative care, focused on hospital services). There is not yet a national strategic plan for NCD prevention and control with a corresponding financing strategy.
- Effectiveness in use of financial resources for NCD prevention and control is limited: no strategy is in place for selection of cost-effective interventions, essential NCD service package has not yet been set up.
- The provider payment method of fee-for-service is not appropriate: it encourages provision of hospital services, doesn't encourage primary care, prevention or health promotion in the community.

- Health insurance in 2013 covered 68.5 percent of the population, yet the health insurance budget remains limited, and scope of coverage is limited. Health insurance doesn't cover some NCD prevention services, particularly screening, and doesn't reimburse counselling, costs of treatment for attempted suicide, psychotherapy and other non-drug treatments for mental illness. Conflicts exist in health insurance reimbursements for drug costs for NCD treatment when those drugs are no longer covered by the state budget funding of national programs.

3.4. Recommendations

- Ministry of Health should take the lead in developing a national action plan for NCD prevention and control, including development of budgets for implementing this plan.
- Increase funding for NCD prevention and control activities: from the state budget, health insurance and tobacco control fund.
- Revise again the Law on health insurance and guiding sub-legal documents to ensure the package of services covered is deepened by selecting services needed for NCD patients based on evidence of cost-effectiveness.
- When allocating budget increase prioritization on NCD prevention, health promotion, primary care and surveillance.
- It is necessary to determine a basic service package for NCD prevention and control based on evidence of cost-effectiveness.
- Strengthen investment in research to provide evidence of cost-effectiveness for NCD prevention and treatment.

4. Pharmaceuticals and medical equipment

Access to essential, quality, affordable drugs and medical technologies is one of the basic conditions to respond successfully to prevention and control of NCDs. All countries, no matter how poor, can implement a policy encouraging access to essential drugs for NCD prevention and control. Effective policies for accessing essential drugs include national selection of essential drugs, standard evidence-based treatment guidelines and policies encouraging use of essential drugs [233].

Some policy choices related to pharmaceuticals and medical equipment for NCD prevention and treatment following WHO recommendations include:

- Increase access to affordable, safe, effective and quality medicines and diagnostics and other technologies;
- Adopt evidence-informed country-based strategies to improve patient access to affordable medicines (by including relevant medicines in the essential medicines list, separate prescribing and dispensing and managing drug prices).

- Promote procurement and use of safe, quality, efficacious and affordable medicines, including generics, for prevention and control of NCDs (including medicines for alleviation of pain for palliative care and vaccinations against infection-associated cancers) through measures including quality assurance of medical products, preferential registration procedures, generic substitution, preferential use of international non-proprietary names (INN), financial incentives and education of prescribers and consumers.
- Improve the availability of life-saving technologies and essential medicines for managing NCDs in the initial phase of emergency response.
- To ensure the people can access drugs and equipment for NCD prevention and control, WHO recommends minimum lists of essential drugs and equipment for primary care facilities in low income countries, including 34 types of drugs and 21 pieces of equipment, including 11 minimum basic equipment and 10 supplementary equipment (Table 39 below)

The section below presents the response of the Vietnamese health system for ensuring access to essential drugs and technologies for NCD prevention and control, including the contents on selecting essential drugs, ensuring availability of essential drugs, standard treatment guidelines, encouraging use of essential drugs, and managing prices of essential drugs and medical technologies. This is followed by identification of priorities and proposals for solutions.

4.1. Results and progress

4.1.1. Selection of drugs

Vietnam has an essential drug list and a health insurance drug formulary includes almost all drugs needed for NCD treatment. Over many years, the Ministry of Health has developed and issued essential drug lists, after consulting with the WHO recommendations on essential drug lists. In 2013, the Ministry of Health issued the VIth essential drug list, building on the Vth essential drug list and involved consulting with the current WHO essential drug list and Ministry of Health treatment guidelines. Criteria for selection of drugs included: (i) efficacy and safety for consumers; (ii) available in sufficient quantities, packaging appropriate with conditions for storage, distribution and use; (iii) appropriate with the morbidity patterns, technical means available and skills of doctors and other medical personnel in the medical facility; (iv) reasonable prices. Vietnam's VIth essential drug list includes 466 drugs⁶⁸, divided into 29 groups of pharmaceutical effect.

Besides the essential drug list, the Ministry of Health has issued a health insurance drug formulary, which is a list of drugs for use at medical facilities that are reimbursed by the health insurance fund. Most drugs necessary for NCD treatment are available on the latest health insurance drug formulary.⁶⁹ All 34 drugs in the minimum list of drugs for NCD prevention and control in primary care according to WHO recommendations are on the insurance drug formulary.

⁶⁸ Ministry of Health Circular No. 45/2013/TT-BYT dated 26 December 2013 issuing the VIth list of drugs reimbursed by insurance.

⁶⁹ Unified Circular No. 01/TTHN/BYT dated 23 January 2014

4.1.2. Policies encouraging use of essential drugs and standard treatment guidelines for NCD treatment

The Ministry of Health has issued guidelines for diagnosis and treatment of several NCDs, including (i) hypertension (Decision No. 3192/QD-BYT dated 31 August 2010); (ii) type 2 diabetes (Decision No. 3280/QD-BYT dated 9 September 2011); (iii) asthma (Decision No. 4776/QD-BYT dated 4 December 2009). All the treatment guidelines recommend use of generic drugs in treatment of NCDs, are used as training materials for health workers and are widely used throughout the country.

4.1.3. Drug price management

Controlling drug prices is one of the main tasks of the Ministry of Health; several new measures for managing drug cost escalation (including new regulations on competitive tendering) have been implemented, achieving good results in recent years (see details in Chapter II of this report). A study on generic and branded drug prices following WHO methodology has also shown that the winning bid prices in Vietnam are lower than or similar to the average of international comparator countries [66]. In many localities, the total value of winning bids is lower by 20 to 30 percent compared to the planned tender package [49].

4.1.4. Essential medical equipment for diagnosing and managing NCDs

The Ministry of Health has lists of equipment that should be available for use at different levels of the health system. Almost all medical equipment needed for diagnosing and treating NCDs are included in the list of medical equipment for use in public medical facilities. Commune health stations with a doctor are provided with a blood pressure measuring device, a simple biochemistry testing machine and simple urinalysis machine,⁷⁰ however many other types of equipment needed for managing NCDs are not in the list (for details see the following section).

4.2. Difficulties and challenges

4.2.1. Limitations in access to essential drugs for NCD treatment at grassroots facilities

Some NCD treatment drugs are not available at state health facilities, especially commune health stations. While all 34 essential drugs in the WHO minimum list of NCD prevention and treatment drugs are in Vietnam's health insurance drug formulary, however, of the 34 drugs, 11 are not in the list for use at the commune level (Table 39). In addition, some drugs that are on the essential drug list or insurance drug formulary are not available because of delays or shortages that prevent facilities from meeting treatment needs [69].

⁷⁰ Ministry of Health Decision No. 1020/QD-BYT dated 22 March 2004 issuing the revised list of equipment for the commune health station with a doctor to update the list issued in Ministry of Health Decision No. 437/QD-BYT dated 20 February 2002.

Table 39: Comparison of WHO minimum drug list for NCD prevention and control in primary care and the list of essential drugs according to Circular 31/2011/TT-BYT⁷¹

Minimum drug list for NCD prevention and control in primary care	Essential drug list (Circular No. 31/2011/TT-BYT)	
	District	Commune
Thiazide	+	+
Amlodipine	+	+
Atenolol	+	+
Enalapril	+	+
Simvastatin (-)	+	None
Insulin (-)	+	None
Metformin	+	+
Glibenclamide	+	+
Isosorbide dinitrate	+	+
Glyceryl trinitrate	+	+
Furosemide (-)	+	None
Spironolactone	+	+
Salbutamol (-)	+	None
Prednisolone (-)	+	None
Beclometasone (-)	+	None
Aspirin	+	+
Paracetamol	+	+
Ibuprofen (-)	+	None
Codeine	+	+
Morphine (+/-)	+	Only for emergency use
Penicillin	+	+
Erythromycin	+	+
Amoxicillin	+	+
Hydrocortisone	+	+
Epinephrine	+	+
Heparin (-)	+	None
Diazepam	+	+
Magnesium sulphate (-)	+	None
Promethazine (-)	+	None
Senna	+	+
Dextrose	+	+
Glucose IV	+	+
NaCl 0.9%	+	+
Oxygen	+	+

A study on use of drugs at commune health stations in 176 communes of 48 districts [234], found that the proportion of drugs from the essential drug list that were available in communes served by a doctor ranged from 12.5 to 20 percent [234]. Another study found that only 57 percent of pharmacies in a city in southern Vietnam had medicine for treating epilepsy [235]. Some low priced drugs (such as drugs for treating psychoses or epilepsy) were included in the competitive tendering plan by the provincial health bureau (e.g. Lai Chau), but no contractor participated in bidding for those drugs, leading to a shortage of NCD treatment drugs in the locality.

⁷¹ Ministry of Health Circular No. 31/2011/TT-BYT dated 11 July 2011 issuing and guiding implementation of the health insurance drug formulary.

Some drugs needed for NCD treatment are not covered by health insurance. Currently some COPD and asthma drugs recommended by the Global Initiative for Chronic Obstructive Lung Disease (GOLD) are not on the health insurance drug formulary. In some localities, medicines for treatment of COPD and asthma in the outpatient COPD management clinics are not reimbursed by the health insurance fund.

The health insurance fund does not yet meet need for medical services among people with NCDs at the commune level. The allocation of health insurance funds to the commune health station according to current regulations⁷² is stipulated as a minimum of 10 percent of the health insurance fund at the district hospital, but in reality commune health stations are usually only allocated 10 percent. This level of allocation does not meet the costs in the case that a commune health station has many NCD patients who require higher cost NCD drugs, such as some drugs for treatment of COPD or asthma.

Some treatment drugs are not available because of the lack of timely collaboration between NCD projects and VSS. Drugs for treatment of schizophrenia and epilepsy have been provided for free using state budget funding from NCD prevention and control projects and some local counterpart funds, however, since 2014, the funding for the mental health project was cut, leaving only 35 percent of the amount allocated in 2013. Many localities have been slow at adjusting to include these drugs in the health insurance drug formulary so they can be reimbursed by health insurance, leading to discontinuities in provision of treatment drugs.

Fragmentation and lack of consistency in prescribing drugs between different levels of medical facilities creates a false shortage of drugs. In commune health stations, for treatment of epilepsy or schizophrenia, the patient is provided drugs free-of-charge from the NTP, usually phenobarbital 100mg for treatment of epilepsy or chlorpromazine 100mg or haloperidol 2mg for treatment of schizophrenia. In the case that the disease relapses, the patient should seek medical care at a specialist mental health facility, and they may be prescribed an alternative drug, of a newer generation. In these cases the patients tend to buy drugs according to the prescription of the doctor at the higher level facility and no longer use the older generation drugs provided for free by the NTP at the commune health station.

The list of chronic diseases has not been updated and does not yet include hypertension or COPD, causing problems for patients to access drugs. Provincial level facilities are only allowed to dispense treatment drugs for a period of 15 days, and at the district level for 7 to 10 days and at the commune from 5 to 7 days for patients with hypertension. Dispensing of drugs for treatment of chronic diseases for such short periods of treatment is costly to patients, reducing compliance and effectiveness of treatment.

Policies prioritizing generic drugs are not fully in place. The Law on pharmaceuticals does not stipulate a generic drug policy, essential drug policy or measures to ensure availability of essential drugs. Essential drugs account for a low share in the health insurance drug formulary. Only 316 of 1143 drugs in the health insurance drug formulary are essential drugs [68].

Prices of drugs outside the state health system are still not effectively managed. The amount of drugs distributed in the market by private pharmacies accounts for 65 to 70 percent of total value of drugs used, yet there is still no measure for managing drug prices effectively in this sector; no evaluation has been made yet on the pilot of managing drug prices through ceilings on wholesale markups.

⁷² Joint Circular of the Ministry of Health and Ministry of Finance No. 09/2009/TTLT-BYT-BTC dated 14 August 2009 guiding implementation of health insurance.

4.2.2. List of medical equipment for use at the commune level is inadequate for responding to NCD prevention and control

The list of medical equipment for use in the commune level has not been updated to meet requirements for NCD treatment and control. The Ministry of Health standard list of equipment for use in the commune health stations served by a doctor,⁷³ includes standard equipment appropriate with goals of controlling epidemics and maternal and child care. However, the equipment in the standard list is inadequate to meet the requirements for implementing essential interventions for NCD prevention and control at the commune level. The list only contains five of the eleven minimum equipment items on the minimum list of equipment for NCD prevention and control in primary care according to WHO (Table 40). The six items not on the list are not costly, but are necessary for implementing minimum interventions for diabetes and COPD prevention and control and include, for example, peak flow meters (Figure 54).

In addition, even though essential medical equipment for diagnosis and treatment of NCDs at the commune level is stipulated in the official lists (simple biochemistry assay), but most commune health stations have still not been supplied such equipment because they lack funding, or trained human resources to use the equipment or high opportunity costs (number of tests performed is too low).

Table 40: Comparison of minimum list of medical equipment for NCD prevention and control in primary care with the WHO recommended list.

Minimum equipment list for NCD prevention and control in primary care following WHO recommendations	Equipment list for commune health stations with a medical doctor
Minimum list	
1. Thermometer	+
2. Stethoscope	+
3. Blood pressure cuff (device)	+
4. Ruler (to measure height)	+
5. Scale	+
6. Peak flow meter	None
7. Spacers for inhalers	None
8. Blood glucose measuring device	None
9. Blood glucose test strips	None
10. Urine protein test strips	None
11. Urine ketones test strips	None
Supplementary list	
1. Nebulizer	+
2. Pulse oximeter	None
3. Blood cholesterol assay	+
4. Device to measure blood lipids	+
5. Device to measure creatinine in blood	+
6. Troponin test strips	None
7. Albumin in urine (test strips)	None
8. Tuning fork	None
9. ECG	+
10. Defibrillator	None

Source: World Health Organization. Package of essential noncommunicable (PEN) disease interventions for primary health care in low-resource settings. Geneva: WHO; 2010 [236]

⁷³ Ministry of Health Decision No. 1020/QD-BYT dated 22 March 2004 issuing the revised list of equipment for the commune health station with a doctor to update the list issued in Ministry of Health Decision No. 437/QD-BYT dated 20 February 2002.

