

Data Collection Survey on Health Sector

Country Report Socialist Republic of Viet Nam

October 2012

Japan International Cooperation Agency
(JICA)

KRI International Corp.

TAC International Inc.

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This report is prepared to support JICA's country operation in health through strategic programming. The contents, however, may need to be supplemented with the latest and more detailed information by the readers since the report is mainly based on literature review and not on field study, with the exception of some countries.

Foreword

Background

The current situation surrounding the health sector in developing countries has been changing, especially at the start of the 21st century. Based on the recommendations from the concept of “Macroeconomics and Health”¹, development assistance for health has greatly increased to accelerate efforts to achieve the Millennium Development Goals (MDGs) by 2015. The development assistance for health has risen sharply from USD 10.9 billion to USD 21.8 billion in 2007². Moreover, development assistance was harmonized by the common framework developed at the three consequent high-level forums in Rome (2003), in Paris (2005) and in Accra (2008).

Regardless of such favorable environmental changes for the health sector in developing countries, the outcomes do not seem to reach the level of expectation in many countries. Many developing countries, particularly Sub-Saharan African countries, will not achieve some of their MDGs 4 (Reduce child mortality), 5 (Improve maternal health) and 6 (Combat HIV/AIDS, malaria and other diseases) by 2015. Therefore, while raising more money for health is crucial for lower-income countries striving to move closer to universal coverage³; “More Money for Health⁴”, it is just as important to get the substantial health gains out of the resources available; “More Health for Money⁵”. Efficiency is a measure of the quality and/or quantity of output of services for a given level of input, and improving efficiency should also be seen as a means of extending coverage for the same cost and the improved health outcomes.

Considering this situation surrounding the health sector in developing countries, in a recent movement of its development assistance work, JICA has been working on country-based analytical work. This consists of macro level and sector wide analytical work aiming to clarify JICA’s aid direction in each country by looking at priority areas of concern and aid mapping. The purpose of the Data Collection Survey on Health Sector is to contribute to JICA’s analytical work efforts. In the past, JICA’s analytical efforts were concentrated on the project planning purpose, as a consequence, information gathered in such analytical works were naturally limited to be around the particular projects. It is therefore thought to be important for JICA to conduct a country-based health sector review to gather complete information and analyze the whole sector to learn about the situation of the country and identify high priority problems and issues to be tackled in the health system.

Objectives of the Study

The key to the formulation of a good project is having conducted thorough sector reviews. Good sector reviews and analyses help us to understand the health situation and its determinants, and the capacity for health project implementation in the countries. They also help us to contribute to the countries for identifying the feasible projects in the context of priorities and developing the necessary policies and strategic planning for the health service delivery. It is also necessary to conduct such health sector review studies on a regular basis in order to develop and implement effective and efficient health projects. Based on this concept, JICA decided to carry out the sector review studies of 23 selected countries. The objectives of the sector review are to give recommendations to JICA on the aid direction for the health sector in each country, and to improve strategic approaches and the efficiency of aid cooperation.

Structure of the Report

The health sector study country report consists of seven chapters. Chapter 1 is the summary of the socio-economic situation of each country. Chapter 2 is an analysis of the national health policy, strategic approaches, and plans. Chapter 3 describes the health situation of each country to show the priority health problems by using health information and data. Chapter 4 is an analysis of the health service delivery function of each country, while Chapter 5 is an analysis of other functions of the country’s health system namely: human resources for health, health information systems, essential medical products and technologies including the health facilities, health financing, and leadership and governance. Chapter 6 is an analysis of the development partners’ assistance and cooperation. Based on the above analysis, Chapter 7 provides recommendations to JICA on the strategic areas of cooperation and its approaches.

¹ WHO announced “Macroeconomics and Health: Investing in Health for Economic Development” in December, 2000. This regards Health is an intrinsic human right as well as a central input to poverty reduction and socioeconomic development and the process helps place health at the centre of the broader development agenda in countries.

² Ravishankar N., Gubbins P., Cooley J.R., et. al; June 2009; Financing of global health: tracking development assistance for health from 1990 to 2007; the Lancet 373:2113-2132

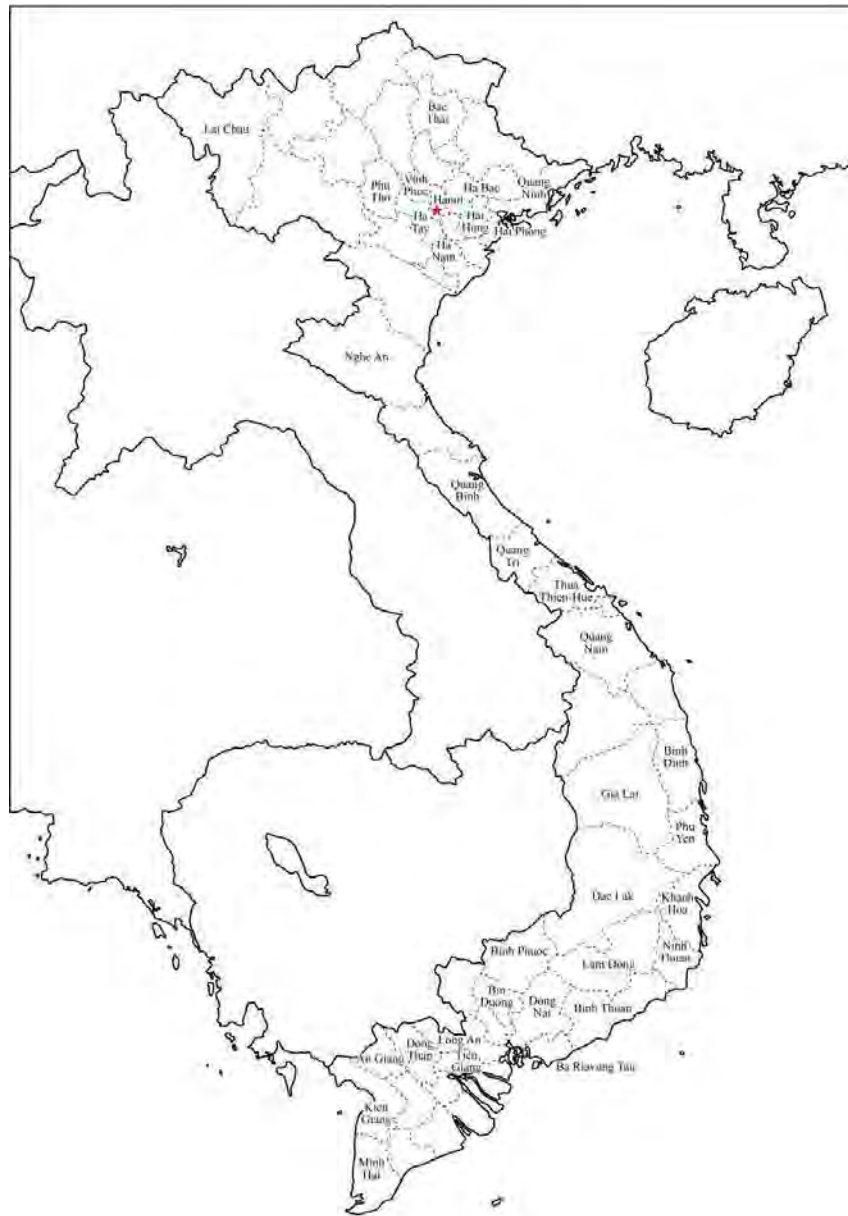
³ According to WHO, Universal coverage (UC) is defined as ensuring that all people have access to needed promotive, preventive, curative and rehabilitative health services, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship.
(http://www.who.int/health_financing/universal_coverage_definition/en/index.html)

⁴ In the World Health Report 2010 (WHO), the report advocates it with the following concrete three suggestions as the requirements; 1) Increase the efficiency of revenue collection, 2) Reprioritize government budgets, and 3) Innovative financing. As the forth suggestion, it advocates increasing development aid and making it work better for health.

⁵ The World Health Report 2010 also suggests the needs of improving the efficacy in the health systems and eliminating the inefficiency/waste will enable the poor countries to improve the availability and quality of the services.

Abbreviation and Acronyms

AEF	Aid Effectiveness Forum
AIDS	Acquired Immune Deficiency Syndrome
ARV	Anti-Retroviral Drug
BCG	Bacille Calmette Guerin
CED	Chronic Energy Deficiency
CHC	Commune Health Center
CRS	Congenital Rubella Syndrome
DOHA	Direction of Office for Healthcare Activities
DOTS	Directly Observed Therapy Short-course
DPT	Diphtheria, Pertussis, Tetanus
DRG	Diagnostic Related Groups
EPA	Economic Partnership Agreement
EPI	Expanded Programme on Immunization
FSW	Female Sex Worker
GAVI	The Global Alliance for Vaccines and Immunization
GDP	Gross Domestic Product
GMP	Good Manufacturing Practice
GNI	Gross National Income
HIV	Human Immunodeficiency Virus
HPG	Health Partnership Group
IDU	Injecting Drug User
IHR	International Health Regulations
JAHR	Joint Annual Health Review
JICA	Japan International Cooperation Agency
JOCV	Japan Overseas Cooperation Volunteers
MDG	Millennium Development Goal
MICS	Multiple Indicator Cluster Survey
MPI	Ministry of Planning and Investment
MSM	Men who have sex with men
NIHE	National Institute of Hygiene and Epidemiology
NTP	National Tuberculosis Programme
PEPFAR	The President's Emergency Plan for AIDS Relief
PGAE	Partnership Group on Aid Effectiveness
PHEIC	Public Health Emergency of International Concern
PMTCT	Prevention of Mother to Child Transmission
POLYVAC	Center for Research and Production of Vaccines and Biologicals
PPP	Purchasing Power Parity
PRSC	Poverty Reduction Support Credit
PRSP	Poverty Reduction Strategy Paper
PVF	Primary Vaccine Failure
SEDP	Socio-Economic Development Plan
SEDS	Socio-Economic Development Strategy
SIA	Supplementary Immunization Activity
TB	Tuberculosis
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VAAC	Vietnam Administration for HIV/AIDS Control
VADE	Vietnam Association of Diabetes Educators
VSTP	Vietnam Stop TB Partnership
WHO	World Health Organization



Source: http://www.freemap.jp/download.php?a=asia&c=asia_viet_all

Socialist Republic of Viet Nam

Summary

1. A remarkable economic success has been achieved in Vietnam after “Doi Moi” in 1986. There has been considerable improvement in the poverty rate for the country as a whole. Gaps in poverty rates by rural-urban residence, by region and by ethnic group have widened which has led to unequal access to health services and accordingly widens the health gap. Poverty reduction is an urgent priority for Vietnam and the government has initiated various measures.
2. The five-year health sector development plan (2011-2015) was developed, which is aligned to the Socio-Economic Development Strategy (SEDS) and the Socio-Economic Development Plan (SEDP). In this plan, under the general objective “continue to develop a health care system towards equity, efficiency and development”, issues to be tackled were raised such as upgrading the health care system’s capacity with priority given to the grass-roots level, promoting preventive medicine and the national health target programmes and improving human resources for health.
3. The current disease pattern of Vietnam is in a transition period, in which the incidence of communicable diseases has declined while the incidence of noncommunicable diseases has increased in recent years. Indicators related to maternal and child health have improved in general, however, the maternal mortality ratio (MMR) has remained unchanged since 2006 and there are huge differences in MMR across regions. Steady progress has been made in the under-five mortality rate and infant mortality rate (IMR); it is expected that MDG 4 will be achieved. However, the under-five mortality rate is still high considering the fact that more than 30,000 children under-five die each year in Vietnam, where the population of this age group is about 7% of the total population. Neonatal mortality rate is also high.