Figure 54: Simple equipment to measure exhaled breath (Peak flow meter)



4.3. Priority issues

- There is still no policy to prioritize use and ensure availability of generic drugs, essential drugs. The list of essential drugs for NCD management at the commune health station is inadequate, especially drugs for treatment of diabetes, COPD, palliative care for cancer patients.
- Access to NCD treatment drugs is difficult because drugs are not always available in the health care service network, especially at the commune level. This is partly related to regulations restricting payment from health insurance for drugs used in national health programs already mentioned in the finance section. Other reasons include because diabetes and hypertension are not in the list of chronic diseases issued by the Ministry of Health, contractors making bids for drug sales don't always make bids for certain low price essential drugs and because of poor collaboration in treatment between levels of the system;
- Commune health facilities lack some basic medical equipment that could be used for screening and monitoring treatment of diabetes.

4.4. Recommendations

Short term

- Add policies on access to drugs, priority use of generic and essential drugs into the Law on pharmaceuticals.

Long term

- Develop and standardize the list of drugs for treatment of NCDs; revise the health insurance drug formulary, adding NCD treatment drugs into the formulary in order to implement essential NCD prevention and control interventions at the grassroots level based on WHO recommendations.
- Review regulations on competitive tendering of drugs, including setting up a priority mechanism for specialized drugs with low prices to create convenient conditions for competitive tendering or designating a single drug supplier.

- Revise Joint circular No. 09/2009/TTLT-BYT-BTC dated 14 August 2009 guiding implementation of health insurance to adjust the level of health insurance fund allocation to be in line with need for NCD treatment and care at the commune level.

Revise and amend the list of standard equipment for use in the commune health station served by a doctor to ensure implementation of essential interventions for NCD prevention and treatment according to WHO recommendations.

5. Health information systems for NCD surveillance

For NCD prevention and control, according to WHO recommendations for the period 2008-2013, the national health information system should be strengthened to implement the following tasks:

- *Monitor NCDs and risk factors to provide basic evidence for policy advocacy and policy formulation related to NCD prevention and control.* The health information system should not be limited only to surveillance of levels and trends in disease, but should also include evaluating effectiveness and impact of interventions and assessing progress made in implementing projects.
- Strengthen surveillance systems and standardized data collection on risk factors, disease incidence and mortality by cause.
- Periodically and routinely provide data and information on NCD morbidity and risk factor trends by age, gender, demographic group and also on progress in implementing national plans.

In the period 2013-2020, WHO has identified more detailed tasks for the health information system related to monitoring, recording and surveillance of NCD prevention and control as follows:

- **Monitoring:** Update legislation pertaining to collection of health statistics, strengthen vital registration and cause of death registration systems, define and adopt a set of national targets and indicators. Integrate monitoring systems for the prevention and control of NCDs into the national health statistics system, including prevalence of relevant key interventions in order to systematically assess progress in use and impact of interventions;
- *Disease registries (e.g. cancer):* Develop, maintain and strengthen disease registries, including for cancer;
- *Surveillance:* Identify data sets, sources of data and integrate surveillance into national health information systems. Undertake periodic data collection on the behavioral and metabolic risk factors (harmful use of alcohol, physical inactivity, tobacco use, unhealthy diet, overweight and obesity, high blood pressure, high blood glucose, and high blood cholesterol), with disaggregation of the data by age, gender, socioeconomic status in order to monitor trends and measure progress in addressing inequalities.

In addition, WHO also recommends the need to strengthen priority in allocating financial resources for NCD monitoring and surveillance systems.

The section below assess monitoring, cancer registry and surveillance of NCD prevention and control according to the tasks WHO recommended above and assess the ability of the information system to meet the requirements for continuous NCD care.

5.1. Results and progress

5.1.1. Monitoring NCDs

The Vietnamese health statistics system, with health information sub-systems from each hospital has begun to gather information on NCDs from hospitals. The health information subsystem related to medical services, managed by the MSA, includes information sub-systems within hospitals that gather data and information from hospitals nationwide. The health information sub-systems at hospitals have begun to gather information and monitor data on NCDs and injuries. The main software for statistical reporting used by hospitals is Medisoft. Other software packages in different areas of the health system such as medical services and supplementary services are also being used in provincial and central hospitals, but the interoperability between software is limited or non-existent.

National health target programs also have their own information sub-systems, gathering data independently, such as the programs on hypertension, diabetes, mental health in the community, etc. Health information from these programs is usually performed by the Project management units of each project.

5.1.2 Cancer registry

The model for cancer registry is also based on hospital reporting. Registration of data on the cancer situation was initiated in Hanoi (1988-1990) and HCMC (1994) providing official information on cancer morbidity for the first time. Up till now, Vietnam has implemented 9 cancer registries in Hanoi, HCMC, Thai Nguyen, Hai Phong, Hue, Da Nang, Can Tho and Kien Giang. Registration of cancer cases follows the active cancer registry method, which means that registry staff actively go to hospitals to obtain information on cancer cases.

5.1.3. NCD surveillance

Vietnam has implemented a national survey following STEPwise approach, however because of the lack of funding, this survey has not been repeated on a routine basis. Data on the NCD situation, cause of death, burden of disease and risk factors has been exploited from the VINE project, implemented by the Health Strategy and Policy Institute, Hanoi Medical School and Hanoi School of Public Health.

5.2. Difficulties and challenges

5.2.1. NCD surveillance

The NCD surveillance system is not yet comprehensive or systematic. The NCD surveillance system was put in place in 2009 and has implemented one national survey on risk factors for NCDs, however it has not been able to maintain the activities after the project terminated, so it cannot provide basic statistical data on NCDs. In 2011, the Ministry of Health

developed and issued a set of NCD monitoring and evaluation indicators,⁷⁴ yet to date no data have been reported officially according to this set of indicators, because most of the indicators are supposed to come from a five-yearly survey. The set of indicators has not been integrated into the health statistical information system and has not yet been updated or adjusted to be consistent with the WHO NCD monitoring framework indicators.

NCD prevention and control projects lack integration in monitoring and surveillance. Each project has their own statistical reporting forms to report on the situation of implementing the project, including indicators on screening, management and treatment of disease, however there has been no checking or supervision of the quality of data gathered. Each project implements its own forms, causing difficulties and heavy workload for staff at lower levels. Some surveys and studies have been implemented by various units, with overlaps and lack of standardization, causing difficulties for reporting data on basic indicators.

The vital records system does not yet provide statistics nor does it provide reliable, comprehensive data on cause of death. Surveillance of deaths, and strokes is only implemented on a small scale in Hanoi and HCMC, and does not link data from areas of endocrinology, cancer, cardiology, COPD, etc. into the general system

5.2.2. Cancer registry

Cancer surveillance: In nine cancer registry centers, only two (Hanoi and HCMC) have had their quality accredited by IARC (International Agency for Research on Cancer). Staffing of cancer registry centers is not stable, and the registries, so far, only gather information on incidence. The software currently being used is CANREG 4, while other countries are already using CANREG 5. Supervision and quality control of cancer registry centers has not been implemented.

5.3. Priority issues

- There is inadequate up-to-date, systematically collected, population-based information on trends in risk factors (including behavioral, lifestyle and intermediate risk factors), or on morbidity and mortality.
- The Vietnamese NCD indicators for monitoring and evaluating NCD prevention and control activities have not been updated to be consistent with the WHO global monitoring framework on NCDs; data on NCD indicators are gathered and processed by many sources, but are incomplete. Statistical data on risk factors are not yet integrated into the health statistics system.
- The vital records system does not effectively record cause of deaths occurring in the community.
- There is no health networking information system to support information sharing about NCD patients between facilities.

⁷⁴ Ministry of Health Decision No. 2180/QĐ-BYT dated 28 June 2011..

5.4. Recommendations

Short term

- Implement a survey of NCD risk factors using the STEPwise methodology in 2015.

Long term

- Consolidate and complete the NCD (and risk factor) monitoring system: (i) update the NCD monitoring indicators appropriately, on the basis of the WHO NCD monitoring framework; (ii) consolidate the hospital statistical reporting system, especially in relation to NCDs, disaggregated by age and sex; and (iii) train staff and ensure remuneration to strengthen quality of cancer registration.
- Undertake a study to implement mortality surveillance in the community based on commune health station mortality statistics (strengthen the A6/YTCS registry, forms, guidance and death reporting procedures, strengthen capacity of statistical workers and quality of recording at commune health stations) during the period when the death registration system is still unable to record cause of death in the community.

6. Health service delivery

NCDs are chronic diseases requiring different services and different service delivery approaches compared to acute diseases. NCD prevention and control services include opportunistic case screening or population-based screening to identify risk factors and detect disease early, as well as to determine level of risk for disease events. Treatment often requires a combination of drug treatment and lifestyle and behavioral change, with long term treatment plans including disease monitoring and encouragement to the patient to not abandon the treatment plan [237]. WHO recommends provision of an essential package of services to the population for NCD prevention and control, including services for health promotion, disease prevention, treatment, rehabilitation and palliative care, with nine specific components [125] (for details see Chapter III, section 1.6.5 of this report).

For developing countries, WHO recommends developing a package of essential NCD interventions for primary health care in low-resource settings, including interventions for early detection, prevention, treatment and care for heart disease and risk factors, diabetes, COPD and cancer [236].

For mental health, provision of comprehensive, integrated and responsive mental health and social care services in community based settings is set as one of the goals of WHO's mental health action plan 2013-2020.

Thus, the model for NCD prevention and control service delivery, according to WHO recommendations, is an integrated health care model, based on the primary health care network with linkages and continuity of care between facilities at different levels.

Below is a situation analysis and assessment of NCD prevention and control service delivery, compared with the WHO recommendations, in order to determine priorities and make recommendations for solutions.

6.1. Results and progress

6.1.1. Health service delivery system

The network of facilities for diagnosing and treating cancer, cardiovascular disease, mental illness, TB and respiratory diseases continues to develop and implement measures to improve capacity of the grassroots health system

Project 930 has invested in constructing provincial general hospitals and specialist hospitals for oncology, pediatrics/obstetrics, mental illness and TB and lung diseases according to Resolution No. 18 of the National Assembly with a total capital of 45 trillion VND from sales of government bonds, local budgets and ODA, which were approved and implemented in the period 2009-2013.

For cancer, the oncology hospital network and oncology wards have been taking shape in different regions. Up till now 40 out of 63 provinces have an oncology hospital, center, ward or unit, of which about two thirds of the facilities are in the process of being completed. Some oncology hospitals and centers have expanded such as the oncology departments of Hue Central Hospital, Cho Ray hospital, Phu Tho general hospital, Bac Ninh general hospital, Da Nang hospital, and become large oncology centers and hospitals, with bed capacity increasing two to five times. In particular, the National Cancer Hospital has expanded from 1 facility on Quan Su road with 700 beds in 2000, after opening Tan Trieu facility in August 2012 now has 1560 beds.

Other specialties: Through capital from government bonds, currently there are more than 50 provinces with specialized TB and lung hospitals and mental hospitals, which facilitate management and treatment of COPD, asthma and mental disorders requiring inpatient care. The project on reducing hospital overcrowding (Decision No. 92/QD-TTG) has focused investments on reducing overcrowding especially in five specialist wards, including oncology, pediatrics, obstetrics, cardiology and trauma.

The National Heart Hospital has been upgraded, some cardiology centers have been established or newly constructed or renovated in order to improve capacity for cardiology interventions. *The National Hospital of Endocrinology* has been newly constructed and is in the process of being completed.

In parallel with investments in general hospitals and higher level specialist hospitals, capacity strengthening for NCD prevention and control service provision at the grassroots level has also been implemented through vertical NCD programs (see Chapter V for details).

6.1.2 Health IEC

Counselling and health IEC for NCD prevention and control has been implemented in diverse forms. After Decree No. 77/2013/ND-CP on tobacco cessation was issued, the handbook guiding tobacco cessation was prepared and some tobacco cessation therapy offices have been piloted in major hospitals like Bach Mai, National Cancer Hospital, Central Lung Hospital, Hospital 74, HCMC Medical and Pharmaceutical University Hospital.

Counselling on nutrition, diet, physical exercise and rehabilitation have been implemented in some preventive medicine facilities. IEC activities through the television, newspapers, on-

line counselling services on the internet, tobacco cessation counselling services through the telephone⁷⁵ have also been implemented.

Asthma clubs⁷⁶, diabetes clubs and associations have taken shape through initiatives of medical facilities and patients, contributing importantly to supporting and assisting diabetes and asthma patients to gain knowledge and skills about their disease and how to manage it themselves.

Health IEC, including IEC related to NCD prevention and control, is being implemented in combination with health related events and immunization campaigns [238] through the network of 63 provincial IEC centers, with 920 staff at the provincial level, individuals assigned IEC responsibilities in each commune, and 320 000 health communication volunteers at the village level.

6.2. Difficulties and challenges

The grassroots health service network does not yet have the capacity to provide essential services for NCD prevention and control. The grassroots health network in Vietnam has wide geographic coverage, with 11 000 commune health stations and 600 district hospitals, which have made many achievements in control of infectious disease outbreaks, care of mothers and children and treatment of acute disease. However, the grassroots health network has not adapted quickly enough to the epidemiological transition from acute infectious diseases to NCDs, and in general the people do not yet have access to some essential NCD prevention and control services in primary health care. This is in part to the lack of skills and knowledge of health workers at the district, and especially at the commune level, lack of necessary drugs and equipment at health facilities, inappropriate health insurance reimbursement policies, lack of linkages and integration between preventive and curative care and fragmentation in health service delivery that do not guarantee comprehensive and continuous care.

Many services in the essential interventions package for NCD prevention and control in primary health care for low-resource settings recommended by WHO have not yet been implemented in commune health stations and in some district hospitals (Table 41). The people must seek some essential services at tertiary specialist hospitals or provincial general or specialist hospitals, with high indirect costs that would not be necessary if care were available at the grassroots level.

For example, in order to implement primary preventive interventions in primary care for myocardial infarction and stroke, according to WHO recommendations, most health workers at the commune level have not yet been trained in counselling for tobacco cessation, lack skills to provide concrete guidance on how to reduce salt intake to below 5g per day, don't know how to assess level of heart disease risk following the euroSCORE risk calculator or Framingham risk score. Offices for tobacco cessation counselling have only been opened on a pilot basis in major hospitals. Up till now, counselling services have not been integrated into the primary health care network in a systematic way, and costs of counselling services are not yet reimbursed by health insurance.

⁷⁵ Decree No. 77/2013/ND-CP dated 17 July 2013 stipulating details of implementation of the Tobacco control Law on measures for reducing harm of tobacco use.

⁷⁶ The Center for Allergology and Clinical Immunology. "Lỡ ra mắt câu lạc bộ hen phế quản" downloaded from http://diungmiendich.com.vn/diung/serviceView_303__469.html

Lack of some basic equipment makes it impossible to implement some essential interventions at the commune level. One of the most basic interventions that needs to be implemented at the commune level is control of blood sugar, yet the equipment for capillary blood glucose measurement is not available at the commune health station. Other necessary equipment items are also not available at the commune level to provide essential NCD prevention and control services (see details in Chapter VI, section on pharmaceuticals and medical equipment).

Table 41: Ability to provide an essential NCD prevention and control package in the grassroots health care network in Vietnam

Interventions	Services in each group of interventions	Obstacles to providing services at the commune health station
1. Primary prevention of angina and stroke	<ul style="list-style-type: none"> ▪ Quit smoking ▪ Physical activity 30 minutes per day ▪ Limit salt intake to below 5 g per day ▪ Minimum of 400g of fruit and vegetables per day ▪ Use aspirin, statins and drugs to reduce blood pressure for people with risk over 30% of cardiac event in the next 10 years ▪ Treat hypertension for people with blood pressure at 160/100 mmHg or higher ▪ Use blood pressure reducing drugs for people with blood pressure at 160/90 mmHg or higher who have a risk over 20% of having a cardiac event in the next 10 years 	<ul style="list-style-type: none"> ▪ Most commune health centers lack training in counselling ▪ Lack of training in how to assess risk of cardiac events in the next 10 years using Framingham or euroScore methods ▪ Most communes lack equipment for determining blood lipids to aid in detecting risk of cardiac events ▪ Counselling activities are not reimbursed by health insurance
2. Myocardial infarction	<ul style="list-style-type: none"> ▪ Take aspirin 	
3. Secondary prevention after myocardial infarction	<ul style="list-style-type: none"> ▪ Quit smoking, healthy diet and regular physical exercise ▪ Use aspirin, ACE inhibitors, beta blockers or statins 	<ul style="list-style-type: none"> ▪ Lack of skills in counselling, lack of appropriate reimbursement for counselling
4. Secondary prevention after stroke	<ul style="list-style-type: none"> ▪ Quit smoking, healthy diet and regular physical activity ▪ Aspirin, blood pressure reducing drugs (low dose thiazide, ACE inhibitor, statin) 	<ul style="list-style-type: none"> ▪ Lack of skills in counselling, lack of appropriate reimbursement for counselling
5. Secondary prevention of rheumatic heart disease	<ul style="list-style-type: none"> ▪ Use antibiotics periodically to prevent strep throat and relapse of rheumatic fever 	

Interventions	Services in each group of interventions	Obstacles to providing services at the commune health station
6. Type 1 diabetes	<ul style="list-style-type: none"> ▪ Inject insulin daily 	<ul style="list-style-type: none"> ▪ Insulin is not on the insurance drug formulary for use at commune level ▪ Most communes lack adequate equipment to monitor blood glucose
7. Type 2 diabetes	<ul style="list-style-type: none"> ▪ Take medicine to reduce blood glucose if changes in diet, weight loss and physical activity do not achieve target blood sugar ▪ Start to use Metformin among overweight people ▪ Use other blood glucose reducing drugs if don't achieve target blood sugar levels. ▪ Reduce risk of heart disease in diabetics with risk over 20% of having cardiac event in the next 10 years through use of aspirin, ACE inhibitors and statins 	<ul style="list-style-type: none"> ▪ Most communes lack glucometers ▪ Some treatment drugs are not available at the commune health station ▪ Lack of skills and conditions to determine risk of cardiac events in next 10 years.
8. Prevention of complications in legs (due to diabetes)	<ul style="list-style-type: none"> ▪ Clinical exam of legs to find signs of sores and transfer if any risk of sores 	<ul style="list-style-type: none"> ▪ Most commune health stations lack training to implement this service.
9. Prevention of the emergence of and development of chronic disease (diabetes)	<ul style="list-style-type: none"> ▪ Control blood sugar at optimal levels 	<ul style="list-style-type: none"> ▪ Most communes lack ability to determine blood glucose levels
10. Prevention of emergence and slow development of diseases of the retina (diabetes)	<ul style="list-style-type: none"> ▪ IEC about screening, evaluation, laser treatment for damage to the retina. ▪ Control blood sugar and blood pressure 	<ul style="list-style-type: none"> ▪ Most communes lack ability to determine blood glucose levels
11. Prevention of the emergence and slow the progress of nerve damage due to diabetes	<ul style="list-style-type: none"> ▪ Control blood glucose 	<ul style="list-style-type: none"> ▪ Most communes lack ability to determine blood glucose levels
12. Asthma	<ul style="list-style-type: none"> ▪ Treat symptoms using short-action β_2 agonists either inhaled or oral. ▪ Use inhaled steroids when having average or severe level of difficulty breathing to assist lung function, reduce mortality, reduce frequency and severity of asthma relapse. 	<ul style="list-style-type: none"> ▪ Lack of spacers for inhalers ▪ Treatment drugs not available in many commune health stations ▪ Lack of peak flow meters

Interventions	Services in each group of interventions	Obstacles to providing services at the commune health station
13. Prevent relapse of COPD and progression of the disease	<ul style="list-style-type: none"> ▪ Quit smoking 	<ul style="list-style-type: none"> ▪ Lack of ability to provide counselling, lack of insurance reimbursement for counselling services
14. Reduce breathing difficulties and improve ability to tolerate exercise	<ul style="list-style-type: none"> ▪ Rapid action bronchodilators 	<ul style="list-style-type: none"> ▪ Drugs not available at many commune health stations
15. Improve respiratory function	<ul style="list-style-type: none"> ▪ Inhale corticosteroid when FEV1 < 50% ▪ Use slow-acting bronchodilators, if still having difficulty breathing after using rapid action bronchodilators. 	<ul style="list-style-type: none"> ▪ Drugs not available in many commune health stations ▪ Lack of equipment to measure lung function
16. Cancer	<ul style="list-style-type: none"> ▪ Clinical exam to detect symptoms and transfer to higher levels for accurate diagnosis 	

An essential intervention package for NCD prevention and control has not been developed or applied at the grassroots level. In order to develop the list of essential interventions that are cost-effective and feasible, it is necessary to choose essential services for each major type of NCD based on cost-effectiveness criteria reaching good standard (below 3 times per capita GDP for 1 year of DALYs) or very good standard (below per capita GDP per year of DALYs), or very low cost (less than 1 USD per time), for use at the grassroots level and appropriate for Vietnam's context. Up till now, the health service delivery system does not yet have a list of best buy services among screening for early detection, diagnosis, treatment and management of NCDs that could be applied throughout the health system.

Continuity of care and people-centered health service provision are difficult to implement in a fragmented health care delivery system. For NCD prevention and control, the people require care and use of services throughout the life cycle, access to essential services near home at the grassroots level and only specialist care at higher levels, in a combined, integrated process between treatment levels in order to ensure continuity of care. However, currently, commune health stations operate relatively independently from higher level hospitals; information on patients is seldom shared. Instead of the ideal in which commune health stations, district hospitals, specialized clinics and provincial and central level hospitals collaborating tightly with each other in patient-centered care, currently people must seek medical services at disparate health facilities that are completely unconnected to each other. Patients with NCDs do not have patient records at commune health stations, health information about patients using services at other health facilities is not archived and shared systematically. A healthcare networking information system is not yet in place. Inter-sectoral collaboration and community-based care for NCD prevention and control is not yet effectively implemented at the grassroots level.

Palliative care is not yet organized systematically in the community. Although the Ministry of Health has issued national guidelines for palliative care for patients with cancer

and HIV/AIDS,⁷⁷ morphine sulfate tablets are widely prescribed, yet palliative care is generally only provided at palliative care centers in central hospitals and oncology centers. Palliative care is not yet widely implemented at the grassroots level, and has only been piloted in a home-care model. According to a 2010 study, palliative care services are only available in 5.3 percent of district hospitals and 10 percent of commune health stations. Also according to the above study, the number of health workers who know about the palliative care treatment guidelines for patients with cancer and HIV/AIDS is only 15.8 percent at the district hospital and 6.7 percent at the commune health station [208].

Finally, even though resources are limited, there is a tendency to build additional specialist hospitals at the provincial level (e.g. mental hospitals) and regional level (12 regional oncology hospitals/centers). The construction of specialist hospitals at the provincial level does not encourage the necessary integration in NCD management, and does not exhibit efficient use of limited resources.

6.3. Priority issues

- The service delivery network is fragmented, lacks integration between prevention and treatment, between facilities, particularly between commune and higher levels, seldom shares information on patients between facilities, does not yet implement continuity of care, does not ensure people-centered care in NCD prevention and control.
- An essential package of cost-effective and feasible services has not yet been determined covering the areas of counselling, prevention, early detection, treatment, and care for NCD prevention and control at the grassroots level, and responsibility for implementation of this basic package has not been assigned to the commune and district levels.
- The grassroots health network does not yet have adequate capacity to provide the essential NCD prevention and control service package because of limitations in professional competencies, inadequate availability of drugs, equipment and financial resources.
- Palliative care is not yet implemented at the grassroots level and in the community.
- Limited resources in the health sector of some provinces is at risk of further fragmentation because of the tendency to continue developing new specialist hospitals for treatment of NCDs, such as mental hospitals, cancer hospitals, and TB and lung disease hospitals.

6.4. Recommendations

Short term

- Develop and implement the project on reform of health services at the grassroots level (from district and lower) using primary health care as the foundation, implement collaboration, integration of preventive medicine, health promotion, treatment, rehabilitation, ensuring linkages and support between different levels of the health system.
- Develop an essential service package for NCD prevention and control, including essential services for mental health care at the commune and district levels for the period 2015-2020, taking into consideration WHO recommendations.

⁷⁷ Ministry of Health Decision No. 3483/QD-BYT dated 19 May 2006.

Long term

- Develop procedures for management, updating, exchanging and archiving health information of NCD patients in the medical services network and between medical facilities to contribute to implementing the continuity of care requirements for NCD treatment.
- Ensure conditions for providing essential NCD prevention and care services, including palliative care: (i) develop and implement continuing medical education plans to strengthen capacity of commune and district health workers to provide counselling, examination and treatment of NCDs; (ii) adjust the lists of drugs and equipment to satisfy requirements for providing essential services for NCD prevention and control at the grassroots level; and (iii) revise regulations on sources of funding for essential NCD prevention and control services following the principle of universal health care.
- Strengthen capacity of general hospitals and integrate NCD prevention and control activities into provincial general hospitals, instead of building new specialist hospitals.

PART THREE: CONCLUSIONS AND RECOMMENDATIONS

Chapter VII: Conclusions

The JAHR 2014 report, developed in the fourth year of implementing the 11th National Communist Party Congress Resolution, and the Five-year health sector Plan for the protection, care and promotion of the people's health for the period 2011-2015, has (i) updated and provided in-depth analysis on health status and determinants; (ii) updated the current situation of the health system, including information on new health policies, implementation of tasks and objectives set out in the Five-year health sector plan 2011-2015, and progress towards achieving the health-related MDGs and Vietnam's health goals; and (iii) provided in-depth analysis on *Strengthening prevention and control of NCDs*, a salient topic currently receiving substantial attention from health policy-makers.

Major findings of the JAHR are summarized below.

1. Health status and determinants

Basic health indicators: In recent years, health status of the Vietnamese people has improved considerably. Several basic health indicators (life expectancy at birth, IMR, U5MR and child malnutrition rates) show that Vietnam has achieved better outcomes than other Asian countries with similar per capita incomes. However, large regional disparities in health indicators including the IMR, U5MR and child malnutrition rate are still a major issue of concern at present. These rates remain rather high in the Central Highlands and the Northern midlands and mountain areas - the two most disadvantaged regions.

Disease burden: In Vietnam, the disease burden caused by communicable, maternal, neonatal and nutritional disorders decreased from 45.6 to 20.8 percent between 1990 and 2010. The disease burden due to NCDs increased from 42 to 66 percent of total DALYs. Among communicable diseases (including maternal, neonatal and nutritional disorders), HIV, lower respiratory infections, TB, preterm birth complications, and helminths infections are the leading causes of disease burden. Among NCDs, cancer and cardiovascular diseases (mainly causing early deaths) are the leading causes of disease burden, followed by mental and behavioral disorders and musculoskeletal disorders (mainly causing disability). Accidents and injuries primarily result from traffic accidents, drowning and falls. The four leading causes of the burden of disease among males are hemorrhagic stroke, injury due to road traffic accidents, HIV/AIDS, and lower back pain. Among women, the four main causes of disease burden are depression, hemorrhagic stroke, lower back pain, and COPD.

Other priority diseases: Many dangerous epidemic diseases are not included in the data on the disease burden since the prevalence and mortality rates are low or these diseases are effectively prevented through vaccinations and other preventive measures. Influenza A(H1N1) and A(H5N1) and some emerging diseases such as the Ebola virus, MERS-CoV and influenza A(H7N9) have potential to cause pandemics. Although Vietnam implements immunization effectively, the burden of disease remains high for diseases that could be prevented by vaccines like rubella (not yet in the EPI), measles (due to weaknesses in IEC and vaccine safety issues), or the rotavirus, meningococcal and pneumococcal (because vaccines are too expensive to include in EPI). Vietnam has been successful in eradicating polio and eliminating neonatal tetanus, and is currently striving to eliminate leprosy, Japanese encephalitis, measles, rabies, malaria, and dengue fever. HIV/AIDS and TB are two diseases with high prevalence and mortality rates.