As for infectious diseases, the HIV epidemic is spreading among young people. Most of such adolescents belong to poor households and ethnic minority groups, and vulnerability to HIV infections is high among such groups. Despite progress in the TB case detection rate, it has been unchanged since 2005 and there has not been significant progress in TB incidence rate. In addition, TB-HIV co-infection is a serious problem. In the recent years, the risk of emerging infectious diseases has been increasing as well.

Noncommunicable diseases (NCDs) account for about 75% of all deaths. One in five adults has hypertension and there are about 150,000 new cases of cancer reported every year. Road traffic injuries have been a growing concern in Vietnam which have risen with the economic growth. Population aging is accelerating and the social security system and ensuring the necessary financial sources will be required in response to the rapid aging population.

4. Health service provision is not sufficient in terms of both quality and quantity especially in rural areas. The shortage of human resources to meet all medical needs is also a serious problem. For example, it is the key in HIV control to establish an environment for identifying HIV patients before their condition becomes serious. Unfortunately, there are shortages of human resources for HIV control and health

facilities that can provide the necessary services. Low attention to nutrition among local authorities is also a challenge in nutrition improvement.

5. In health system strengthening, it is required to improve the shortages in human resources and health financing. The Government of Vietnam showed its commitment in the five-year health sector development plan (2011-2015) by allocating at least 30% of its total budget to preventive medicine and primary health services in mountainous, remote and isolated areas. Vietnam is striving to achieve universal health insurance; the estimated coverage was around 60% in 2010. As for a health information management system, there is no guiding principle for system development, which would lead to lack of understanding among stakeholders on the importance of data collection and their correct use. The challenges in health facilities lie in the fact that people expect higher quality of medical service and they are more likely to visit upper-level health facilities directly despite the referral system. To solve this issue, MOH is planning to strengthen the capacity of provincial hospitals and upgrade them to regional hospitals functioning as a regional referral hospital.
6. There has been active collaboration between the government and development partners in Vietnam. In the health sector, the Health Partnership Group (HPG) meeting, Health Sector Working Group and the Joint Annual Health Review (JAHR) are held jointly by the Vietnamese Government agencies including MOH and development partners. Despite such donor coordination frameworks, actual planning and implementation based on the discussions have not been promptly implemented.
7. Priority issues in the health sector in Vietnam include reducing the health disparities, securing qualified health human resources and increasing the quality of health service.

In response to these issues, it is expected that Japan will continue to support health and human development making the best use of the past cooperation. This will lead to the improvement of service quality at health facilities and accordingly to the improvement of patient access to health services. Priority of support should be also given to the areas which are relatively low in health indicators due to the lower access to health services. It is necessary to provide comprehensive support to such areas including improving facilities, equipment and services at primary health centres. Support to noncommunicable disease and aging issues are also potential areas for Japan's further support to Vietnam.

JICA Data Collection Survey on Health Sector

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Chapter 1 Country Situation

The Socialist Republic of Viet Nam (“Vietnam” hereafter) is located on the east coast of the Indochina Peninsula and has a land area of 330,000 square kilometers. It shares borders with China in the north, and Laos and Cambodia in the west. It has 54 ethnic groups with about 86.9 million people (2010) and the Kinh people account for 85% of the country’s population.

A remarkable economic success has been achieved in Vietnam after the introduction of the “Doi Moi”⁶ policy in 1986. Vietnam had an average economic growth of more than 7% per year from 2000 to 2010, although it showed a slowdown due to the Asian crisis in 1997 [1]. As indicated in Table 1-1, Growth National Income (GNI) per capita in 2010 was US\$ 1,160, having risen by about 9 times from US\$ 130 in 1990. According to the Human Development Index (HDI), Vietnam ranks 128th out of 187 countries surveyed (14th out of 20 countries in the region) and is in the ‘medium’ human development category.

Table 1-1 Main Social Indicators in Vietnam

Indicators	Value	Year
Total population	86.94 million	2010
Population growth rate	1.1%	2010
Life expectancy at birth	74.6 years	2009
Crude birth rate (per 1,000 people)	17.0	2009
Crude death rate (per 1,000 people)	5.2	2009
GNI per capita	US\$ 1,160	2010
Economic growth rate (%)	7.4%	2010
Primary school net allowance (%)	98.1%	2010
Human Development Index/rank	0.593/128*	2011
Poverty gap at \$1.25 a day (PPP) (%)	13.1%*	2000-2009

Source : World Development Indicators (March 2012) [2]

* Human Development Report 2011 (UNDP) [3]

Vietnam’s recent economic growth has resulted in remarkable progress in reducing poverty. Despite this, gaps in poverty rates by rural-urban residence, by region and by ethnic group have widened, which leads to unequal access to health services and accordingly widens the health gap [4]. Poverty reduction is an urgent priority for Vietnam and the government has initiated various measures, such as the provision of free health care, tuition fee exemptions for the poor and special support to ethnic minorities.

Vietnam’s administrative system is structured in 4 levels: central, provincial, district and communal. Vietnam has 5 cities⁷ under direct authority of central government, and 59 provinces which are divided into 8 regions (Red River Delta, Northeast, Northwest, North Central Coast, South Central Coast, Central Highlands, Southeast, Mekong River Delta). The districts and communes are sub-divisions under the provinces.

⁶ The 6th National Congress of the Communist Party promulgated Doi Moi reform introducing a market mechanism and open door policy.

⁷ Ha Noi (Northeast), Ho Chi Minh (Southeast), Da Nang (North Central Coast), Haiphong (Red River Delta), Can Tho (Mekong River Delta)

Chapter 2 Development Policies and Plans

2.1 National Development Policy

Vietnam's ten year *Socio-Economic Development Strategy* (SEDS) and five year *Socio-Economic Development Plan* (SEDP) are the key documents in setting the strategic direction for Vietnam's mid- to long-term development. The Ministry of Planning and Investment (MPI) was responsible for preparing the SEDS and the SEDP in collaboration with line ministries, and policy formulation and implementation in Vietnam are aligned with the two documents.

2.1.1 Socio-Economic Development Strategy (SEDS) 2011-2020

The SEDS 2011-2020 was adopted by the *National Congress of the Community Party* in January 2011. The new SEDS was developed based on the review of the previous SEDS 2001-2010 and showed the direction of socio-economic development in the next decade. SEDS 2011-2020 aims to establish the foundation for Vietnam to become a modern, industrialized country by 2020. It emphasizes the government's commitment to undertake the three areas of breakthrough: "developing institutions for a market economy, human resources development and infrastructure development" [5]. SEDS 2011-2020 is focused on achieving sustainability, built around three mainstays: economic development, ensuring social equity and environmental protection. It sets out the goals for each of these. The health-related indicators are as follows:

- Annual population growth rate: 1.0%, life expectancy: 75, universal health insurance coverage (social indicators)
- Universal access to hygienic and safe drinking water (environmental indicator)

2.1.2 Socio-Economic Development Plan (SEDP) 2011-2015

SEDP 2011-2015 details the concrete action plans of SEDS 2011-2020. According to the review of the previous SEDP 2006-2010, it was noted that the economy had not developed sustainably. The quality, efficiency and competitiveness of the economy were still low, the development of infrastructure and institutions was still limited, and the quality of human resources had not significantly improved. In addition, it was also recognized that the gap between the rich and the poor had widened and the quality of health care, especially at the grassroots level, remained low and required further improvements [6]. The overall goal of SEDP 2011-2015 is pave the way for SEDS 2011-2020 as Vietnam moves towards becoming a modern, industrialized society by 2020. It sets the major targets for 1) economy, 2) education, training, science, technology and social aspects, and 3) environment. Health-related targets⁸ set under 2) and 3) are as follows:

- Natural population growth rate in 2015 will stay under 1%
- Birth rate reduces by 0.25% per annum
- Life expectancy in 2015 shall be 74 years on average
- There shall be 8 doctors and 30 sick-beds per 10,000 population
- The coverage of population provided with hygienic water shall be 96% (rural) and 98% (urban)

⁸ The targets were quoted from the draft of the SEDP 2011-2015

SEDP 2006-2011 was recognized by World Bank as the Vietnamese Poverty Reduction Strategy Paper (PRSP). The beginnings of the medium-term expenditure framework (MTEF) development programme began in Vietnam following the Public Expenditure Review (PER) in 2000. However, it was mentioned in the *Joint Annual Health Review 2010* that the MTEF has not been used effectively in Vietnam's health system.

2.2 Health Sector Development Plan

2.2.1 Five-Year Health Sector Development Plan 2011-2015

The VIIth five-year health sector development plan (2011-2015) is aligned to the SEDS/SEDP. In this plan, under the general objective to “continue to develop a health care system towards equity, efficiency and development,” the issues to be tackled were raised. These include upgrading health care system capacity with priority given to the grass-roots level, promoting preventive medicine and the national health target programs, improving quality of health examination and treatment, enhancing performance of population, family planning activities and reproductive health, promoting health human resource, developing health care financing mechanism and universal health insurance, developing the pharmaceutical industry and the domestic production of medical equipment, and strengthening management capacity.

Specific indicators and targets to be achieved by 2015 are proposed in the plan (Table 2-1).

Table 2-1 Indicators and Targets of the Five-year Health Sector Development Plan (2011-2015)

Indicator	Target	Indicator	Target
Doctors/10,000 inhabitants	8	Maternal mortality ratio per 100,000 live births	58.3
Pharmacists/10,000 inhabitants	1.8	Infant mortality rate per 1,000 live births	14.8
Villages with active VHW (%)	90	Under 5 mortality rate per 1,000 live births	19.3
Commune with doctor (%)	80	Population (million inhabitants)	<92
Commune with midwife or assistant doctor in obstetric and pediatric care (%)	>95	Population growth rate (%)	0.94
Hospital beds per 10,000 inhabitants (excluding CHS bed)	23.0	Sex ratio at birth (boys/100 girls)	113
Fully vaccinated infants (%)	>90	Under 5 child malnutrition rate (weight for age) (%)	15.0
Health insurance coverage (%)	80	HIV/AIDS prevalence in community (%)	<0.3
Life expectancy at birth	74.0		

Source: the five-year health sector development plan (2011-2015) [4]

Chapter 3 Health Status of the People

3.1 Overview

The current disease pattern of Vietnam is in a transition period, in which the incidence of communicable diseases has declined while the incidence of non-communicable diseases has increased in recent years. According to the five-year health sector development plan 2011-2015, statistics from hospital inventories indicate that communicable diseases accounted for 25.2% of total diseases in 2008, which had declined from 55.5% in 1976. On the other hand, non-communicable diseases increased from 42.7% in 1976 to 63.1% in 2008 [4].

Looking at the top ten leading causes of morbidity in the country in 2007, pneumonia and acute pharyngitis/acute tonsillitis were ranked as first and second (Table 3-1). Lifestyle-related diseases, such as hypertension, were also included. Traffic accidents occurred exclusively among the younger generation – intracranial injury ranked first among the top ten leading causes of death, followed by HIV/AIDs and pneumonia. In general, communicable diseases are exhibiting a downward trend, although there is still a need to tackle HIV/AIDS and death from non-communicable diseases such as intracranial hemorrhage, acute myocardial infarction and cardiac insufficiency heart failure.