Some other infectious diseases have high incidence rates such as helminths, lower respiratory infections, and hepatitis (A, B, C) or high case fatality rate, like hand, foot and mouth disease. Child mortality in Vietnam in the perinatal period (up to 7 days after birth) is mainly due to preterm birth complications, congenital anomalies and birth asphyxia/trauma, while among children aged from 7 days to 5 years deaths are mainly caused by lower respiratory infection, diarrhea and drowning. The disease burden of road traffic accidents and drowning has not fallen in recent years, but interventions from other sectors are needed in order to address this burden.

Demographic and socio-economic factors affecting people's health indirectly. Age and gender structure, especially population aging, affect the burden of disease since morbidity patterns vary at different age groups. The number of women in child bearing age (27.0 percent of the population) and the number of children (8.5 percent of the population) creates a huge demand for reproductive and perinatal care services, such as vaccination and prevention of premature mortality. Youth aged 10-24 years, accounting for 24 percent of the population, are generally healthy but require attention especially to instill healthy lifestyle habits, prevent accidents and ensure sexual health. Old age is a risk factor leading to NCDs such as cardiovascular disease, diabetes, and cancer. Thus, the higher the proportion of people aged 65 and older, the heavier the disease burden due to these diseases. Socio-economic development has had great impacts on health due to improvements in nutrition and access to health information and medical services. However, this development also brings about pollution, unhealthy lifestyles and other factors that are harmful to people's health. Disparities in health stem from the population distribution in regions with different levels of socio-economic development and inequality in access to quality health services and preventive services like vaccination.

Environmental, lifestyle, physiological and occupational risk factors and violence directly affect the disease burden. The most important risk factor for disease in Vietnam is inappropriate diet, consisting of inadequate intake of healthy foods, such as fruits and vegetables, and excess intake of unhealthy foods, like processed meat or sugar-sweetened beverages. The second leading risk factor in Vietnam is the set of physiological factors, such as hypertension and high total cholesterol, followed by other risk factors such as smoking, air pollution and use of alcohol or drugs.

Challenges for the health system include:

Priority diseases

- Diseases that currently or in the future have potential to spread widely in society such as zoonotic diseases, HIV/AIDs and TB.
- Dangerous diseases that have potential for eradication, like malaria, Japanese encephalitis, measles, rabies and leprosy.
- Diseases causing high burden of disease or high mortality to children like pneumonia, diarrhea, drowning, congenital anomalies, birth asphyxia and birth trauma.
- Diseases that cause mortality and burden of disease among working age people like traffic accidents, HIV/AIDS and NCDs.
- Diseases with high share of disease burden that could be prevented to avoid financial burden from high treatment costs, especially NCDs. In Vietnam, NCDs that account

for a high share of burden of disease include cardiovascular disease, cancer, chronic respiratory disease, diabetes, liver cirrhosis, chronic kidney disease, joint and muscular disorders, and mental and neurological disorders.

Disparities in health care needs between regions and population groups

- Regional disparities have not declined during the period 2010-2013 for basic health indicators like life expectancy at birth, U5MR, MMR, child malnutrition. Regional disparities in morbidity patterns, in exposure to risk factors and ability to access quality medical services require the health system to have different responses depending on the different socio-economic conditions of different regions.
- Population aging is usually accompanied by high prevalence of severe, prolonged illness that increases the burden on the family, on medical facilities and on health financing sources. The health system has to deal with the heavy burden of providing care to the elderly, while at the same time trying to prevent risk factors for young people by encouraging them to adopt healthy lifestyles to prevent such a burden in the future.

Increased risk factors due to the impact of industrialization, modernization and urbanization

- These factors include air pollution; harmful lifestyle (such as smoking, alcohol, drug abuse); physical inactivity; unhealthy diet; occupational disease and accidents due to industrialization; and factors leading to stress, mental disorders and domestic violence.

Limitations in the health service delivery system

- The preventive medicine system and basic health care services for women and children are fragmented. Linkages between curative and preventive care or between different levels of facilities are weak. Demand for NCD prevention services has not been satisfied. Disparities in access to services and knowledge of self-health care to reduce the risk of diseases lead to differentials in health and mortality outcomes. The healthcare network at the district, commune and village levels remains weak, while quality of care has not been adequately controlled leading to difficulties in meeting the high demand for health services.

2. Update on the situation of the health system

In order to monitor implementation of the Five-year health sector plan, Chapter II has updated the situation of implementing the planned tasks and identifying difficulties and limitations that need to be resolved to achieve the goals set out in the Five-year plan of the health sector for the period 2011-2015.

2.1. Strengthen governance capacity in the health sector

2.1.1. Implementation results

The Ministry of Health in collaboration with other relevant ministries and sectors has submitted draft policy documents to the Government and the Prime Minister and *issued many legal documents* and approved important projects which serve as a basis for the implementation of health sector activities. The Ministry of Health has consolidated and strengthened the

organization of health units under Governmental Decree No. 63/2012/ND-CP and continues to develop a circular on the functions, obligations, tasks, authority and organizational structure of district health centers and a draft decree on the organizational structure and remuneration policies for commune health workers. The Ministry of Health has reviewed and approved the standard Health planning framework and guidelines for provincial health planning and continues to organize training courses on strengthening health management and planning capacity. Some localities have begun to develop provincial health plans in accordance with the standard Health planning framework. The Ministry of Health has developed and implemented health inspection plans, and has proposed measures to fix loopholes in health policies, mechanisms and legislation. The Ministry of Health has strengthened inspection to detect limitations in social mobilization for health and has issued Directive No. 05/CT BYT dated 22 May 2014 on strengthening inspection and revisions to the policy on social mobilization for health and provision of medical services on request (for higher than official prices) within public medical facilities.

2.1.2. Difficulties, shortcomings

Development of legislation has been slow compared to plans. The organizational structure, functions and obligations of medical care facilities, especially at the grassroots level, have not yet been adjusted appropriately to respond to changes in morbidity patterns and to satisfy the population's health care needs. Linkages between preventive and curative care, and between the commune, district, provincial and central levels remain inadequate. Health planning reforms face difficulties due to the lack of motivation for change. Inspection and verification still mainly occur after errors have occurred, rather than as an instrument to actively prevent medical errors. There remain many shortcomings in regulations for state management of social mobilization and provision of health services on request.

2.2. Health human resources

2.2.1. Implementation results

The number of health workers of all types has increased over the years, reaching 7.5 doctors and 2.1 university-trained pharmacists per 10 000 people. Human resources at the district and commune levels have also grown; by 2013 some 76.9 percent of all commune health stations were served by a doctor. The number of health training facilities and the scale of these facilities continue to increase. Policies for managing and improving quality of human resources are being implemented like the granting of medical practice certificates and development of competency standards. In order to improve conduct of doctors towards their patients, the Ministry of Health has organized training courses on strengthening communication, professional conduct and medical ethics. Some policies have been issued and implemented to redistribute health human resources more appropriately between regions and specialties such as Project 1816 (temporary rotations of health workers to lower level facilities); the Satellite hospital project with its technology transfer activities; the project encouraging training and development of health human resources in specialties with human resources shortages; and the pilot project to send newly graduated doctors voluntarily to serve mountainous and other socio-economically disadvantaged areas. A governmental decree on the organizational structure and remuneration policies for health workers in commune-level units has been developed and will be issued in 2014.

2.2.2. Difficulties, shortcomings

Imbalances in qualifications of health human resources between regions and specialties. Highly qualified health workers are mainly concentrated in major cities and economically developed areas. Grassroots level facilities and disadvantaged areas lack health human resources with university and higher level training. The pilot project sending newly graduated doctors voluntarily to serve in disadvantaged areas will have difficulty in sustainably resolving human resources shortages in disadvantaged areas. Implementation of projects to strengthen capacity for lower level facilities face many difficulties because it is difficult to identify the concrete skills that need to be transferred, and the training is not based on infrastructure conditions at the grassroots level. The working environment in disadvantaged areas does not meet requirements needed to provide quality medical services.

Health human resources management does not yet meet needs of society. Conduct of health workers has caused negative reactions in society and among patients in recent years. The mechanism for medical facility management and deployment of medical practitioners into management positions has reduced the number of staff performing professional work and the amount of time health workers devote to professional tasks. The number of nurses per doctor remains low, even though every year many nurses are trained. Issuing of medical practice certificates one time for life without examination of skills has little value in ensuring basic quality of services.

2.3. Health financing

2.3.1. Implementation results

With the macroeconomic situation facing many difficulties, the Government has implemented a fiscal tightening policy, yet state budget is still allocated for regular tasks of the health sector (provider subsidies, salary reform, NTPs and subsidies for health insurance for social policy beneficiaries). During the period 2010-2013, the planned state budget for health grew more slowly than the overall planned state budget, although in 2014, planned state budget spending on health increased more rapidly than the overall plan for state budget spending. Total ODA funding has remained stable. Spending on preventive medicine and health promotion has increased considerably over time due to increased provincial spending on this item. In 2011 recurrent spending on preventive medicine accounted for 69.8 percent of total state budget recurrent spending on health.⁷⁸ The Law revising and amending various articles in the Law on health insurance was enacted by the National Assembly on 13 June 2014. The Ministry of Health has issued circulars guiding implementation of the revised Law on health insurance. By the end of 2013, health insurance covered 68.5 percent of the population. The health insurance fund remains in balance. The Ministry of Health is focusing on developing legal documents guiding implementation of Decree 85 on reforming the operational and financing mechanism in the health sector.

On the basis of a survey assessing the situation and feedback from domestic and international experts, the Ministry of Health issued Decision 5380 to approve the pilot project for revising implementation of capitation payments. The project pilot testing case mix payments

⁷⁸ If preventive medicine spending is compared to total state budget including revenues from user fees and health insurance, then this share would be 43.9 percent, and as a share of total health spending of society, preventive medicine accounts for 27.9 percent.

continues to be implemented with activities to strengthen capacity of staff to implement case mix payments and to develop care pathways and clinical quality standards.

2.3.2. Difficulties, shortcomings

Macroeconomic difficulties have slowed the rate of growth in state budget recurrent spending allocations for health. Fund allocations are insufficient for implementing some key health governance functions, such as health inspections and verification, health statistics, health IEC, and NCD prevention and control interventions in the community. Out-of-pocket spending on health increased to 49 percent in 2012, while state budget spending on health declined to 42.6 percent, falling short of the target of 50 percent. Some provinces have not allocated adequate funds for health care according to the Ministry of Finance budget spending norms. Lack of confirmed sources of funding has hindered implementation of investments in grassroots infrastructure development. In 2014, funds for the health NTPs were cut due to limited state budget, negatively affecting implementation of health programs and projects, especially projects on NCD prevention and control. Progress towards universal health insurance coverage has slowed recently. Use and management of health insurance funds remains inefficient and unsustainable. The health management information system remains weak. Health insurance fund fraud has been increasing.

Reforms to provider payments have been implemented very slowly and face many difficulties directly related to the interests of various stakeholders. Reforms require cooperation, collaboration and consensus building of related parties in order to be implemented. Facilitating conditions for implementing new provider payment models are limited.

The promulgation of legal documents providing guidelines for the implementation of Decree 85 has been hindered due to conflicts with other policies such as social mobilization in the health sector and management of public service prices. Many issues are limiting effectiveness in resource use at state health facilities, such as difficulties in controlling waste and drug prescribing practices. Implementation of financial autonomy in state health facilities has been difficult because revenues are still inadequate to cover all expenditures, particularly labor costs.

2.4. Pharmaceuticals and medical equipment

2.4.1. Implementation results

The task of ensuring adequate supply of essential drugs has been effectively implemented. Spending on drugs per capita increased from 22 USD in 2010 to 31.2 USD in 2013. Domestically manufactured drugs accounted for 46.2 percent of total drugs used in Vietnam in 2012 and covered two-thirds of the active ingredients included in the Vth essential drug list. The drug supply network in disadvantaged areas is expanding. Vietnam produces 10 out of 11 types of vaccines used for the EPI. Traditional medicines have been promoted for use through issuing lists of essential traditional medicines, approving and implementing the Master plan for development of pharmaceutical ingredients, developing regions for cultivating pharmaceutical ingredients that meet good practice standards and strengthening management of sources and quality of drug ingredients.

The drug market remains stable. The drug price index has been rising more slowly than the general consumer price index. Drug prices in Vietnam are lower than prices for similar

drugs in Thailand and China. Implementation of policies on control of drug prices and bidding for drug procurement has shown promising initial effects of reducing prices of drugs paid by hospitals.

The Ministry of Health has been actively implementing the policy on comprehensive management of drug quality through applying good practice standards (GP's) and strengthening the capacity of the drug quality testing system from the central to local levels. In order to promote safe and rational use of drugs, the Ministry of Health has strengthened the role and activities of the drug and therapy committees in hospitals and issued the national action plan to combat drug (antibiotic) resistance in the period 2013 to 2020. The Ministry of Health continues to strengthen surveillance of adverse drug reactions and is developing drug information databases.

The Ministry of Health is collaborating with the Ministry of Finance to research and propose tax incentives for domestic medical equipment manufacturers. Currently, approximately 600 types of medical equipment have been evaluated and permits issued for their use in Vietnam. The network of medical facilities at all levels continues to be consolidated and completed through Projects 47 and 930, building and upgrading many provincial, regional and district hospitals and some specialist hospitals.

2.4.2. Difficulties, shortcomings

A number of essential drugs are still not included in the list of drugs reimbursed by health insurance, including drugs for NTPs, like HIV and TB treatment drugs. In addition, some commune health stations face long delays in obtaining drug supplies, or are provided inadequate amounts and types of drugs, causing difficulties in meeting treatment needs.

Unsuccessful management of drug prices at retail drug outlets that are not attached to medical facilities results from the lack of an effective mechanism to assess reasonableness of drug prices. Although control of drug prices in medical facilities has been achieved through competitive bidding, there are still no measures in place to encourage doctors to pay attention to cost-effectiveness when prescribing drugs. Consensus has not been achieved regarding the organization and assignment of responsibilities to a single leading agency to implement state management of drug prices.

Related to safe and rational use of drugs, use of information about drugs suspended from circulation is not easy to obtain and there is no information to monitor safe and rational use of drugs. There is a shortage of university-trained pharmacists in disadvantaged areas. Inadequate regulations are in place for developing an appropriate model for drug distribution capable of ensuring drug quality. Management of the quality of traditional medicine faces many difficulties because it is difficult to monitor the source and quality of traditional medicine and medicinal ingredients, while many facilities are still only small-scale family enterprises that lack modern equipment.

Reductions in funding from government bond revenues has led to delays in upgrading district hospitals. Some projects had to be temporarily suspended to await further investments in 2015 or had to be converted to other forms of investment, leading to service delivery limitations.

2.5. Health management information system

2.5.1. Implementation results

In the last two years, consolidation of the general statistical reporting system for public and private facilities and application of information technology in the health sector has progressed due to a series of legal documents issued by the Government and the Ministry of Health. In addition, the Government has issued regulations on penalties for administrative violations in the field of statistics. The Ministry of Health has directed the strengthening of health statistical information work and issued a plan for development of the information system to the year 2020 and a vision to 2030. The health sector continues to improve and diversify forms of information to be disseminated. Materials for training trainers on basic health information are being standardized. Localities are using state budget funds and support from donors to implement training for lower level statistical staff on basic statistical information. The health sector is developing a national database of health human resources.

2.5.2. Difficulties, shortcomings

Information to serve monitoring, evaluation and research is currently not meeting needs. Regulations are not in place to guide dissemination of health statistics and database development. Information is often disseminated after long delays and with information gaps, particularly regarding facilities in the private sector or in non-health sectors like transportation hospitals. Surveys assigned by the Government to the health sector for implementation have not been implemented because of limited funds from the health sector. There is no national database on health statistical information.

The position, titles and staffing norms for statistical work in health sector units have not yet been stipulated. The qualifications of statistical workers and planners for synthesizing reports, using and analyzing data and making statistical forecasts remains weak.

At the grassroots level, data are still mainly processed manually and use of information technology remains limited. There is no on-line data synthesizing software to apply at the commune level for reporting to higher levels. The coding of medical facilities and standards for different specialties needs to be completed to create conditions for applying information technology in a standard and uniform way.

2.6. Health service delivery

2.6.1. Implementation results

Various preventive and primary health care activities are being implemented on a large scale. Recently the health sector has focused on strengthening the health care network in maritime areas. Population and family planning activities have been carried out effectively. Many localities have achieved the target of replacement fertility (2.1 children per woman), slowed population growth and implemented safe delivery in order to reduce maternal and perinatal mortality. The number of medical facilities that provide traditional medicine services and the proportion of patients who use these services has increased substantially. The Ministry of Health has updated and amended many new technical protocols and expanded the list of medical procedures that can be implemented at the grassroots level with reimbursement from

the health insurance fund. The Ministry of Health is also implementing various models of chronic disease management and providing guidelines on piloting the family medicine model and the health care model for the elderly.

Many policy documents guiding management of medical service quality and reducing hospital overcrowding have been developed and implemented, such as guidance on managing quality of laboratory tests, on implementation of medical service quality management in hospitals and on medical examination and treatment at commune health stations. In addition various projects have been approved including the project on reducing hospital overcrowding, the satellite hospital project, the family medicine project, and Project 1816. As of May 2014, generally overcrowding was no longer common in provincial and district hospitals. However, doubling or tripling up was still evident in some central hospitals run by the Ministry of Health. Tools for monitoring quality have been developed and piloted. Schools and training centers for hospital management training have been established and thousands of hospital management staff has been trained.

2.6.2. Difficulties, shortcomings

Control of some infectious diseases has not met desired goals, such as reducing TB prevalence and halting the HIV/AIDs epidemic. The food hygiene and safety program is not sustainable while school health programs lack funds and human resources for effective implementation. The proportion of patients treated using traditional medicine remains low, partly because of inconsistencies in regulations. Regarding population and family planning, some poorer areas still have high fertility rates, reproductive health programs are not meeting all targets, and the sex ratio at birth remains out of control.

Quality of services does not yet meet demand. Overcrowding in tertiary hospitals (mainly central hospitals) has been inadequately addressed because patients do not yet trust the quality of lower level facilities. There are many shortcomings in current regulations regarding providing medical services on request and at higher than official prices within public medical facilities and in joint ventures between public and private hospitals, because of over prescription of drugs, laboratory tests and expensive technical services. There is a lack of integration between preventive and curative care programs. Provision of medical services is imbalanced between different levels of providers and continuity of care is missing. Implementation capacity at the district and commune levels remains limited, especially for management of chronic diseases. The Ministry of Health has not yet established an organization for independent quality accreditation of medical care. Hospital regulations have not been updated since 1997 and many technical services do not yet have formal treatment guidelines issued by the Ministry of Health. Need for hospital and quality management training has not been met.

2.7. Implementation of health-related MDGs

Although Vietnam has achieved or is capable of achieving most of the MDGs, there are still some goals that require greater efforts. By the end of 2013, the MDGs that had been achieved include reducing child malnutrition, reducing malaria morbidity and mortality, and increasing access to safe water and improved latrines. Some goals are achievable if the rate of progress continues such as reducing the IMR, increasing the proportion of people receiving ARV therapy among people with HIV/AIDs and decreasing prevalence of TB. Some indicators are not linked

with any specific numeric targets, but reveal trends towards improvement in the situation, such as increased access to universal reproductive health (based on proportion of women giving birth who had received antenatal care or were assisted at delivery by a skilled attendant, the contraceptive prevalence rate and adolescent birth rate) and the increase in the proportion of female sex workers using condoms when having sex with their clients. There is concern that some goals will be hard to achieve by 2015 such as reducing the under-five mortality rate and the maternal mortality ratio. Some sub-targets need more attention such as increasing the use of condoms among people who inject drugs and reversing the recent decline in the rate of children receiving ARV therapy among those with HIV.

3. Control of common NCD risk factors

NCD risk factor control is one of three main groups of measures that WHO recommends using to control and prevent NCDs globally. The four risk factors receiving special attention include tobacco use, harmful use of alcohol, unhealthy diet and physical inactivity. In Vietnam many interventions exist to reduce these risk factors, with different levels of effectiveness.

3.1. Results of implementation

Tobacco control legislation is relatively complete, including the Law on tobacco control and the National strategy for tobacco control to the year 2020 along with decrees and circulars for implementation. Tobacco control policies in Vietnam include four main priority interventions following WHO recommendations: (i) tobacco tax increases and application of the tobacco excise tax; (ii) a comprehensive ban on tobacco advertising, promotion and sponsorship; (iii) health warnings about harm of tobacco use; and (iv) protection of people from exposure to tobacco smoke. Other policies include bans on selling cigarettes to people under 18 years of age; establishment of a tobacco control fund; development of guidelines for tobacco cessation therapy.

The National policy on control of harm from alcohol use to the year 2020 was issued and the draft Law on control of harmful use of alcohol is being developed. The policy on controlling harm from use of alcohol includes three main interventions based on WHO recommendations: (i) increasing the alcohol tax; (ii) limiting access to retail sales of alcohol; and (iii) banning advertising for alcoholic beverages. Other policies include: a Master plan for production of alcohol and beer; control of imports of alcoholic beverages; development of alcohol food safety standards; regulations on penalties for administrative violations; strengthening IEC; and guiding treatment for alcoholism rehabilitation.

The National nutrition strategy for the period 2011-2020 and a vision to 2030 was developed and approved, including specific goals related to healthy nutrition to prevent NCDs like controlling overweight and obesity and limiting cholesterol in blood. The Ministry of Health has issued and implemented IEC on 10 recommendations for a healthy diet, established a clinical nutrition department in hospitals and implemented training of nutritionists. The Ministry of Education and Training has included contents of healthy nutrition education into the care program for preschools. Some large cities have developed projects for cultivation and distribution of safe vegetables. The Ministry of Finance is proposing excise taxes on non-alcoholic sugar-sweetened beverages.

Policies have been developed and activities implemented related to encouraging physical activity such as a national campaigns entitled “All people emulate Great Uncle Ho’s example of physical exercise.” Project 614 was developed to increase the stature of Vietnamese people. Many ministries, sectoral agencies and localities have developed plans and projects to encourage physical exercise, fitness and sports in the population such as in the education sector, for youth and for labor union members. Health IEC programs on O2TV have promoted important messages on encouraging physical activity for health promotion. Some new urban developments have been planned to ensure compliance with allocating a specific amount of green space for sports and physical fitness. Many private fitness centers have been established.

3.2. Difficulties and challenges

3.2.1. Missing, incomplete or inappropriate policies

There are still no national level policies or strategies to encourage healthy diet and strengthen physical activity, especially for the goal of controlling NCD risk factors. Current policies do not always have objectives in line with the situation, for example nutrition policy focuses more on child under nutrition rather than healthy diet and policies on physical exercise focus more on high level competitive sports rather than fitness for the general population.

A Law on control of harmful use of alcohol has not yet been put in place, only a Strategy for control of harm from alcohol abuse to the year 2020 with more limited scope that would be possible in a Law. Regulations are not yet in place to limit the time and places where alcoholic beverages are allowed to be sold or to ban sale of alcohol to intoxicated individuals.

Tobacco control policies still have important shortcomings, such as the inadequately high excise tax that keeps tobacco prices affordably low and prevents this policy from having much effect on limiting tobacco consumption. Regulations on penalties for administrative violations in tobacco control are still difficult to enforce.

Inter-sectoral collaboration has been weak in areas of policy advocacy for increasing excise taxes on alcoholic beverages and tobacco, developing a Master plan for production and distribution of tobacco and alcohol, and a Master plan for transportation, schools and urban areas to serve the goals of NCD prevention and control.

3.2.2. Collaboration for implementing policies has not yet achieved high effectiveness

Activities of ministries and mass organizations and localities have mainly been limited to developing plans and organizing IEC, but have not yet paid attention to monitoring and evaluation of results of policy implementation nor to integration and collaborative actions between units. The reason for this situation is the lack of an effective focal agency to ensure unified organization, with adequate authority to coordinate inter-sectoral actions for integrating NCD risk factor prevention and control activities. In addition, there is not yet a mechanism to mobilize active participation and tight collaboration on NCD risk factor prevention and control between ministries, sectoral agencies, localities and mass organizations.

Violations of regulations over common NCD risk factors are still widespread, including: violations of tobacco advertising at retail outlets; violations of smoking in the workplace or in other public places where smoking is banned; violations on retail sales of tobacco and

alcohol to people under 18 years of age, uncontrolled quality of artisanal alcoholic beverages and use of alcohol during working hours. The reason for this problem is low awareness of the harm of these risk factors, low understanding of policies to control risk factors and low consciousness of the population regarding the need to comply with these regulations. At the same time, collaboration in control, surveillance, and imposition of fines for violations have not been stringently implemented.

There is not yet an integrated surveillance system for the four common NCD risk factors. There is no single unit for surveillance, there is no periodic reporting system with an adequate set of monitoring indicators, and funding for implementation of periodic surveys is inadequate. Despite this, results of some smaller scale surveys do indicate low rates of implementation of measures to control risk factors (see Chapter III and IV).

3.3. Priority issues

- Policies for NCD risk factor control have not been completed and there are inconsistencies or shortcomings.
- There is no single unified focal point or effective mechanism for mobilizing inter-sectoral collaboration in implementing policies to control NCD risk factors.
- There is no system for adequate monitoring and evaluation of risk factors and results of implementing NCD risk factor control interventions.
- Awareness and practice in controlling NCD risk factors among the population remain limited.

4. Implementation of NCD prevention and control programs and projects

4.1. Implementation results

There are four NCD control projects being implemented in the health NTP to the year 2015, including hypertension, diabetes, cancer and COPD/asthma, along with a project on protection of mental health in the community and among children. In recent years, these projects have achieved some important results:

- Expansion of localities where the projects are being implemented in terms of provinces, districts and communes.
- Widespread implementation of health IEC activities with many diverse forms and channels.
- Organization of training to strengthen professional capacity for a substantial number of health workers at all levels.
- Organization of community-based screening of at-risk individuals at different scales.
- Development and strengthening of the network for screening, diagnosis and management of treatment of diseases at different levels.

For details please see Chapter V.

4.2. Difficulties and shortcomings

- There is no single model, focal point or appropriate mechanism for coordination and integration of activities of the different disease control projects. Each project is implemented vertically, lacking linkages with each other and failing to mobilize the participation of other sectors and organizations outside of the health sector. There is no system for close monitoring of NCD control activities.
- The scale (geographic and population) of NCD control projects in the NTP remains narrow and scaling up has been slow. The project on COPD and asthma control has only been implemented in 25 provinces. Cancer registration is only implemented in nine provinces covering only 20 percent of the population. Other projects cover all 63 provinces, but the proportion of districts and communes covered remains limited. The distribution of the network is inappropriate as it is still mainly focused on large cities.
- Capacity for implementing NCD projects is limited because of the lack of trained human resources at all levels, especially at the grassroots level. Activities in counselling, screening, diagnosis and management of treatment are mainly only implemented at the province level. Professional units either have incomplete organization (for example missing key departments in oncology centers), or lack necessary equipment (for example lung function testing equipment for COPD and asthma).
- Almost all projects still pay too much attention to treatment and place inadequate emphasis on prevention. Population-based screening is very costly and ineffective so it is difficult to implement at a large scale, while screening of patients who seek those services or screening of patients seeking care for other ailments have not yet been implemented. Activities of counselling and screening are not yet covered by health insurance.
- There is a lack of stable and sustainable funding for implementing projects. Especially in recent years, funds for implementing projects have been drastically cut, forcing projects to reduce their activities and narrow their scale of implementation or just stop providing services. It is possible that in 2015, no more state budget funds will be allocated for implementing these NCD projects.
- Access to treatment drugs is impeded because many projects have stopped providing free services while health insurance regulations do not yet allow the fund to pay for drugs that were previously distributed for free through NTPs (hypertension, COPD). The list of drugs that should be available at the grassroots level and regulations on how those drugs can be prescribed are not appropriate as the drugs are not yet in the list of drugs for treating chronic illness (for example with hypertension) and drugs are sometimes not available on a regular basis because of difficulties in competitive tendering (for example drugs for mental illness).
- Mental health has not yet received adequate attention for integration into NCD prevention and control activities. There is no Law on mental health.
- Contents for counselling and IEC remain limited, are uninteresting and lack concreteness making them difficult to implement.