Table 3-1 Top 10 Leading Causes of Morbidity and Death (2007)

The top 10 causes of morbidity			The top 10 causes of death		
	Disease	Numbers (hundred thousand people)		Disease	Numbers (hundred thousand people)
1	Pneumonia	412.2	1	Intracranial injury	3.27
2	Acute pharyngitis/Acute tonsillitis	367.6	2	HIV/AIDs	1.86
3	Acute bronchopneumonia/ Acute bronchiolitis	267.9	3	Pneumonia	1.79
4	Diarrhea/Gastrointestinal infectious disease	262.8	4	Intracranial hemorrhage	1.45
5	Hypertension	244.7	5	Cardiac insufficiency heart failure	0.99
6	Viral haemorrhagic fever	215.0	6	Road accident	0.96
7	Gastroduodenitis	165.7	7	Acute myocardial infarction	0.93
8	Road accident	164.0	8	Septicemia	0.71
9	Acute respiratory infection	142.0	9	Stroke	0.71
10	Bone fracture	136.1	10	Tuberculosis	0.69

Source: Health Statistics Yearbook 2007 [7]

Table 3-2 shows the health-related Millennium Development Goals (MDGs). As for MDG 4, steady progress has been made in the under-five and infant mortality rates towards the 2015 targets. About MDG 5, the maternal mortality ratio has been reduced dramatically over the last twenty years, although there is still room for further improvement. Regarding MDG 6, Vietnam has already achieved the target of 0.15% on malaria control.

Table 3-2 Progress of Health-related Millennium Development Goals

Goal	Indicators	1990	2000	2010	2015 Target
Goal 4: Reduce child mortality ¹⁾	Under-five mortality rate per 1,000 live births	51	29	23	19
	Infant mortality rate per 1,000 live births	37	27	19	16
Goal 5: Improve maternal health ²⁾	Maternal mortality ratio per 100,000 live births	233	130 (2001)	69 (2009)	58
Goal 6: Combat HIV/AIDS, malaria and other diseases	Estimated prevalence of HIV among young adults aged 15-49 (%) ³⁾	0.1%	0.2%	0.4%	<0.3*
	Incidence rate of Malaria (%) ²⁾	1.65% (1991)	0.38%	0.11% (2008)	0.15%
	Prevalence of Tuberculosis (%) ²⁾	0.086% (1992)	0.11%	0.12% (2008)	0.07%

Remark : *MDG target was not available in this survey and HIV/AIDS prevalence in community (%), which was listed in the VIIth five-year health sector development plan (2011-2015), was used as a reference.

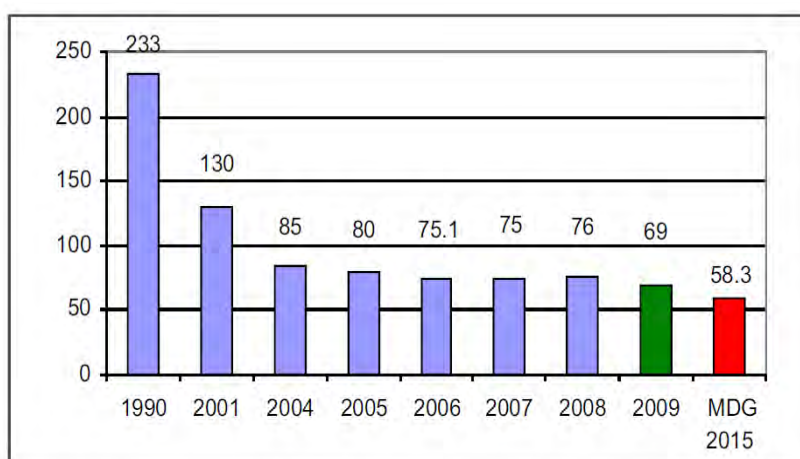
Source : 1) MDG database [8], 2) Ministry of Health [4], 3) HNP Stats [9]

3.2 Maternal and Child Health

3.2.1 Mother's health

As Figure 3-1 shows, maternal mortality ratio (MMR) in Vietnam has significantly decreased since 1990, yet has remained unchanged since 2006. The main causes of maternal death are hemorrhage, infection, pregnancy induced hypertension and unsafe abortion [10].

There are huge differences in MMR across regions, with the highest in the northern mountainous area. The ratio of those receiving maternal health care services, such as prenatal care and skilled birth attendance, is much lower in the North West than the national average (Table 3-3). The main reasons for the situation include the difficult geographical access to health service, lack of trained health workers, lack of knowledge of maternal and child health by mothers and unsafe traditional prenatal care practices.



Source: Millennium Development Goals 2010 National Report, Ministry of Planning and Investment [10]

Table 3-3 Ratio of Those Receiving Maternal Health Care Services (2008)

	Pregnant women receiving more than 3 prenatal checks (%)	Births attended by trained health workers (%)	Pregnant women receiving two doses of tetanus vaccination (%)
Whole country	86.4	94.8	94.5
The Red River Delta	98.5	100	99.8
North East	83.7	92.1	93.5
North West	68.0	79.2	79.6
North Central Coast	92.3	98.6	97.7
South Central Coast	94.5	97.9	98.5
The Central Highlands	69.5	91.6	92.8
South East	94.5	99.4	97.0
The Mekong Delta	90.3	100	97.0

Source : Millennium Development Goals 2010 National Report, Ministry of Planning and Investment [10]

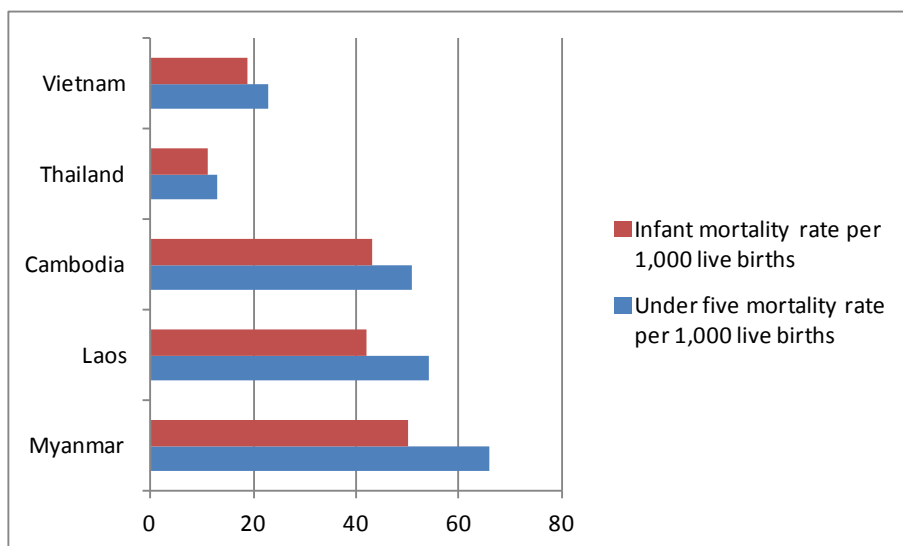
A substantial difference is observed in the percentage of births attended by trained health workers with respect to ethnicity (96 percent Kinh versus 46 percent other ethnic groups) [11].

Major obstacles to the reduction of MMR include geographical factors, the education level of mothers, and unsafe traditional practices in mountainous, remote and rural areas. In addition, the high abortion rate is an emerging issue related to maternal health, with 20 percent of these being teenagers [10].

3.2.2 Children's Health

As explained in Section 3.1, steady progress has been made in the under-five and infant mortality rates (IMR), and MDG 4 is expected to be achieved. When compared to its neighbours, the under-five mortality rate and infant mortality rate in Vietnam are less than half of those in three other countries except Thailand (Figure 3-2). In addition, Vietnam is decreasing the rate of under-five mortality faster than the average for the Asia-Pacific region [10]. However, it could be said that the under-five mortality rate is still high considering the fact⁹ that more than 30,000 under-five children die each year in Vietnam, where the population of this age group is about 7% of the total population.

⁹ According to the *State of the World's Children 2012* (UNICEF), 34,000 under five children died in 2010.



Source: Millennium Development Goals Database [12]

Figure 3-2 Comparison of Infant Mortality Rate and Under-five Mortality Rate with neighboring countries (2010)

In Vietnam, neonatal mortality accounts for about 60 percent of all deaths of children under one and 40 percent of all deaths of children under five. The Ministry of Health has associated the main causes of neonatal mortality with preterm and low birth weight, asphyxia at birth, pneumonia and sepsis [11].

There is a significant gap across regions and ethnic groups. For example, the Northern Mountains and Central Highlands remain among the poorest areas, where most residents belong to ethnic minority groups. These two areas have the highest infant mortality rates of 23 and 24.3 respectively per 1,000 live births, almost double the Southeast's rate of 9.3 and the Red River Delta's 12.5 in 2011 [13].

3.3 Situation of Infectious Diseases

3.3.1 Measles and Rubella

(1) Measles

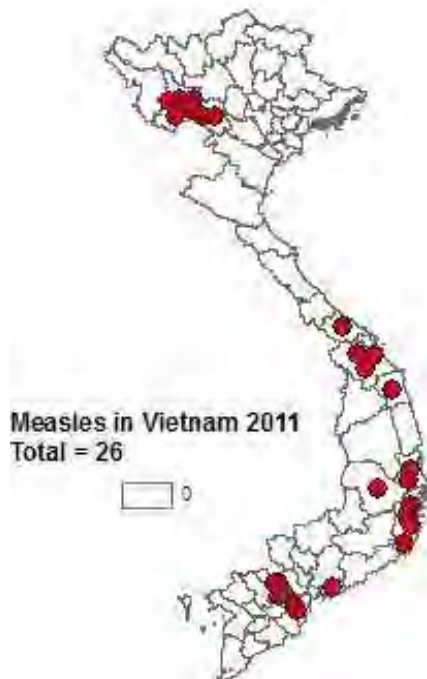
In Vietnam, measles accounts for the largest number of confirmed cases among six diseases for children (polio, measles, diphtheria, pertussis, tetanus and tuberculosis) in the last five years (2007-2011). Despite a measles immunization coverage rate that has surpassed 93% since 1993 with a one-dose schedule, the number of reported cases has increased since 1997 and measles outbreaks have occurred every few years afterward. In 2009, Vietnam experienced the largest measles outbreak in the last ten years and 7,818 cases were confirmed (Table 3-4).

Table 3-4 Confirmed Cases of Measles and Rubella (2007-2011)

	2007	2008	2009	2010	2011
Measles	17	352	7,818	3,404	750
Rubella	3,530	873	1,573	2,300	7,259

Source : WHO Immunization Profile-Viet Nam [14]

The measles infection rate focused mainly on the 1-5 year old and 18-26 year old age groups. The recurring measles epidemic in Vietnam illustrates the limitation of one-dose vaccine coverage with the increase of primary vaccine failure (PVF)¹⁰ and secondary vaccine failure (SVF)¹¹. Figure 3-3 shows the distribution of laboratory confirmed measles cases by province out of a total of 750 confirmed measles cases in 2011.