4.3. Priority issues

- Funds for implementation of national NCD programs have been reduced dramatically, and may end up being cut completely, leading to these programs being abandoned while integration of their activities into the regular activities of the health system has not yet occurred.
- No model has been developed on organization and leadership for implementing NCD prevention and control activities in the near future with an orientation towards greater integration of the component projects, prioritizing prevention and mobilizing inter-sectoral participation.
- Capacity for implementing activities remains limited, especially at the grassroots level. Funds for implementing screening in the community have been cut, but conditions for implementing screening for NCDs during regular activities of medical facilities are not yet assured, both in terms of human resources, equipment and IEC strategy.
- Some health insurance regulations are not yet appropriate with the particular needs for examination and treatment of chronic diseases, for example, counselling activities and screening for NCDs are not yet included in the list of services that health insurance reimburses, some essential treatment drugs for NCDs are not in the list of drugs that can be reimbursed by health insurance, and some basic drugs for managing NCDs are not available at the grassroots level according to the list of essential drugs.

5. Strengthen the health system response for NCD prevention and control

5.1. Health system governance

Vietnam has developed, promulgated and implemented policies and programs on general NCD prevention and control, as well as specific projects for five groups of NCDs including cancer, diabetes, hypertension, chronic respiratory diseases and protection of mental health.

Nevertheless, NCD prevention and control activities have not yet received a level of priority and political commitment commensurate with the NCD share of disease burden. NCD prevention and control is not currently a high priority in socio-economic development plans of the Government or the Communist Party. There is not yet a comprehensive and long-term national strategy for NCD prevention and control requiring involvement of the whole government and the whole society. The organization of leadership for NCD prevention and control does not ensure multi-sectoral involvement or action and does not ensure integration between individual NCD programs or between NCD programs and implementation of other health care tasks.

Due to the lack of a strategic plan for comprehensive NCD prevention and control, policies for controlling risk factors have not been adequately developed. NCD prevention and control programs only cover five NCD groups, yet the burden of disease from the diseases covered in the program only account for about one third of total NCD burden in Vietnam.

Organization, leadership and management of NCD prevention and control currently is not appropriate with the whole of government, whole of society and multi-sectoral approach.

Programs and projects for NCD prevention and control operate in a fragmented manner without integration between programs or between project activities and the health system in general.

Investment in NCD prevention and control research is not commensurate with the disease burden caused by NCDs. Research on NCDs remains inadequate and cannot satisfy the demand for development and selection of evidence-based policies for NCD prevention and control.

5.2. Health human resources

The size of the health workforce, including NCD specialists, has continued to develop in numbers, and one could say there is no longer a serious shortage, except for mental health human resources.

Health workers working in NCD fields benefit from remuneration packages common to the health sector and special remuneration for some specialties. Mental health workers receive extra priority in their remuneration.

Training programs to grant diplomas to medical doctors and nurses currently include important contents related to NCDs. The university curriculum for nursing, besides general courses, also contains important contents related to NCD care. Many post-graduate programs at universities, institutes and hospitals provide knowledge and in-depth skills related to NCDs. Continuing medical education is being implemented in all NTPs and projects for NCD prevention and control.

Nevertheless, human resources working in NCDs have been assessed as weak, insufficient and lacking uniform qualifications and skills. Capacity of commune health workers does not meet the requirement for managing NCDs or chronic illness. Current deployment of health workers for NCD prevention and management is wasteful because of the lack of integration in tasks performed by health workers at all levels and between facilities at the same level, especially at lower level facilities. Policies for priority remuneration for health workers in general and in specific regions or specialties have been issued, but shortcomings in implementation persist. There is no mechanism to ensure uniform quality of university training programs, particularly programs prioritizing students from remote areas with commitments to return to serve their communities, so the quality of graduates also varies. Effectiveness of training in national health programs for NCD control is not high. Continuing medical education for lower level health workers has been implemented for each individual disease, rather than integrated across diseases. Training activities of some training centers in hospitals lack a clear orientation.

5.3. Health financing

Funds from the state budget are the main financial resource to ensure implementation of NCD prevention and control activities in the health NTP. These activities include training and capacity building for health workers, screening, development of patient treatment management models, IEC, monitoring, and evaluation. Other financial resources for NCD prevention and control activities include recurrent spending from the state budget allocated to units working in the area of NCD prevention and control, funds mobilized from government bond sales for basic construction during the period 2009-2013, other legal sources of investment funds, foreign aid grants and loans, the health insurance fund, and contributions of patients through payment of hospital charges.

Financial resources for NCD prevention and control are limited and incommensurate with the NCD burden. NCD prevention and control, especially for control of risk factors and screening for early detection, has not been adequately prioritized in state funding allocations. Funds from the state budget for NCD prevention and control have been cut recently despite the fact that NCD disease burden is increasing. Many NCD prevention and control activities are not covered by the health insurance fund, because it does not cover preventive medicine activities such as screening for early diagnosis, but also because of constraints in capacity of the grassroots facilities to provide NCD services and health insurance drug formularies that limit drugs available at the grassroots level.

Effectiveness in use of financial resources is low due to fragmentation in financial resource allocations and lack of cost-effectiveness criteria used in selecting interventions. Although financial resources for NCD prevention and control are limited, they are not allocated in a way that would guarantee the highest effectiveness. Curative and preventive care funds are allocated independently, funds are fragmented into multiple projects. There is no strategy for priority selection of cost-effective interventions, and no essential NCD services package has been developed for health insurance reimbursement. Provider payment methods do not encourage early detection and treatment of NCDs in early stages and do not provide appropriate incentives to health workers, instead they encourage use of hospital care rather than primary care, prevention and community health promotion.

Use of financing from the health insurance fund remains limited. The health insurance fund does not pay for some NCD prevention and control services since there are not yet guidelines on payments to cover screening for early diagnosis of some diseases according to the Law on health insurance. The costs of counseling services and therapies for mental illness are not yet covered by health insurance according to current regulations. There are some conflicts in regulations as state budget funds for NTP treatment drugs are cut, but health insurance regulations do not allow the health insurance fund to reimburse those treatment costs.

5.4. Pharmaceuticals and medical equipment

The essential drug list and the health insurance drug formulary have both been issued and updated. These two lists include most essential NCD drugs. The VIth national essential drug list was issued in 2013, including 466 new drugs with 29 pharmacological effects.

In order to guide and encourage use of essential drugs in NCD treatment, the Ministry of Health has issued guidelines on diagnosis and treatment of some NCDs, including hypertension, type 2 diabetes, and asthma. Use of generic drugs is incorporated into these documents.

Control of drug prices. The Ministry of Health has implemented some new management measures to control drug price escalation, including revised regulations on competitive bidding for drug procurement. In many localities, winning bid drug prices were 20 to 30 percent lower than the planned price of the bidding package.

Medical equipment. Most necessary medical equipment for diagnosis and treatment of NCDs has been specified in the Ministry of Health list of essential medical equipment for state health facilities. According to the regulations, commune health stations with a doctor are equipped with a blood pressure monitor, a simple biochemical testing machine, and a simple urine testing machine.

Nevertheless, there remain some difficulties regarding pharmaceuticals and medical equipment for NCD prevention and control:

- No policy is in place to prioritize use and ensure availability of generic drugs and essential drugs. The list of essential drugs for NCDs at the commune level is insufficient, especially drugs for treatment of diabetes and COPD, and palliative care for cancer patients.
- NCD drug access is impeded by the fact that many of these drugs are not available in the medical service provider network, especially at the commune level. In addition, health insurance policy does not cover certain drugs because they were supposed to be provided free-of-charge through NTPs, whose budgets and drug supplies are insufficient or have been cut. Diabetes and hypertension are not in the MOH list of chronic diseases allowing dispensing of adequate drug supply for longer periods of treatment. Contractors do not submit bids for some low cost essential drugs because of low profits. The lack of collaboration between levels of the system also contributes to low access.
- Commune health stations lack some types of equipment needed for screening and monitoring treatment of diabetes.

5.5. Health information system for NCD surveillance

The health statistics information system in Vietnam gathers data and information from hospitals nationwide. Hospitals use the statistical software, Medisoft, along with other software for different purposes. However, there are problems of low interoperability between these different software. National health target programs have their own statistical systems and gather data independently. In order to perform cancer surveillance, Vietnam is operating 9 cancer registry centers in Hanoi, HCMC, Thai Nguyen, Hai Phong, Hue, Da Nang, Can Tho and Kien Giang provinces, in which registry staff actively visit hospitals to obtain information on cancer cases.

The health information system and NCD surveillance are facing the following challenges:

- There is a lack of updated, systematic, population based information on risk factor trends (including behavioral, lifestyle and intermediate risk factors), and on morbidity and mortality.
- NCD data and indicators are compiled from many different sources, but gaps in information remain. Statistics on risk factors have not been integrated into the health statistics system.
- Vietnam's NCD monitoring indicators have not been updated or used for monitoring since these indicators were issued.
- The vital statistics system does not effectively record cause of death in the community.
- There is not yet a health network information software to support sharing of information about NCD patients between health facilities.

5.6. The health service provider network

The diagnosis and treatment networks for cancer, cardiovascular disease, mental illness, TB and lung diseases have received investments for infrastructure development. Project 930 invested in construction of provincial general hospitals and specialist hospitals in the fields of oncology, pediatrics or combined obstetrics and pediatrics, mental illness and TB to respond to National Assembly Resolution No. 18, with a total capital amounting to 45 trillion VND mobilized from government bond sales, provincial budgets and external assistance funds, which were approved and implemented between 2009 and 2013.

A network of oncology hospitals and departments has been established to cover different regions. Up to the present, some 40 out of 63 provinces have oncology hospitals, centers, departments or units, with two thirds of these still under construction/renovation. Capacity for management and treatment of diabetes is generally effective in central and provincial hospitals. Management and treatment of hypertension can be implemented at all levels from central to commune.

The main limitations of the current health care delivery system for the prevention and control of NCDs include:

- The service delivery system has not yet been adjusted and reorganized following the principle of emphasizing people-centered primary health care to meet the NCD prevention and control needs according to WHO recommendations.
- The network for providing NCD care and treatment services in the various NCD prevention and control projects of the national health target program has not been integrated within the health service delivery system, therefore many of the projects only have a small and uneven population coverage, which is particularly limited at the grassroots level, especially the commune level. Close collaboration between prevention and treatment, between different levels of the system and between projects is not taking place.
- Health human resources for NCD prevention and control do not meet requirements and are not growing commensurate with growth in need. The grassroots health network is not capable of providing NCD management services.
- Some policies (e.g., on the district health system organizational structure and health insurance) are not consistent with the requirements for NCD prevention and control.

Chapter VIII: Recommendations

On the basis of the assessment of health status and health determinants, updates on the current situation of the health system and in-depth analysis on the topic of strengthening NCD prevention and control, the 2014 JAHR report makes recommendations for measures to meet health care needs of the population and cope with health determinants (see Chapter I for details), more effectively implement the tasks set out in the Five year health sector plan and the MDGs (see Chapter II for details), strengthen control of common risk factors (see Chapter IV for details), better implement the health NTP projects on NCD prevention and control (see Chapter V for details), and strengthen the health system response for the prevention and control of NCDs (see Chapter VI for details). Below is a general synthesis of recommendations of the report. Detailed recommendations are found at the end of each chapter.

1. Orient the health system to respond to the current disease burden and risk factors

1.1. Develop appropriate strategies for priority disease groups

- For communicable disease, effective interventions include vaccination, disease surveillance, health IEC, screening for early detection, treatment to prevent spread of disease and resolving environmental factors (clean water, sanitation, inhibiting environment for mosquitos to breed, etc.).
- For accidents and injuries, interventions are needed to: increase compliance of drivers with Traffic code, ensure use of safety helmets, prevent drunk driving and strengthen effectiveness of emergency transport services.
- For NCDs, the focus is on preventing risk factors, screening for early detection and effective disease management.

1.2. Reduce regional disparities

- Develop appropriate strategies for reducing disparities in basic health indicators including life expectancy, child mortality, maternal mortality and child malnutrition. In the strategy, ensure priority in budget allocation, develop cost-effective interventions appropriate for disadvantaged regions, and monitor tightly through reports to high level leaders to ensure accountability.

1.3. Control determinants of health

- Develop an evidence base on the harmful effects of health determinants, advocate for ministries and sectoral agencies to strengthen investment in implementing interventions to reduce risk factors.
- Strengthen monitoring of the situation of various risk factors on health (for example, smoking, alcohol use, diet, physical activity, environmental pollution and natural disasters). Monitor the effect of interventions on these risk factors.

- Develop, refine and implement plans to respond to risk factors based on monitoring information and impact evaluation of current activities.
- Strengthen IEC to increase knowledge and awareness of the population about risk factors and how to respond to them. Implement interventions to facilitate the adoption of healthy lifestyles by the population.
- Develop and issue policies that ensure production units pay more attention to the work environment and worker health.

2. Implement tasks in the Five-year health sector plan and the MDGs

2.1. Strengthen health sector management capacity

- Improve capacity and quality of health strategies, policies and master plans.
- Strengthen the role and capacity of the health sector for management and planning.
- Consolidate, refine and stabilize the organization of the health sector from the central to local levels.
- Strengthen inspections, verification and surveillance.
- Strengthen the participation of stakeholders in policy formulation and in development and implementation of health plans.
- Appropriately promote social mobilization; encourage all economic sectors to invest in health services.

2.2. Health human resources

- Develop a health sector workforce of adequate size, assured quality, balanced structure and rational distribution to protect and care for the people's health.
- Continue efforts and strategies for deployment and retention of health workers.
- Continue to improve the quality of training at health worker training establishments.
- Continue to improve management of continuing medical education.

2.3. Health financing

- Increase state budget spending on health, raise the public share of total health expenditures and reduce the out-of-pocket share.
- Prioritize state budget spending on preventive medicine, grassroots health care, primary health care and implementation of social policies for health.
- Develop sustainable universal health insurance coverage.
- Continue to reform operational and financial mechanisms in state health service facilities.
- Reform provider payment mechanisms for medical care.

2.4. Pharmaceuticals and medical equipment

- Ensure adequate essential drugs to serve treatment needs.
- Tightly control drug prices.
- Strengthen management of drug quality and safe and rational use of drugs.
- Promote development of traditional and herbal medicines.
- Strengthen domestic manufacturing of medical equipment.
- Strengthen physical infrastructure of health service facilities.

2.5. Health management information system

- Refine policies and comprehensive plans for development of the health management information system.
- Refine the health statistics indicators, registers and reports in the state and private sectors.
- Strengthen the ability to meet the needs of information and data users.
- Apply information technology in the health information system.

2.6. Health service delivery

- Strengthen the preventive medicine system and the grassroots health network.
- Promote preventive health activities; effectively implement the national health target program and projects.
- Refine policies, consolidate the service delivery network and effectively implement population, family planning services and reproductive health care.
- Improve the quality of medical services.
- Reduce hospital overcrowding
- Strengthen hospital management capacity.
- Strengthen regulation of quality in traditional medicine services.

2.7. Implement MDGs

Effectively pursue the measures laid out in Government Resolution No. 05/NQ-CP (2014) on strengthening implementation of United Nations MDGs related to health, including:

- Raise awareness and strengthen the leadership of the Communist Party and government at all levels for implementation of the health-related MDGs.
- Strengthen mobilization of financial resources.
- Consolidate and strengthen capacity of the health system, especially at the grassroots level and in mountainous, remote and isolated areas.

- Bolster international cooperation.
- Boost inter-sectoral collaboration and involvement of socio-political organizations and the people in the implementation of health-related MDGs.
- Effectively implement technical solutions.

3. Strengthen control of common NCD risk factors

3.1. Complete the legal system

- Strengthen capacity for policy advocacy and policy formulation.
- Gradually complete the policies controlling common NCD risk factors.

3.2. Strengthen organization, leadership and coordination of activities

- **For the leading agencies:** Develop a unified organizational model for risk factor control activities in the framework of a focal organization to lead NCD prevention and control that has adequate capacity and authority to mobilize different sectors and ensure participation of the whole society.
- **For coordinating agencies:** Develop an appropriate organizational model and strengthen capacity of the coordinating agency to lead and coordinate activities for the prevention and control of risk factors

3.3. Monitor and evaluate risk factors

- Establish an effective surveillance system for risk factors and activities to control common NCD risk factors.
- Strengthen activities of checking and evaluating activities to control common risk factors.

3.4. Check on implementation of regulations for risk factor control

- Strengthen health IEC, dissemination of policies (for example regulations on tobacco control).
- Strengthen inter-sectoral collaboration in checking and imposing penalties for violations aimed at improving awareness and practice of the population about risk factor control.

4. Implement NCD prevention and control projects in the national health target program

4.1. Integrate programs into the health system

- Strengthen and integrate NCD prevention and control IEC activities with other health IEC programs.
- Integrate NCD management and treatment into the health service delivery system, particularly at the grassroots level.

- Supplement some services related to NCD prevention and control into the list of services covered by health insurance reimbursement, including counselling and some screening services for early detection of NCDs.
- Train and develop human resources for NCD prevention and control. Strengthen and expand various forms of training to increase knowledge of NCD prevention and control among general practitioners, nurses, technicians and pharmacists at all levels, particularly at the grassroots level. Provide specialist training in cardiology, oncology, endocrinology, pneumology and psychiatry.

4.2. Hypertension program

- Pilot a model that integrates screening for hypertension into the routine medical examination process for people aged 40 and older.
- Organize treatment of hypertension at the grassroots level, primarily at the commune health stations, based on hypertension diagnosis and treatment guidelines of the Ministry of Health (2010) for people without complications. Develop standards for detection, management and treatment of hypertension at the commune health station, integrate these into national commune health benchmarks.
- Emphasize hypertension management through lifestyle change, specifically weight loss if overweight; smoking cessation; increased consumption of fruit, vegetables dairy products, and magnesium; decreased intake of fat, particularly saturated fats and reduced salt intake; increased physical activity; limited use of alcoholic beverages.
- Consider adjusting the list of drugs to treat hypertension in the list of drugs reimbursed by the health insurance fund at the commune level. Choose drugs based on evidence of cost effectiveness and safety. Adjust regulations on the treatment period for which drugs can be dispensed to be appropriate for a chronic disease.

4.3. Cancer program

- Strengthen capacity for cancer registration and management and impact evaluation of cancer control activities. Promote epidemiological research on cancer prevention and control and complete the national cancer data system.
- Continue to invest in developing facilities for diagnosis and treatment of cancer at the central and provincial level. Strengthen professional skills through the Satellite hospital project and technology transfer.
- Implement widespread screening for early detection of cancer for types that are easy to detect early (e.g. breast and cervical cancers). Develop guidelines for training health workers and consider what conditions are necessary for including cancer screening into the group of services reimbursed by the health insurance fund.
- Emphasize cancer prevention activities like smoking cessation; reasonable alcohol consumption; limiting solid fuel use for indoor cooking; weight loss; diet high in fruit and vegetables, fiber, calcium and low in red meat, processed meats, sugar sweetened beverages and salt; and compliance with labor protection regulations when working in toxic conditions.

- Establish and put into operation palliative care units at existing cancer treatment facilities. Develop models for late stage cancer patient care at the grassroots level.

4.4. Diabetes program

- Emphasize diabetes prevention activities like smoking cessation, low consumption of alcoholic beverages, weight loss, diet high in whole grains and low in red meat, processed meat and sugar-sweetened beverages.
- Transform the current diabetes screening program into a model where patients actively seek screening services combined with opportunistic screening during regular medical examinations. Implement screening at commune health stations that have adequate capacity to test for blood glucose.
- Complete the diabetes control network including treatment facilities and community-based facilities for diabetes prevention and control.
- Develop and scale up nutrition counselling offices for diabetics in outpatient clinics of hospitals and at commune health stations.

4.5. COPD and asthma program

- Strengthen activities for prevention, management and treatment of chronic respiratory diseases at the district and commune levels. Emphasize preventive activities like smoking cessation, limit use of solid fuels for indoor cooking and use labor protection devices if working in environments with particulate air pollution.
- Supplement and adjust the list of drugs for treatment of COPD and asthma to ensure they are covered by health insurance reimbursement for outpatient care at all levels.
- Equip grassroots health facilities with standard equipment for measuring lung function (including bacterial filters) to help in accurate diagnosis and effective monitoring of patients. Provide non-invasive and invasive respirators for the provincial level and some regional hospitals for treatment of respiratory failure.

4.6. Mental health protection program

- Develop a national strategy on mental health for the period 2015-2020. Ministry of Health propose to the Government and the National Assembly to develop a draft Law on mental health, with emphasis on strengthening protective factors and reducing risk factors in the community, schools, family and workplace.
- Establish a national steering committee on mental health to strengthen effective leadership, management and inter-sectoral cooperation on mental health.
- Develop and standardize training materials and curricula on mental health care and social care. Complete care pathways and technical procedures for examination, screening, diagnosis and treatment of mental disorders.
- Review the current financial mechanism, ensure that sustainable financial resources for mental health care are available from health insurance and the state budget.

- Provide comprehensive, integrated and community-based mental health and social services. In particular, provide mental health care for children, women, the poor and victims of disasters.
- Develop and complete policies aimed at shifting care and treatment for certain mental illnesses from long-term specialist care facilities to non-specialized medical facilities and care in the community.
- Develop a network of social workers and clinical psychologists to meet the mental health care and social care needs.
- Implement research and epidemiological surveys on mental disorders in Vietnam. Strengthen the information system, evidence and research on mental health. Develop and implement a monitoring and evaluation framework for implementing the strategy.

5. Strengthen the health system response for NCD prevention and control

5.1. Health system governance

- Complete the organizational and stewardship model for NCD prevention and control with the participation of representatives from various ministries, sectoral agencies and social organizations to strengthen inter-sectoral collaboration; allocate funds and assign responsibilities to a number of full time staff to guide and manage NCD prevention and control.
- Integrate NCD prevention and control activities into the medical activities at the grassroots level. During the initial period, in parallel with integrating part of the activities of the vertical programs, it will be necessary to implement strategic plans to improve capacity of the health service delivery system taking primary health care as the foundation.
- Activities that can be integrated among the NCD programs in the initial period include IEC, continuing medical education to strengthen capacity and screening for early detection.

5.2. Health human resources

- Rationally deploy health human resources for NCD prevention and control, with the grassroots level facilities effectively implementing primary care for NCD prevention and control, while higher level facilities have the task of providing professional support, training, monitoring, and providing specialist care. Strengthen remuneration and encourage health workers to work at the grassroots level.
- Strengthen continuing medical education activities that are integrated among the national programs, projects, and agencies, appropriate with the needs of different health care facility levels, involving training quality monitoring and setting of clear goals for training outcomes. Prioritize training of grassroots health workers, combining training with professional support and supervision after training.

- Develop policies and support mechanisms to encourage grassroots health workers to participate in continuing medical education, strengthen forms of training and continuous support in the workplace for commune health workers. Implement measures to require participation in continuing medical education, such as granting time-limited medical practice licenses, with the granting and renewal of licenses dependent on professional skill exams and participation in continuing medical education.
- Organize professional development support for health workers in the field of NCDs directly in the workplace, such as technology transfer and satellite hospitals.

5.3. Health financing

- Increase allocation of state budget, health insurance and tobacco control funds for NCD prevention and control activities.
- Revise the joint Circular No. 09/2009/TTLT-BYT-BTC dated 14 August 2009 guiding implementation of health insurance to adjust the allocation of health insurance funds appropriate with need for treatment and care of NCDs at the commune level.
- Strengthen priority in allocating funds for NCD prevention, health promotion, primary health care and NCD surveillance.
- Revise the Law on Health Insurance and guiding documents to increase the health insurance coverage for services that meet needs for NCD prevention and control. Determine the basic NCD prevention and control service package based on evidence of cost-effectiveness.

5.4. Pharmaceuticals and medical equipment

- Develop and standardize the list of NCD treatment drugs in order to revise the health insurance drug formulary, by supplementing the NCD treatment drugs to allow implementation of essential NCD-related interventions at the grassroots level, taking into account WHO recommendations.
- Review the drug procurement competitive tendering regulations, with a priority mechanism for certain drugs with low prices, to facilitate competitive tendering or sole source tendering.
- Update the list of chronic diseases, add some NCDs into the list of chronic diseases to facilitate drug prescribing for patients with hypertension, diabetes and COPD.
- Revise and supplement the standard equipment list at the commune health station staffed by a doctor to enable provision of essential NCD interventions at the grassroots level, taking into account WHO recommendations.
- Supplement measures to increase access and prioritize use of generic drugs and essential drugs.

5.5. Health information system for NCD surveillance

- Consolidate the monitoring and evaluation system for NCDs and risk factors: (i) update and ensure appropriateness of the monitoring indicators related to NCDs and their risk

factors, based on the WHO global monitoring framework; (ii) consolidate the hospital statistical reporting system, particularly related to NCD prevalence, disaggregated by age and gender; and (iii) train staff and ensure appropriate remuneration to improve quality of cancer registration.

- Study to implement mortality surveillance in the community based on commune health station mortality statistical reporting (strengthen the A6/YTCS registration, forms, guidance and death reporting procedures, strengthen capacity of statistical workers and quality of recording at the commune health station) temporarily until the cause of death registration system in the community is fully functioning.
- Implement a survey on NCD risk factors following the STEPwise approach in 2015.

5.6. Health service delivery

- Develop procedures for management, updating, exchange and archiving of health information for NCD patients in the medical service network and between medical facilities to contribute to implementing continuous NCD care.
- Ensure conditions (human resources, drugs, medical equipment, finances) to provide essential NCD services, including palliative care.
- Strengthen capacity of general hospitals and integrate NCD prevention and control activities into provincial general hospitals, instead of building new specialist hospitals.
- Develop and implement the project for reforming grassroots medical service provision (from district and below) with an orientation of making primary health care the foundation, implementing collaboration and integration of preventive medicine, health promotion, curative care, rehabilitation services and ensuring linkages and support between different levels of the health system.
- Develop an essential package of NCD prevention and treatment services, including essential services for mental health at the commune and district levels for the period 2015-2020, taking into account WHO recommendations.