Source : National Institute of Hygiene and Epidemiology [15]

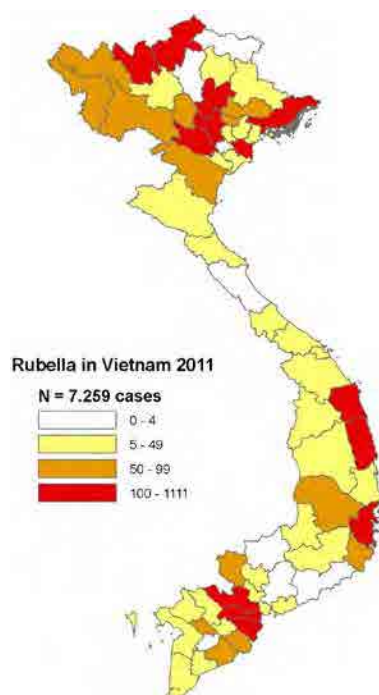
Figure 3-3 Laboratory Confirmed Measles Cases by Province in 2011

(2) Rubella

Rubella and measles share similar symptoms, but rubella has much milder symptoms and it is called “three-day measles” because of its short duration with slight temperature rise. The number of confirmed rubella cases was 7,259 in 2011 (Table 3-4) and Figure 3-4 shows the distribution by province.

¹⁰ Failure to seroconvert after vaccination

¹¹ Waning immunity after seroconversion



Source: National Institute of Hygiene and Epidemiology [15]

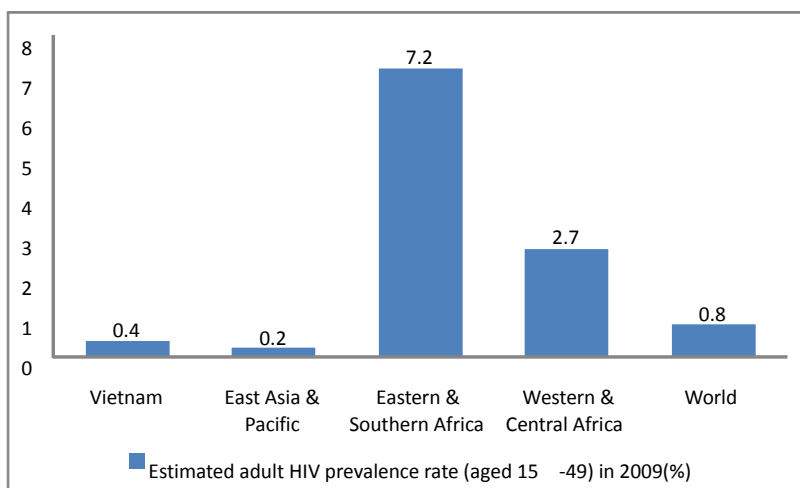
Figure 3-4 Confirmed Rubella Cases by Province in 2011

The highest risk of rubella occurs during pregnancy, as the virus may cause fetal damage known as congenital rubella syndrome (CRS) leading to hearing loss, heart defects and cataracts. One hundred and eighty nine (189) cases of CRS were reported in 2011.

3.3.2 HIV/AIDS

(1) Overview

The HIV prevalence rate in Vietnam was 0.4% in 2009, which was much lower than those in African countries with severe HIV epidemic, and also low compared to its neighboring countries such as Thailand (1.3%), Cambodia (0.5%), Lao PDR (0.2%) and Myanmar (0.6%) (Figure 3-5). However, the epidemic has been growing in Vietnam since 2000, while Thailand, Cambodia and Myanmar stopped the rise of HIV infection to some extent. The estimated number of people living with HIV in Vietnam is projected to be 280,000 in 2012 [16]. In particular, the epidemic is spreading among young people and it is estimated that one out of ten HIV positive people is under 19 years of age, and more than half of HIV cases are among the age group of 20-29 years [11]. The HIV epidemic remains concentrated among high-risk groups such as male drug users (18.4%), men who have sex with men (16.7%) and female sex workers (3.2%) [16]. Twenty five percent of people living with HIV are women as of 2009. The estimated number of pregnant women living with HIV was 4,100 in 2008 and is expected to increase to 4,800 by 2012 [11].



Source: The State of the World's Children 2011 [17]

Figure 3-5 Estimated Adult HIV Prevalence Rate (aged 15-49) in 2009

(2) HIV prevalence by socio-economic characteristics

Table 3-5 shows the top ten provinces with highest HIV prevalence rate. The HIV epidemic began in Ho Chi Minh City and the northeast coast and has spread to Dien Bien, Son La and Yen Bai, where there is rapidly rising prevalence among injection drug users [11].

Table 3-5 Top 10 Provinces with Highest HIV Prevalence (2008)

	Province	Region	HIV prevalence rate per 100,000
1	Quang Ninh	Northeast	689
2	Ho Chi Minh City	South Central coast	678
3	Dien Bien	Northwest	617
4	Son La	Northwest	548
5	Hai Phong	Red River Delta	502
6	Ha Noi	Red River Delta	446
7	Ba Ria-Vung Tau	Southeast	433
8	Thai Nguyen	Northeast	422
9	Yen Bai	Northeast	389
10	Bac Can	Northeast	383

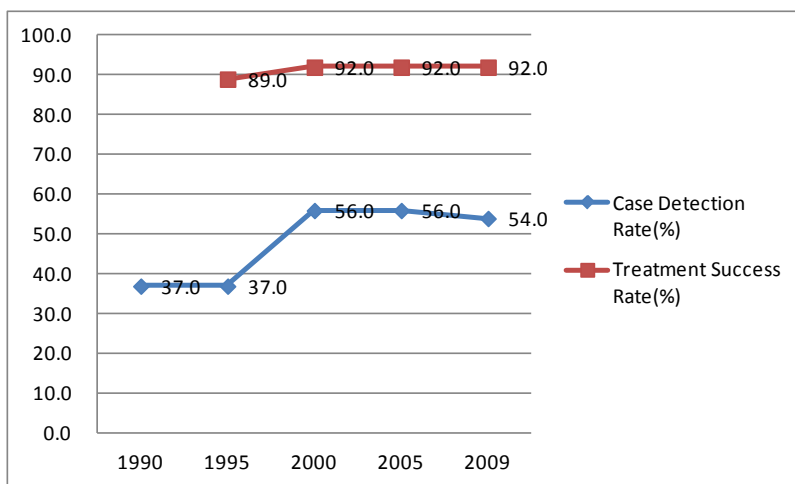
Source: An Analysis of the Situation of Children in Viet Nam 2010 [11]

Important factors related to HIV transmission include ethnicity and migration, as well as unsafe sexual behavior and injecting drug use. Increasing numbers of rural adolescents are migrating to urban areas that promise jobs and a more attractive lifestyle. When they are not able to find proper work, many of them become vulnerable to HIV through injecting drug use or from engaging in sex work. Many of these adolescents are school drop-outs, who belonged to poor households and ethnic minority groups.

The HIV epidemic among women is also increasing. It has been reported that the majority of the women who had never known about HIV/AIDs were mainly from the northwest and central highlands, and belonged to ethnic minority groups having lower levels of education [11].

3.3.3 Tuberculosis

Vietnam ranks 12th among the 22 countries¹² with the highest tuberculosis (TB) burden in the world¹³. The number of TB patients was estimated to be about 300,000 in 2010. An estimated 200,000 new cases are reported and about 30,000 die of TB each year [18]. Vietnam has maintained a treatment success rate of over 90%, which is over the target of 85% according to WHO recommendation (Figure3-6). However, despite progress in the TB case detection rate, it has been unchanged since 2005 and has not reached the WHO target of 70%. In addition, there has not been significant progress in TB incidence rate (Table 3-6).



Source: Millennium Development Goals Database [8]

Figure 3-6 Progress of TB Case Detection Rate and Treatment Success Rate (1990-2009)

Table 3-6 Progress of TB Incidence Rate (1990-2010)

	1990	1995	2000	2005	2010
TB incidence rate per 100,000 population	204.0	204.0	204.0	205.0	199.0

Source: Global Tuberculosis Control: WHO Report 2011 [18]

Vietnam is one of 27 high multidrug-resistant TB (MDR-TB) burden countries. An estimated 7,000 new MDR-TB cases are reported each year. In addition, there are an estimated 6,400 new TB-HIV co-infected patients every year [19]. The Ministry of Health addresses TB-HIV co-infection and has committed to take measures to tackle this issue [4]. In general, MDR-TB occurs almost always due to

- 1) poor adherence to treatment
- 2) inappropriate prescription
- 3) poor drug quality

In Vietnam, anti-TB drugs, even for second-line treatment¹⁴, are often available on the market without prescription and accordingly are less likely to work for the appropriate treatment of MDR-TB. There is a

¹² Asian countries account for the 22 countries including Thailand, Cambodia and Myanmar.

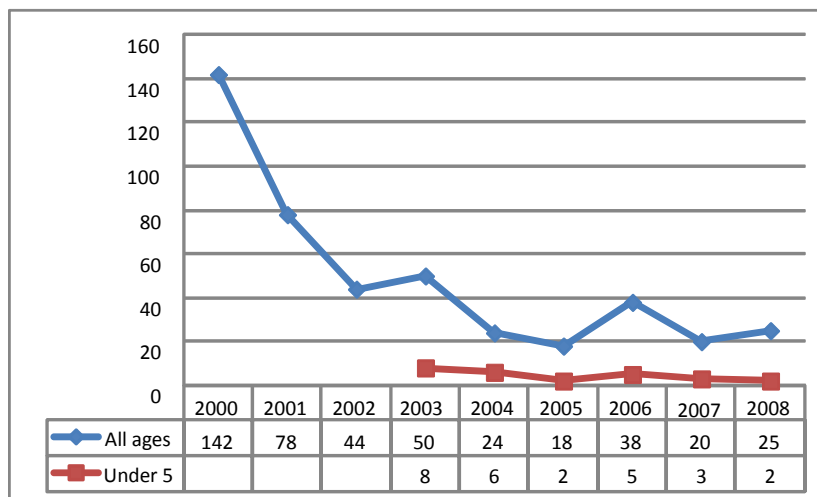
¹³ It is said that TB incidence is associated with HIV infection and MDR-TB. In Vietnam, there are several issues to be resolved including increasing numbers of TB-HIV co-infection and MDR-TB cases, lack of adequate diagnosis for risk groups and difficulty ensuring the quality of anti-TB drugs.

¹⁴ If first-line anti-TB drugs are not effective, the use of second-line drugs is required which are more expensive and need more time for treatment.

high rate of MDR-TB occurring in poorly-ventilated environments such as prisons, and TB care in the private sector is often not in accordance with international standards [20].

3.3.4 Malaria

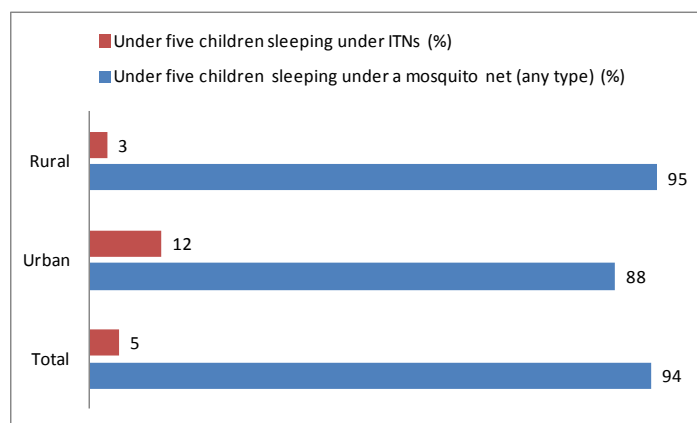
According to Ministry of Health, the prevalence of malaria was 1.08 infections per 10,000 inhabitants in 2006 and declined to 0.68 in 2009 [4]. Overall, the recent trend in malaria deaths has been downwards although there are variations each year (Figure 3-7).



Source: World Malaria Report 2010 [21]

Figure 3-7 The Number of Malaria Death (2000-2008)

It can be said that the preventive measures taken by the Vietnamese government have been effective. Looking at the usage of mosquito nets, the percentage of children under-5 sleeping under insecticide treated nets (ITNs) is much lower in rural areas than urban areas, although the percentage of the usage of mosquito net (any type) is slightly higher in rural areas than urban areas (Figure 3-8). In addition, about twenty eight percent of the national population is susceptible to the risk of malaria reoccurrence, as they live in malaria prevalent regions – mountainous areas, coastal areas, remote regions and border areas with ethnic minorities [4]. It is reported that the two main factors contributing to the inequality of malaria infections are income and ethnicity [11].



Source: Viet Nam Multiple Indicator Cluster Survey Report [22]

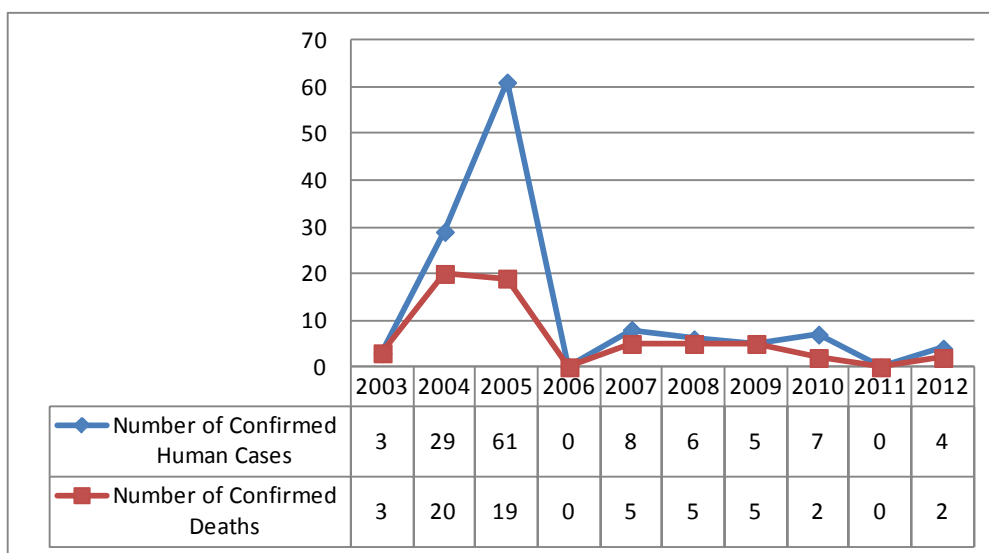
Figure 3-8 Proportion of Children Under-five Sleeping Under a Mosquito Net (2006)

3.3.5 Dengue Fever

The annual morbidity of dengue fever decreased from 112 per 100,000 population in 2001 to 93 per 100,000 population in 2010 [23]. However, the burden of dengue fever infection remains high; 105,370 cases and 87 deaths were reported in 2009. This is the fourth highest level among 37 countries¹⁵ in the Western Pacific regions after Cambodia, Malaysia and Philippines [24]. Vietnam is one of the five countries in the region with the highest dengue burden [23]. Seventy percent of the reported cases are concentrated in southern Vietnam, and there has been an increase in the number of dengue cases in the central highlands. In addition, an outbreak occurred in some northern provinces with 16,175 cases of dengue fever; 4 deaths were reported in Hanoi alone in 2009. Thus, there has been a downward trend in the morbidity of dengue fever, but the infection has been expanding its endemic areas.

3.3.6 Emerging Infectious Diseases

Vietnam has been exposed to threats of emerging infectious diseases including Severe Acute Respiratory Syndrome (SARS) in 2003, highly pathogenic avian influenza virus (H5N1) outbreak in 2004 and most recently, pandemic influenza A (H1N1). As of April 2012, Vietnam had 123 cases of H5N1 and 61 deaths (case fatality rate: 49.5%) (Figure 3-9), making Vietnam the second worst-hit country after Indonesia [25]. The outbreak of H5N1 resulted in great economic losses by the slaughter of poultry to prevent its transmission to humans. The number of reported H5N1 cases has decreased thanks to the control measures adopted by the Vietnamese government. However, proper control measures are still required considering the high fatality rate of H5N1. Caution is still required for H1N1 as well as it has the potential threat to be a lethal and highly contagious virus having further epidemics [4].



Source: WHO. Avian Influenza Weekly Update Number 329 (27 April 2012) [25]

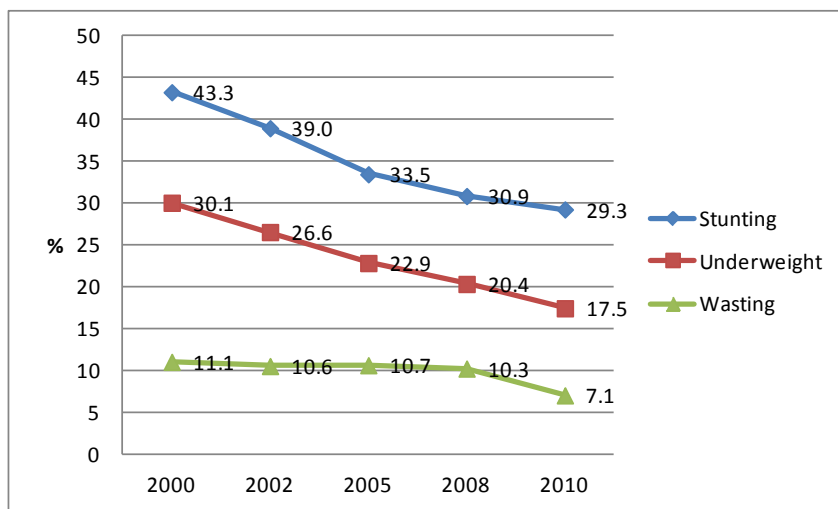
Figure 3-9 Confirmed Avian Influenza A (H5N1) Human Cases and Deaths in Vietnam (2003-2012)

¹⁵ Dengue cases were reported in 25 out of 37 countries in 2009.

3.4 Nutrition

3.4.1 Nutritional Status of Children

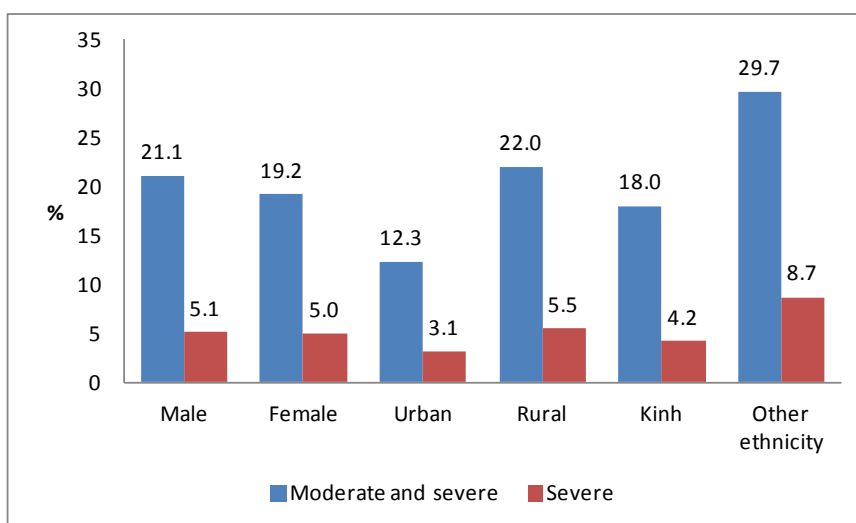
Progress has been seen in the nutritional status of children under-five in the rates of stunting, underweight and wasting in the past 10 years (Figure 3-10). The improvement in stunting (low height for age) has been slow compared to the reduction of the rate of underweight, and one in three children is still stunted.



Source: Summary Report General Nutrition Survey 2009-2010 [26]

Figure 3-10 Nutritional Status of Children Under-five (2000-2010)

Figure 3-11 shows the prevalence of severe and moderate underweight in children under-five by sex, location and ethnicity. It indicates that differences in underweight malnutrition by location and ethnicity are significant compared to the difference by sex (Figure 3-11). The prevalence of underweight malnutrition increases rapidly between six months and two years of age. This is the period when nutrition needs are high and children finish breast feeding as well. Poor quality of complementary food during this period would make them more susceptible to diarrhea and respiratory diseases [11].



Source: An Analysis of the Situation of Children in Viet Nam 2010 [11]

Figure 3-11 Comparison of the Prevalence of Underweight in Children Under-five by Sex, Location and Ethnicity (2006)

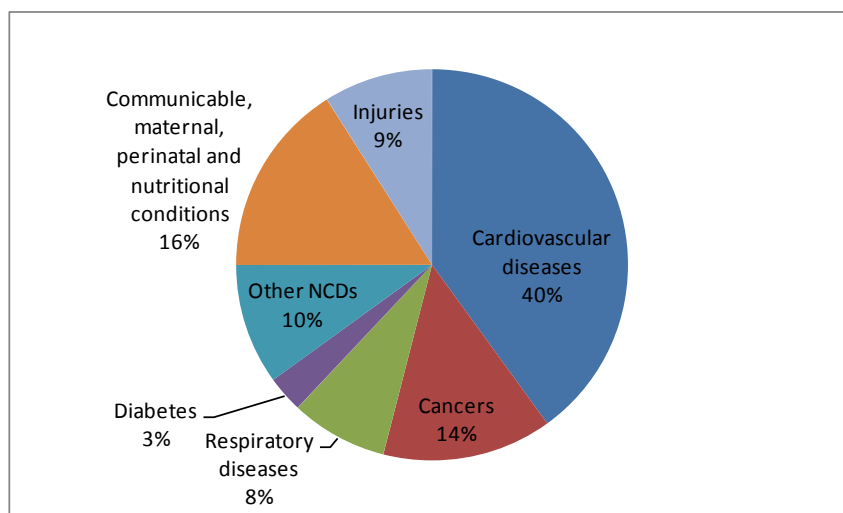
3.4.2 Nutritional Status of Mother and Pregnant Women

The prevalence of chronic energy deficiency (CED) in mothers with children under-five has reduced from 26.7% in 2000 to 20.6% in 2010. In addition, the prevalence of CED among mothers aged under 30 is higher than those aged 30-49 [26]. According to the 2008 national nutrition survey report, iron deficiency anemia occurred in 38% of pregnant women [11].

3.5 Others

3.5.1 Noncommunicable Diseases (NCDs)

There have been changes in disease patterns in Vietnam and the incidence of non-communicable diseases (NCDs) has increased due to changing lifestyles, urbanization brought by economic growth and improvements in life expectancy. Figure 3-12 represents the proportion of cause-specific deaths in 2008 and NCDs accounted for about 75% of all deaths [27]. The prevalence of diabetes has almost doubled from the 1990s to 2000s and one in five adults has hypertension. There are about 150,000 new cases of cancer reported every year [28].