APPENDIX: MONITORING AND EVALUATION INDICATORS

Monitoring indicators	Unit	Disaggregation	Year						Type of indicator	Source of information
			2009	2010	2011	2012	2013	2015		
Input and process indicators										
Health financing, human resources and infrastructure										
Health spending share of GDP	%	National	6.6	6.36	6.20	5.97	..	..	MOH-NHA
Public share of total health spending	%	National	42.2	46.55	45.23	42.56	≥50%	..	MOH-NHA	
Per capita health spending (current prices)	1000 VND	National	1263	1579	1963	2184	..	..	MOH-NHA
		National				936.0			GSO-VHLSS	
		RRD		890.4		1162.8		..		
		NMMA		454.8		684.0		..		
		NCCCA		642.0		808.8		..		
		CH		656.4		789.6		..		
Out-of-pocket share of total health spending	%	SE		939.6		981.6		..		
		MIRD		741.6		1003.2		..		
		National	50.5	44.84	45.58	48.83		..	MOH-NHA	
		National	6.59	7.2	7.33	7.46	7.5	8.0	5-yr plan	MOH-HSYB
University-trained pharmacists per 10 000 people	Per 10 000 people	National	1.77	1.8	1.9	1.96	2.1	1.8	5-yr plan	MOH-HSYB
Inpatient beds per 10 000 people (not including commune health station)	Per 10 000 people	Public	20.8	21.7	22.5	23.5	24.2	23	5-yr plan	MOH-HSYB
		Private	0.68	1.1	1.1	MSA

Monitoring indicators	Unit	Disaggregation	Year						Type of indicator	Source of information
			2009	2010	2011	2012	2013	2015		
Proportion of commune health stations served by a doctor	%	National	67.7	70.0	71.9	73.5	76.9	80	5-yr plan	MOH-HSYB
		RRD	73.2	75.7	77.5	78.7	82.5	..		
		NMMA	58.2	61.9	63.5	66.4	67.3	..		
		NCCCA	65.9	66.2	66.0	68.8	69.0	..		
		CH	49.5	57.8	66.5	69.7	75.7	..		
		SE	78.4	80.5	85.0	83.4	69.0	..		
		MRD	80.1	80.7	82.2	87.2	75.7	..		
		National	95.7	95.6	95.3	96.4	97.3	>95	5-yr plan	MOH-HSYB
		RRD	96.3	92.5	95.3	92.2	93.3	..		
Proportion of commune health stations served by an obstetrics/pediatrics assistant doctor or midwife	%	NMMA	94.0	95.3	89.7	95.1	91.3	..		
		NCCCA	96.2	96.6	90.5	94.5	96.1	..		
		CH	95.4	96.7	99.2	97.0	99.6	..		
		SE	97.2	97.5	100.0	99.1	99.2	..		
		MRD	96.1	97.3	99.1	96.7	100.0	..		
		National	96.6	97.5	96.9	96.6	91.5	90	5-yr plan	MOH-HSYB
		RRD	97.8	98.4	97.9	98	96.1	..		
		NMMA	97.1	97.8	96.2	96.3	94.0	..		
		NCCCA	96	98.2	98	97.9	88.9	..		
Proportion of rural villages served by a village health worker	%	CH	97.8	97.2	98	98.1	92.1	..		
		SE	99.9	99.9	99.9	96.6	100.0	..		
		MRD	92.2	92.4	92.5	90.8	81.9	..		

Monitoring indicators	Unit	Disaggregation	Year						Type of indicator	Source of information
			2009	2010	2011	2012	2013	2015		
Proportion of communes meeting national commune health benchmarks (new benchmarks applied since 2011) Data for 2011-2012 represent a mix of the old and new benchmarks	%	National	65.4 (2001-2010)	80.1 (2001-2010)	76.8	73.4	42 (50)	60 (2011-2020)	5-yr plan	MOH-HSYB
		RRD	78.6	91.1	89.6	90.3	36.6	..		
		NMMA	55.4	74.3	61.9	53	29.2	..		
		NCCCA	61	73.8	72.5	68.5	36.8	..		
		CH	48.1	64.7	61.1	61.9	37.2	..		
		SE	72.5	87.5	90.2	90.7	66.9	..		
		MRD	72.7	86.5	88.6	87.1	43.1	..		
Number of drug outlets per 10 000 people	Per 10 000 people	National	4.9	5.0	4.6	4.4	4.5		DAV	
Output indicators										
Access to health services; safety and quality of services										
Outpatient consultations per 10 000 people	Per 10 000 people	National	3770	3980	3988				..	MOH-HSYB
		National	1330	1370	1374				..	MOH-HSYB
Average length of inpatient stay	Days	National	6.9	7.35	6.83	6.89			..	MOH-HSYB
		Central	10.8	10.3	9.41	9.51			..	
		Sectoral	11	11	6.55	8.53			..	
		Provincial and district	6.7	7.1	6.61	6.57			..	
Proportion of people having medical treatment in the past 12 months	%	Urban/rural residence and living standards		40.9		39.2				GSO-VHLSS

Monitoring indicators	Unit	Disaggregation	Year							Type of indicator	Source of information
			2009	2010	2011	2012	2013	2015			
Output indicators											
Coverage, intervention impact, risk factors and behavior											
Proportion of women giving birth who had 3 or more antenatal visits over 3 trimesters	%	National	..	79.2	86.7	89.4	84.5	80 (87*)	MDG, NTP, KH National Action Plan*	MOH-NTP For 2013: GSO-SPCFP	
Proportion of pregnant women fully vaccinated against tetanus	%	National	93.7	93.5	94.6	95.5	95.7	..		MOH-NTP	
Proportion of children under age 1 who are fully immunized (7 vaccines in 2009-2010 and 8 vaccines in the period 2011-2015)	%	National	96.3	94.6	96.0	95.9	91.4	>90 (8 vaccines)	MDG, 5-yr plan	MOH-NTP	
		RRD	98.5	98.6	98.2	97.7	94.0	>95			
		NMMA	94.3	94.5	94.5	95.5	90.6	>90			
		NCCCA	95.8	97.3	95	97.1	90.9	>95			
		CH	96.2	93.8	95.4	96.5	81.8	>90			
		SE	95.9	94.1	96.8	93.3	93.0	>90			
Proportion of women giving birth who were assisted by a trained health worker	%	MIRD	96.1	88.1	94.8	95	91.6	>90			
		National	94.4	97.1	97.2	97.9	97.8	96 (98*)	MDG, NTP, National Action Plan *	MOH-NTP	
Proportion of mothers and newborns given postpartum/ postnatal care	%	National	89.2	87.8	87.2	87.3	87.9	85	NTP	MOH-NTP	

Monitoring indicators	Unit	Disaggregation	Year							Type of indicator	Source of information
			2009	2010	2011	2012	2013	2015			
Impact indicators											
Health status											
Life expectancy at birth	Years	National	72.8	72.9	73.0	73.0	73.1	74	5-yr plan	GSO, Census and SPCFP	
		Male	70.2	70.3	70.4	70.4	70.5	..			
		Female	75.6	75.7	75.8	75.8	75.9	..			
Annual rate of decline in fertility	‰	National	Rise 0.9	Fall 0.5	Fall 0.5	Rise 0.3	Rise 0.1	Fall 0.1	5-yr plan	GSO, SPCFP	
		National	2.03	2	1.99	2.05	2.10	1.86		GSO, Census and SPCFP	
Total fertility rate	Average number of children born per woman	RRD	2.11	2.04	2.06	2.11	2.18	..			
		NMMA	2.24	2.22	2.21	2.31	2.11	..			
		NCCCA	2.21	2.21	2.21	2.32	2.37	..			
		CH	2.65	2.63	2.58	2.43	2.49	..			
		SE	1.69	1.68	1.59	1.57	1.83	..			
		MRD	1.84	1.8	1.8	1.92	1.92	..			
		National	69	..	..	..	..	58.3	MDG, 5-yr plan	GSO, Census
Infant mortality rate	Per 1000 live births	National	16.0	15.8	15.5	15.4	15.3	14.8	MDG, 5-yr plan	GSO-SPCFP	
		RRD	12.4	12.3	12.5	12.3	12.2	..			
		NMMA	24.5	24.3	23	23.5	23.2	..			
		NCCCA	17.2	17.1	17.1	17.1	17.0	..			
		CH	27.3	26.8	24.3	26.4	26.1	..			
		SE	10.0	9.6	9.3	9.2	9.1	..			
		MRD	13.3	12.6	12.2	12	12.0	..			
Under-five mortality rate	Per 1000 live births	National	24.1	23.8	23.3	23.2	23.1	19.3	MDG, 5-yr plan	GSO-SPCFP	

Monitoring indicators	Unit	Disaggregation	Year						Type of indicator	Source of information
			2009	2010	2011	2012	2013	2015		
Health insurance coverage rate	%	National	58.2	60.3	65.0	66.4	68.5	70	MOH	
Proportion of people seeking inpatient or outpatient care who have health insurance or fee exemption card	%	National		66.7	..	72.1		..	GSO-VHLSS	
		Poorest		74.1	..	81.5				
		Near poor		61.2	..	67.7				
		Average		60.4	..	66.6				
		Above average		66.6	..	69.4				
Contraceptive prevalence rate (women aged 15-49)	%	Better off		70.9	..	75.3				
Contraceptive prevalence rate (women aged 15-49)	%	National	..	78	78.2	76.2	77,2	70.1	GSO-SPCFP	
TB case detection rate (all forms)	Per 100 000 people	National	114.1	113.9	114	113.9			MOH-HSYB	
Pulmonary TB (AFB+) case detection rate	Per 100 000 people	National	52.2 (59.6)	52.7 (60.0)	57.7	57.5		..	MOH-NTP (HSYB 2011)	
Cure rate for new cases of pulmonary TB (AFB+)	Per 100 000 people	National	90.6	90.5	90.8	91.1		..	MOH-NTP	
Smoking prevalence rate (18 years and older)	%	National	..	47.4				..	MOH	
Proportion of rural households using a sanitary toilet	%	National	48	51.4	71.4 [63%]		67	65	MOH-NTP (JMP)	
Proportion of rural households using clean drinking water	%	National	79	75	89.4 [90%]		94	85	MOH-NTP (JMP)	

Monitoring indicators	Unit	Disaggregation	Year							Type of indicator	Source of information	
			2009	2010	2011	2012	2013	2015				
Proportion of medical facilities whose medical solid waste is treated according to national environmental standards	%	National	74	..	..				80		MOH
Unmet need for family planning (women aged 15-49)	%	National	..	..	4.3	..				MDG	GSO-MICS
Dengue fever new case detection rate	Per 100 000 people	National	12.2	14.8	16.1				..		MOH-NTP	
Malaria incidence (passive detection) rate	Per 100 000 people	National	70.8	62	51.6	49			<15 (2020)	National Strategy	MOH-NTP	
Leprosy prevalence rate	Per 100 000 people	National	0.04	0.04	0.04	0.03			0.2	NTP	MOH-NTP	
Leprosy new case detection rate	Per 100 000 people	National	0.41	0.41	0.43	0.34			0.3	NTP	MOH-NTP	
Population growth rate	%	National	1.06	1.05	1.04	1.06	1.05	0.93		5-yr plan	GSO, Census and SPCFP	
Population	Million people	National	86.02	86.9	87.84	88.77	89.71	<93.0				
		RRD	19.6	19.8	20.0	20.2	20.4	..				
		NMMA	11.1	11.2	11.3	11.4	11.5	..				
		NCCCA	18.9	18.9	19.0	19.2	19.3	..				
		CH	5.1	5.2	5.3	5.4	5.5	..				
		SE	14.1	14.6	14.9	15.2	15.4	..				
		MRD	17.2	17.3	17.3	17.4	17.4	..				
Urban	25.5	26.5	27.8	28.6	28.9	..						

Monitoring indicators	Unit	Disaggregation	Year							Type of indicator	Source of information
			2009	2010	2011	2012	2013	2015			
HIV detection rate	Per 100 000 people	National	16.1	15.9	16.1	15.9			..	NTP	MOH-NTP
HIV/AIDS prevalence	Per 100 000 people	National	187	211.3	224.4	237.5	242.2	<300.0		5-yr plan	MOH-NTP
Food poisoning	Cases	National	5212	5397	4700	5541	5558	..			MOH-NTP
	Incidents	National	152	173	148	168	167	..			
	Deaths	National	35	49	27	34	28	..			
Malnutrition rate of children under age 5 (weight for age)	%	National	18.9	17.5	16.8	16.2	15.3	15		5-yr plan	NIN
		RRD	17.5	14.6	14.2	11.8	10.9	..			
		NMMA	24	22.1	21.2	20.9	19.5	..			
		NCCCA	20.8	19.8	17.8	19.5	16.5	..			
		CH	26.5	24.7	23.8	25	21.8	..			
		SE	14.4	10.7	11.3	11.3	8.0	..			
		MIRD	18.3	16.8	15.4	14.8	13.8	..			
		National	31.9	29.3	27.5	26.7	25.9	26		NTP	NIN
Stunting rate of children under age 5 (height for age)	%	RRD	28.1	25.5	24.8	21.9	20.8	..			
		NMMA	34.8	33.7	32.4	31.9	30.6	..			
		NCCCA	31.9	31.4	29.7	31.2	27.7	..			
		CH	37	35.2	35	36.8	32.9	..			
		SE	25.9	19.2	21.5	20.7	16.5	..			
		MIRD	29.4	28.2	26.8	26	24.5	..			
		National	31.9	29.3	27.5	26.7	25.9	26		NTP	NIN

Monitoring indicators	Unit	Disaggregation	Year						Type of indicator	Source of information
			2009	2010	2011	2012	2013	2015		
Sex ratio at birth	Number of boys born for every 100 girls	National	111	111.2	111.9	112.3	113.8	£113	5-yr plan	GSO, Census and SPCFP
		RRD	115.3	116.2	122.4	120.9	124.6	..		
		NMMA	108.5	109.9	110.4	108.2	112.4	..		
		NCCCA	109.7	114.3	103.3	112.1	112.3	..		
		CH	105.6	108.2	104.3	98.4	114.1	..		
		SE	109.9	105.9	108.8	111.9	114.2	..		
		MIRD	109.9	108.3	114.9	111.5	103.8	..		
Financial protection										
Proportion of households facing catastrophic spending (OOP spending exceeds 40% of ability to pay)	%	National	5.5 (2008)	3.9		4.2				HMU & WHO analysis of VHLS data

Note: Proportion of villages having at least a village based midwife with at least 6 months training (for disadvantaged regions) is a new health sector basic indicator, but no data have been gathered on this indicator so it is not included in the 2014 JAH, but will be included in future JAHRs.

Abbreviations for regions as follows:

- RRD Red River Delta
- NMMA Northern Midlands and mountain areas
- NCCCA North Central and Central coastal areas
- CH Central Highlands
- SE Southeast
- MIRD Mekong River Delta

Abbreviations for sources of data:

- DAV Drug Administration of Vietnam
- GSO General Statistics Office
- HSYB Health Statistics Yearbook
- MDG Millennium Development Goal
- MICS Multi-indicator cluster survey
- MOH Ministry of Health
- NHA National Health Accounts
- NIN National Institute of Nutrition
- NTP National Target Program
- SPCFP Survey of Population Change and Family Planning (GSO)
- MSA Medical Services Administration
- VHLS Vietnam Household Living Standards Survey

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