Source: Non-Communicable Diseases in the Western Pacific Region: a profile. 2012 [27]

Figure 3-12 The Proportion of Cause-specific Deaths (2008)

Smoking (20.1%) and physical inactivity (14.9%) are significant risk factors for many serious conditions or diseases. In addition, metabolic risk factors to be diagnosed with metabolic syndrome include raised blood pressure (33.0%), overweight (10.2%), raised blood glucose (6.9%) and obesity (1.7%). There are gender differences in the mortality of cancers of the liver, lung and stomach¹⁶, and it is estimated that gender difference in tobacco smoking (male: 40.4%, female: 1.0%), which is one of the risk factors for life-style related diseases, might contribute to the differences in the mortality [27].

Road traffic injuries have become a growing concern in Vietnam. In 2007, about 12,800 deaths and 19,546 injuries from road traffic accidents were reported and the majority of these are in the 15-49 years age group.

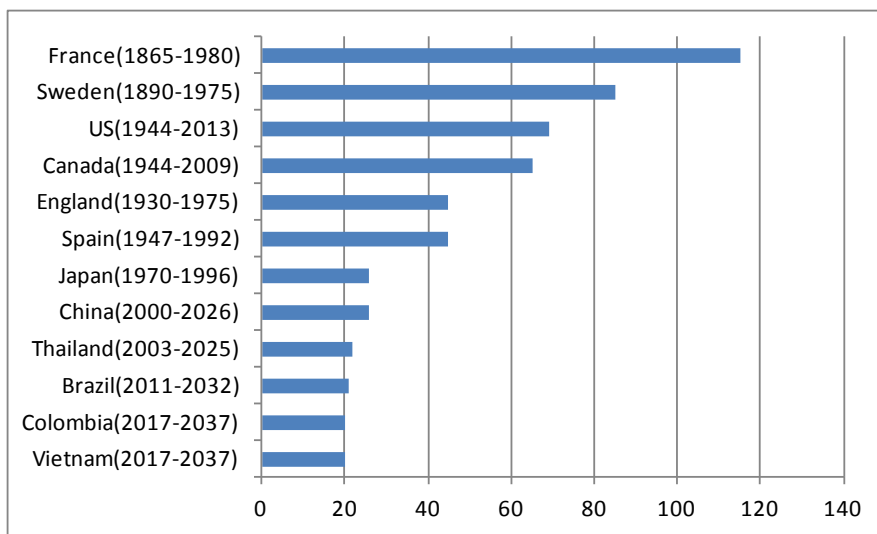
¹⁶ According to the study on causes of death in the five-year development plan, in about 9,300 cases the proportion of death by cancer by gender is as follows - liver (male: 6.4%, female: 3.1%), lung (male: 4.6%, female: 2.8%), stomach (male: 2.4%, female: 1.9%)

In particular, this is a serious concern among the younger generation; road traffic injuries are the leading cause of death for the age group of 15-29 years in Vietnam [29].

One of the main contributors for the increase of road traffic injuries is motorization associated with economic growth. As of December 2008, there were 26.8 million registered vehicles, 95% of which are motorized two-wheelers. Other reasons include inappropriate road designs, low awareness and lack of knowledge of road safety [29].

3.5.2 Aging

It is a concern that population aging will be accelerated in Vietnam due to the decreasing fertility rate, decreasing mortality rate and increasing life expectancy. It is estimated that the percentage of the population aged 60 and over will reach 10% of the total population in 2017, and enter country will enter the so-called “aging phase” [30]. Thailand already entered the period of an “aging society” in 2003 and is expected to become an “aged society” in 2025¹⁷. This transition is projected to take only 20 years (2017-2037) in Vietnam (Figure 3-13), which is a shorter time period than that which Japan experienced¹⁸. Social security systems and ensuring the necessary financial sources will be required in response to the rapidly aging population.



Source: UNFPA. The aging population in Viet Nam: Current status, prognosis, and possible policy responses.2011 [30]

Figure 3-13 Time Needed to Move from “Aging society” to “Aged society” in Some Countries

¹⁷ Aged society: 14-21% of the population are 65 years or older. Hyper-aged society: 21% or more of the population are 65 years or older - Japan entered the hyper-aged society in 2007 with 21.5% of the population over 65.

¹⁸ It took 26 years (1970-1996) for Japan to become an “aged society” from an “aging society.”

Chapter 4 Health Services

4.1 Maternal and Child Health

4.1.1 National Policies and Visions

According to the *National Strategy on Reproductive Health Care*, for the 2001-2010 period its goal was to achieve a marked improvement in the reproductive health status and narrow the gap between regions and target groups. There were seven objectives¹⁹ under the strategy such as improving the health status of women and mothers, ensuring equal rights in decision-making of family planning and improving adolescents' awareness and education [31]. In the following *National Strategy on Reproductive Health Care (2011-2020)*, the new challenges Vietnam face are addressed including the imbalance of sex ratio at birth, migration, aging and the need to further improve the quality of sexual and reproductive health services and commodities²⁰ [32].

4.1.2 Maternal and Child Health Care Service Provision and Utilization

Table 4-1 shows that the major indicators of reproductive health care services have slightly increased. According to *Joint Annual Health Review (JAHR) 2010*, which was conducted by the Ministry of Health and development partners, the main contributor for the improvement of the reproductive health indicators was the strengthened reproductive health service network from the central to the local level [33]. For instance, 100% of the provincial reproductive health centers were strengthened²¹ and 100% of the district hospitals/district health centers have a reproductive health department. In addition, 98.6% of communes have a commune health center and 84.4% of villages have village health workers. JAHR analyzed how the provision of appropriate reproductive health services through the service network contributed to the improvement of the situation.

Table 4-1 Major Indicators of Reproductive Health Care Services (2007-2009)

	2007	2008	2009
Proportion of pregnant women who have received 3 or more antenatal exams (%)	86.6	86.7	88.3
Proportion of women having post-partum exams (%)	87.5	88.5	89.2
Proportion of deliveries assisted by a trained medical worker (%)	94.3	94.7	94.9
Proportion of pregnant women receiving 2 or more tetanus vaccinations (%)	94.6	93.5	95.1

Source: Joint Annual Health Review 2010: Vietnam's Health System on the Threshold of the Five-year Plan 2011-2015 [33]

Looking at the immunization coverage, Vietnam's Expanded Programme on Immunization (EPI) has implemented 6 vaccines to prevent 6 diseases for children (tuberculosis, diphtheria, pertussis, tetanus, polio, measles) and has introduced new vaccines such as hepatitis B, cholera, Japanese encephalitis and typhoid fever. Table 4-2 shows the immunization coverage; Vietnam has been able to sustain high routine coverage of more than 90% for five of the six vaccines. Vietnam produced major EPI vaccines themselves with the exception of

¹⁹ The seven objectives included 1) advocacy and IEC, 2) reducing fertility and decreasing unwanted pregnancies and abortion-related complications, 3) ensuring prenatal and antenatal care and safe delivery, 4) taking preventive measures for sexual transmission diseases including HIV/AIDS, 5) providing early diagnosis and treatment with breast cancer and other cancers of the male and female reproductive tracts, 6) improving adolescents' education and counseling and 7) improving male and female awareness of sex and sexuality

²⁰ It was not confirmed in this study whether the new national strategy was already officially approved or not

²¹ Ministry of Health Decision No. 23/2006/QD-BYT

the measles vaccine. After the approval for the sales of the measles vaccines originally produced in Vietnam in 2009 with the support from the Japanese government²², Vietnam was ready to respond to the second dose of measles vaccine, which was a great achievement in providing EPI services.

Table 4-2 Immunization Coverage (2010)

BCG	DPT1	DPT3	Polio	MCV	Hep B3
94%	93%	93%	94%	98%	88%

Source: Immunization Summary: A statistical reference containing data through 2010 [34]

As for family planning, the contraceptive prevalence rate was 79.5% in 2008 [12]. The reason for the high prevalence rate includes the improved use of modern contraceptives. For example, condoms and the pill accounted for only 2% and 1% of all contraceptive users respectively as of 1988, but those had increased to 10% and 13% by 2006. The prevalence rate of IUD was 55% in 2008 [33]. The total fertility rate (TFR) in Vietnam decreased from 2.33 in 1999 to 2.03 in 2009. However, there are variations ethnic groups ranging from 1.95 of Kihn to 4.96 of Mong [35].

4.1.3 Challenges in Maternal and Child Health Care Service

As stated earlier, the situation of maternal and child health care service has improved in general. However, there are still problems to be resolved. JAHR 2010 raised the following issues as challenges:

- Maintaining or further reducing the TFR: The TFR in some provinces (in the Northern midlands and mountains, the North and South Central Coast and the Central Highlands) has not yet reduced to the replacement-level fertility²³
- Reducing imbalanced sex ratio at birth: 110.6 boys per 100 girls in 2009 [36]
- Providing quality of family planning and reproductive health services, especially in remote, isolated and disadvantaged areas
- Reducing the geographic and economic disparities in maternal and child health
- Improving safe abortion-related services
- Reducing reproductive tract infections and sexually transmitted diseases
- Expanding reproductive health care for youth and adolescents

4.2 Situation of Communicable Diseases Control

4.2.1 Measles and Rubella Control

(1) National policies and visions

Improving EPI programme is prioritized in the five-year health sector development plan 2011-2015, and it addresses the need of ensuring the production of EPI vaccines domestically by reaching WHO's standard for Good Manufacturing Practice (GMP) [4].

²² Japan established the measles vaccine production facility by grant aid and provided technical cooperation to produce measles vaccine from 2006 to 2010.

²³ The replacement-level fertility is the total fertility rate at which adults have just enough total babies to replace themselves. The replacement fertility rate is roughly 2.1 births per woman for most industrialized countries (Wikipedia)

As for rubella, it is important to provide vaccine for women of child bearing age to prevent congenital rubella syndrome (CRS). According to the WHO recommendation, the Ministry of Health plans to introduce the rubella vaccine into routine immunization with the second dose of measles-containing vaccine (MCV 2) as a measles and rubella combined vaccine (MR) targeting women aged 15-35 (2013) and infants 18 months old (2014) [15].

(2) The status of controlling measles and rubella

Vietnam introduced a second dose for measles vaccination in 2006 in accordance with the WHO/WPRO commitment to achieve measles elimination in 2012. It has maintained a high coverage of the second dose as shown in Table 4-3. After the cyclical outbreaks between 2005 and 2009, the schedule of the second dose of measles vaccine for children changed from 6-year-olds to 18 month olds. Further, it is said that supplementary immunization activities (SIAs) conducted in 2010 contributed to stopping 2009-2010 measles outbreak [15].

Table 4-3 Measles Vaccination Coverage

	2005	2006	2007	2008	2009	2010	2011
First dose (%)	99	93	83	92	97	98	96
Second dose (%)			18	97	96	98	93

Source: WHO Immunization Profile-Viet Nam [14]

As stated in 4.1.2, promoting domestic production of the measles vaccine in Vietnam was a significant step for the stability of the future vaccine procurement. The Japan-supported Center for Research and Production of Vaccines and Biologicals (POLYVAC) is the only manufacturer of measles vaccines in Vietnam, and the proportion of measles vaccines that POLYVAC produced in the total measles vaccine procurement has been increasing (Table 4-4). Measles vaccines for second dose and measles vaccination campaigns are currently imported, with support from GAVI, UNICEF and WHO since 2007. However, it is expected that the amount of doses ordered from MOH for the vaccines produced by POLYVAC will be increasing after GAVI's support ends in 2013.

Table 4-4 Proportion of the Amount of Doses Ordered for the Vaccines Produced by POLYVAC in the Total Measles Vaccine Procurement

	2009	2010	2011
Amount of doses of POLYVAC-made vaccines purchased by MOH	1.3 million	2 million	3.2 million
Amount of doses of imported vaccines supported by GAVI	1.74 million	1.58 million	1.7 million
Amount of doses of imported vaccines supported by UNICEF/WHO	0	8.1 million*	0
Amount of doses for total vaccine procurement	3.04 million	11.68 million	4.9 million
Amount of doses of POLYVAC-made vaccines in the total vaccine procurement (%)	43%	Regular vaccination only: 56% Regular + campaign: 17%	65%

*campaigns targeting children aged 1-5

Source: Post evaluation report for "The Project for the Construction of the Facilities for Measles Vaccine Production" [37]

(3) The Challenges in Controlling Measles and Rubella

- It is necessary to conduct more extensive epidemiological investigations with contact identification.
- The domestic production of measles vaccines has just started in Vietnam. POLYVAC needs to make

continuous efforts as a manufacturer by securing GMP in the production, reducing the vaccine prices and strengthening vaccine production capacity. It is also expected that MOH will provide financial support to POLYVAC by increasing the vaccine purchase cost and allocating the budget for procurement of necessary equipment and materials for vaccine production.

- For the introduction of MR vaccine as the second dose measles vaccine, it is required to establish the system for vaccine production such as improving demand forecast and technology for domestic production, and allocating budget.

4.2.2 HIV/AIDS Control

(1) National policies and visions

There is strong government commitment towards HIV/AIDS control and there are a number of HIV/AIDS related laws and strategies including:

- The Law on HIV Prevention and Control (2006)
This law provides strong protection for the rights of people living with HIV/AIDS and ensures control measures on the prohibition of stigma and discrimination relating to HIV/AIDS. This includes voluntary testing and counseling, access to relevant information and health care, and free participation of those affected by HIV/AIDS.
- The National Strategy on HIV/AIDS Prevention and Control in Vietnam for 2004-2010 with a Vision to 2020

The strategy provides comprehensive HIV/AIDS control measures from prevention to treatment. It states that voluntary counseling and testing services are to be expanded to all provinces and 50% of districts, and 70% of those needing antiretroviral therapy should have access by 2010. Vietnam has also finalized its new *National Strategy on HIV/AIDS Prevention and Control to 2020 with a vision to 2030*. The targets of the new national strategy reflect those of the *Political Declaration on HIV/AIDS* signed at the UN General Assembly High-Level Meeting on AIDS conducted in June 2011. It illustrated Vietnam's further commitment to the vision of zero new infections, zero discrimination and zero AIDS-related deaths [38].

(2) Implementation system for HIV/AIDS control

HIV/AIDS control requires not only care and treatment to be implemented mainly under Ministry of Health, but also a comprehensive and multi-sectoral approach in which preventive education is taken under Ministry of Education and Training, a series of control measures in the transportation sector for high risk groups including long-distance truck drivers under Ministry of Transport, and drug control and efforts against child and women trafficking under Ministry of Justice. The National Committee for HIV/AIDS, Drugs and Prostitution Prevention and Control was established, headed by the Deputy Prime Minister. This committee is also set up at the provincial, district and commune levels. In health sector, Vietnam Administration for HIV/AIDS Control (VAAC) was established in 2005 and is the focal agency under the Ministry of Health responsible for controlling and coordinating all HIV/AIDS activities.

(3) The status of HIV/AIDS Control

Table 4-5 shows the status of HIV/AIDS service provision. Further efforts are required in the prevention of mother to child transmission (PMTCT)²⁴ and in service provision to the risk groups in order to achieve universal coverage.

Table 4-5 Status of HIV/AIDS Service Provision

		(%)
All HIV Positive Adults (2009)	Percentage of adults with advanced HIV infection receiving antiretroviral therapy	53.7%
PMTCT (2008)	Number of health facilities that integrate antenatal care services with HIV testing and providing anti-retroviral drugs (ARV)	1% of total health centers (N=180)
	Percentage of pregnant women who have received an HIV test in the past 12 months and know their results	11% (N=249,278)
	Percentage of HIV-positive pregnant women who receive antiretroviral therapy	33%
	Percentage of children born to HIV-positive mothers who received ARV	85%
Risk Group (2009)	Percentage of condom use at last sex	FSWs: 77.7% MSM: 66.5% Male IDUs: 51.9%
	Percentage of most-at-risk populations using HIV prevention program	FSWs: 47.3% MSM: 24% Male IDUs: 15.4%

Source: PMTCT: VAAC. Vietnam HIV and AIDS Country Profile.2009 [39]

(4) The Challenges in HIV/AIDS Control

As stated earlier, the coverage of HIV/AIDS prevention, treatment and care services is still limited. The insufficient coverage is partly due to the limited integration of HIV/AIDS treatment and care into other health programmes, such as TB control and antenatal care [38]. In addition, it is important to strengthen the measures for adolescents in Vietnam given the high population mobility. The key is to identify vulnerable adolescents and provide them with knowledge, skills and services for HIV prevention before they become involved in high-risk behavior. WHO estimates that 80% of infections are unreported due to social stigma and discrimination [11]. It is important to create an enabling environment for the early detection of HIV, however, lack of personnel and health facilities is serious in rural and remote areas [38].

4.2.3 Tuberculosis Control

(1) National policies and visions

The Government of Vietnam has recognized the impact of tuberculosis (TB) on development and poverty reduction, and has included TB control in the *Poverty Reduction and Growth Strategy*. Since the government declared TB a national priority in 1995, it has expanded the WHO-recommended DOTS Strategy nationwide [19]. The *Mid-Term Development Plan 2007-2011* of the National Tuberculosis Programme includes

²⁴ There are three ways that mother to child transmission of HIV occurs: in utero; during labour and delivery; breast milk. There is a 15% to 45% chance that a baby can be infected with HIV, but it could be reduced to about 2% if appropriate measures are taken. The ways of PMTCT include HIV testing during pregnancy, maternal ARV therapy during pregnancy in order to prevent the transmission in utero and ARV therapy for babies.

collaboration between TB control and HIV/AIDS control, Public-Private Partnership, DOTS model and its guideline, DOTS Plus²⁵, strengthening surveillance and human resource development.

(2) Implementation system for Tuberculosis control

Measures to reduce TB have been undertaken by the National Tuberculosis Control Programme (NTP), Ministry of Health. The Vietnam Stop TB Partnership (VSTP), which governmental institutions and development partners constitute, was established in 2010. The main purposes of VSTP are to support NTP and to achieve more efficient and effective TB control.

(3) The status of Tuberculosis control

As stated in 3.3.2, Vietnam has maintained a treatment success rate of over 90%, which exceeds the target of 85% according to WHO recommendations under the DOTS strategy. However, the case detection rate has been unchanged at less than 60% (Figure 3-6) and has not reached the WHO target of 70%.

(4) The Challenges in Tuberculosis control

WHO addresses the major challenges in TB control in Vietnam including multi-drug resistant (MDR-TB), extensively drug-resistant TB (XDR-TB), HIV-associated TB and weak health systems [19]. WHO pointed out that more needs to be done in order to increase the case detection rate among risk groups including smokers, diabetics, people living with HIV/AIDS, prisoners, slums dwellers and patients seeking care in the private sector²⁶ [19].

4.2.4 Emerging Infectious Diseases Control

WHO revised the International Health Regulations (IHR) in 2005 in response to the series of outbreaks of emerging infectious diseases such as severe acute respiratory syndrome (SARS) and avian influenza (H5N1). The revised IHR includes responding to all public health emergencies of international concern (PHEIC)²⁷, establishing a National IHR Focal Point for communication to and from WHO, meeting core capacities for disease surveillance and response, and strengthening international response coordination to contain disease.

In Vietnam, the National Institute of Hygiene and Epidemiology (NIHE) has strengthened its capacity with support from MOH and development partners including Japan²⁸. This support enabled NIHE to make early diagnosis and confirmation without sending pathogens to overseas WHO laboratories. This resulted in receiving the diagnostic result in a shorter period. According to the statement of Japan-Mekong Foreign Ministers' Meeting held in January 2008, NIHE is expected to play a role as a core research institute to tackle infectious diseases in the Mekong Region. NIHE is also expected to develop laboratory network in the country

²⁵ DOTS Plus refers to a DOTS program that adds components for MDR TB diagnosis, management and treatment.

²⁶ The risk factors for TB infection include smoking, diabetes, HIV infection, population density and poor nutrition.

²⁷ Before the revision of IHR, PHEIC referred to yellow fever, cholera and pest.

²⁸ The Government of Japan provided a Grant Aid Project "the project for improvement of safety laboratory for National Institute of Hygiene and Epidemiology" and established Biosafety Level 3 laboratories in the NIHE High-tech Center (it was completed in 2008). Japan also supported the Technical Cooperation Project "the project for capacity development for National Institute of Hygiene and Epidemiology to control emerging and re-emerging infectious diseases (2006.3-2010.10)" and the NIHE'S capacity to examine highly hazardous transmissible pathogens and to safely manage and operate those BSL-3 laboratories was strengthened.

and to function as a core of information sharing on biosafety among neighboring countries such as Laos, Cambodia and Myanmar²⁹.

4.3 Nutrition Improvement

(1) National policies and visions

The National Nutrition Strategy for 2001-2010 focused on the improvement of the nutrition status of the general population, particularly that of mothers and children under 5. Thanks to the efforts and comprehensive approach under the strategy, the nutrition status of children has significantly improved; however, there is a regional gap in the level of the improvement. The rate of stunting remains high as well. The new National Nutrition Strategy for 2011-2020, with a vision toward 2030 has the general objectives “the diet of Vietnamese people will be improved in terms of quantity, balanced in quality, hygienic and safe” and would try to tackle the following issues [40]:

- High rate of child malnutrition with significant regional disparity in stunting
- Micronutrient deficiencies in mothers and children (such as iron and vitamin A)
- Double burden of nutrition (the high rate of malnutrition and the increased prevalence of overweight, obesity and nutrition-related chronic diseases)
- Poor nutrition education and practices
- Insufficient implementation network for nutrition activities

(2) The status of nutrition improvement

The rate of vitamin A supplementation coverage among 6-59 month olds was 95% in 2010 [41]. Vitamin A has been distributed with deworming for children in the 18 provinces where malnutrition is most severe, which contributed to reducing worm infection and anemia [11]. In addition, more than 60% of mothers have received vitamin A supplementation within one month of delivery (2001-2010) [40]. Iron deficiency anemia is also one of the serious micronutrient deficiency problems. The prevalence rate of iron deficiency anemia was 38% among pregnant women and 34% among children under 5 in 2008 [11].

(3) The challenges in nutrition improvement

The major challenges in nutrition improvement include lack of nutrition staff, low attention to nutrition among local authorities and community, limited knowledge of mothers and families especially in rural/remote areas and ethnic groups, the regional disparity in prevalence of under-nutrition (child under-nutrition prevalence is very high in Northern Midland and Mountain Areas, Central Highlands and North Central and Central Coastal areas compared to the national average) [40].

²⁹The Technical Cooperation Project “Capacity Development for Laboratory Network of Biosafety and Examination of Highly Hazardous Infectious Pathogen” is under implementation. In order to enhance research collaboration across borders, Japan’s Ministry of Education, Culture, Sports, Science and Technology launched “Japan Initiative for Global Research Network on Infectious Diseases (the second phase of “Program of Founding Research Centers for Emerging and Reemerging Infectious Diseases).”

4.4 Noncommunicable Disease Control

(1) National policies and visions

As stated earlier, the incidence of non-communicable diseases has increased due to the improvements in life expectancy and the changing lifestyles brought about by economic growth. The prevention and control of non-communicable diseases including cardiovascular disease, diabetes and cancer are addressed in the *Strategy for people's Health Care and Protection 2001-2010*. The Western diet with high intake of meat and fat, which doubled from 1990 to 2000, is associated with increasing NCDs [42]. The Government of Vietnam prepared the *Preliminary National Plan for Diabetes 2006-2010* and sets to ensure that 100% of people who have diabetes are diagnosed and are able to self-manage their concern. The plan's proposed areas of action include:

- Strengthening diabetes prevention
- Developing education and advocacy
- Promoting early detection and diagnosis
- Establishing a monitoring and controlling system
- Providing care and rehabilitation
- Improving and expanding international cooperation

Vietnam is facing a growing challenge by the double-burden of nutrition, with high prevalence of under-nutrition combined with rising rates of obesity and related chronic diseases (see Section 3.4). The *National Nutrition Strategy for 2011-2020*, with a vision toward 2030 has prioritized the objective of effectively controlling overweight and obesity and risk factors of nutrition related non-communicable chronic diseases in adults. The indicators to be monitored are as follows:

- The prevalence of overweight and obesity in adults will be controlled to a rate of less than 8% by 2010 and will increase to no more than 12% by 2020.
- The proportion of adults with elevated serum cholesterol (over 5.2 mmol/L) will be less than 28% in 2015 and will remain relatively controlled with less than 30% prevalence in 2020.

(2) The challenges in non-communicable diseases control

With the increase of NCD, there has been a growing demand for high level medical services. Specialists and medical staff with high levels of knowledge and skills are assigned to top referral health facilities with the necessary equipment. At the secondary level of health facilities in southern part of Vietnam, most of the provincial hospitals and some district hospitals are equipped with CT scanners and are able to deal with brain injuries. Further, the steady introduction of x-ray equipment, endoscopy and hemodialysis apparatus and dialyzers has made it possible to deal with patients with digestive diseases and kidney diseases.

As stated earlier, the community health system has been improved [43], but the improvement in rural and remote areas has not been enough. Many patients directly visit top referral health facilities looking for better medical services. In Vietnam, patients are able to receive medical services at upper level health facilities under the referral system. On the other hand, in rural and remote areas, many patients tend to be unwilling to go to upper level health facilities even if referral is necessary due to transportation cost and food expenses required to

make this visit. Accordingly, it is important to improve the community health system including primary health care services in providing necessary medical services.

After the start of the JICA’s technical cooperation project³⁰ in Hoa Binh Province, Northern Vietnam, which aimed to improve the management capacity of Direction of Office for Healthcare Activities (DOHA) for health system improvement, the number of patients referred from Hoa Binh General Hospital to Bach Mai Hospital increased initially but has shown a decreasing trend in recent years as shown in Table 4-6. The main reason for this was pointed out by Hoa Binh General Hospital, that the capacity of the hospital was strengthened through technical transfer from Bach Mai Hospital, which indicated the improvement of the community health system of the Province [44].

Table 4-6 Number of Patients Referred from Hoa Binh General Hospital to Bach Mai Hospital

2005	2006	2007	2008	2009	2010
NA	NA	1,346	1,403	1,380	883

Source : Ex-post evaluation report on “The Bach Mai Hospital Project for Functional Enhancement” [44]

As for an emergency medical system, the “115 emergency system” was introduced mainly in major cities such as Hanoi³¹ and patient transport service is available from their home or the spot of accident to hospitals. The emergency medical system has been introduced at each level of health facilities with the announcement of regulations related to emergency medical system in 2008 [45].

In order to respond to the increased number of traffic accidents, the Government of Vietnam introduced new legislation that mandated all motorcycle riders and passengers wear a helmet. According to the results from an analysis of hospital trauma in motorcyclists, the risk of road traffic head injuries was reduced by 16% in the first three months of the introduction of the mandatory helmet law [46]. In June 2009, the mandatory helmet law was applied to accompanying children.

Lack of information and lack of patient knowledge about NCDs are also obstacles in controlling them. The main pillars of the preliminary *National Plan for Diabetes 2006-2010* include prevention and education; there is a lack of knowledge among patients about diabetes. According to a survey conducted by MOH targeting about 9,000 people nationwide, 78.8% of the respondents did not know about the risk factors causing diabetes and 76.5% did not know about prevention methods of diabetes [42]. Vietnam Association of Diabetes Educators (VADE)³² and diabetes clubs³³ have provided information on diabetes and have promoted diabetes education/advocacy. In addition, MOH and relevant institutes have provided information about diabetes through their websites and publications, and have conducted counseling and seminars.

³⁰ Through JICA’s technical cooperation “The Project for Strengthening Health Service Provision in Hoa Binh Province (2004.12-2009.12)”, health system in Hoa Binh Province was strengthened through the establishment of DOHA and patient referral system in collaboration with Bach Mai Hospital.

³¹ It provides free emergency aid service and people can ask for an ambulance by dialing 115.

³² VADE conduct diabetes advocacy and carries out activities to increase knowledge and skills targeting all those interested in diabetes including doctors and nurses.

³³ Diabetes clubs were established for the purpose of providing support and education to patients with diabetes.

Chapter 5 Health System

5.1 Human Resources for Health (HRH)

5.1.1 Current Situation of HRH

Vietnam's economic growth, which was accompanied by growing demand for quality health service, generated a need for securing human resources for health and strengthening their capacity. The target of the master plan on the development of Vietnam's human resources during 2011-2020 is to have 54 staff per 10,000 population by 2020 [47]; there were 34.4 staff per 10,000 as of 2008. Table 5-1 shows the number of HRH by occupation.

Table 5-1 Human Resources by Occupation (2007-2010)

	2007	2008	2009	2010
Number of doctor per 10,000 inhabitant	6.5	6.7	7.1	7.1
Doctor (thousand)	54.8	57.3	60.8	61.4
Physician (thousand)	48.8	49.8	51.8	52.2
Nurse (thousand)	60.3	65.1	71.5	82.3
Midwife (thousand)	20.8	23.0	25.0	26.8
Pharmacists of high degree (thousand)	5.7	5.8	5.7	5.6
Pharmacists of middle degree (thousand)	12.4	13.9	15.9	17.9
Assistant pharmacists (thousand)	8.5	8.6	8.1	7.2

Source: Health Statistics Yearbook 2010 [48]

The number of HRH has not reached the target yet, but it is above the WHO recommendation of 2.5 health workers per 1,000 population. However, the workforce is concentrated in urban areas with much worse shortages in rural and remote areas. Table 5-2 indicates the proportion of HRH that are assigned to provincial departments of health by region. Table 5-2 does not accurately reflect the numbers in the Red River Delta and South East Regions as it shows the numbers employed in the public sector. It does not include the numbers in central-level hospitals such as in Hanoi and Ho Chi Minh City. It represents a relatively small proportion of doctors and pharmacists with higher education in the Northern Midlands and mountain areas and Central Highlands that are less accessible and have higher proportions of the poor. In addition, there is a serious shortage of HRH in preventive medicine [33]. There has also been an increasing number of qualified staff working in private sector, which offers higher salaries and a better working environment. Vietnam has not suffered from a serious "brain drain" problem due to barriers in language and qualification. However, it is necessary to pay attention to the latest movement as the Japan-Vietnam economic partnership agreement (EPA) took effect in October 2009 and Japan permitted the Vietnamese nurse and caregiver candidates to work in Japan.

Table 5-2 Proportion of Human Resources for Health Under Provincial Department of Health

	Doctor	Physician	Nurse	Midwife	Pharmacist of high degree	Pharmacist of middle degree	Assistant pharmacist
Red River Delta	23.1%	18.2%	21.6%	17.4%	28.4%	15.8%	36.4%
Northern midlands and mountain areas	15.7%	22.3%	15.7%	15.9%	13.5%	14.4%	12.4%
North Central and Central Coastal areas	20.1%	22.9%	20.2%	23.8%	13.9%	16.4%	17.6%
Central Highlands	5.4%	5.0%	6.3%	6.9%	2.9%	5.2%	3.3%
South East	18.2%	9.4%	21.2%	16.4%	15.3%	13.4%	13.4%
Mekong Delta	17.6%	22.2%	15.0%	19.5%	26.1%	34.9%	16.9%
Whole country	100% (N=49,033)	100% (N=50,588)	100% (N=68,527)	100% (N=25,522)	100% (N=3,619)	100% (N=16,602)	100% (N=5,325)

Source: Health Statistics Yearbook 2010 [48]

5.1.2 Development of HRH

In Vietnam, there are 21 public medical-pharmaceutical faculties/schools and 3 private medical faculties/school. There are secondary medical schools or colleges in almost all provinces [4].

Becoming a doctor requires 6 years of medical school education (the first 2 years focus on basic education followed by 4 years in a particular specialty area), and 5 years to become a dentist or a pharmacist. There are courses in secondary medical schools or colleges for nursing and midwifery. A nursing university was established in 1985 to provide a bachelor's degree to meet the rising demand for advanced and complicated medical care. Colleges accept nurses, who are graduates of secondary schools, as transfer students and medical universities accept college graduate nurses as transfer students in order to upgrade the skills of working nurses [49].

The qualification, scope and regulation of work of health workforce is defined based on Decision No 12/2001/QD-BGD&DT issued by Ministry of Education and Training in 2001. There is no National Certified Examination for students of medical institutes in Vietnam; they are licensed health professionals when they pass a graduation examination at each institute. Once they gain a qualification, they won't lose it unless they breach their duties.

MOH issued Decision on Direction of Office for Healthcare Activities (DOHA) in 1998 making upper level health facilities responsible for giving technical guidance to lower level health facilities. After that, three national general hospitals including Bach Mai Hospital in the North, Hue Central Hospital in the Central and Cho Ray Hospital in the South have functioned as teaching hospitals for provincial hospitals in each region, and likewise provincial hospitals have been responsible for providing technical support to district hospitals in each province. Priority in teaching has been given to pediatrics, obstetrics/gynecology, internal medicine and surgery. Teaching includes emergency medicine, ultrasonic diagnosis and nursing practice for internal medicine, which have contributed to expanding community medical services. In addition, seminars and training courses have been provided by doctors associations and nurses associations [50].

5.1.3 Priority Issues in Human Resource Development

There is an urgent need to strengthen the capacity of human resources in order to provide the advanced medical care. According to *Joint Annual Health Review 2010*, priority issues in improving the capacity of human resource include accreditation of training quality (e.g. assessment of training method, national guideline on standards of professional competency), assessment of job performance and creation of incentives [33].

5.2 Health Financing

5.2.1 Overview

Table 5-3 shows health financing indicators for Vietnam. Total health expenditure has been increasing in the past few years with an average annual growth rate of 9.8% from 1998 to 2008. This is over 7.2% of the average annual growth rate of the Gross Domestic Product (GDP) [33]. Vietnam's total expenditure on health as a percentage of GDP is higher than those of other neighboring countries with higher GDP per capita, and it is almost the same level as that of Korea³⁴. Public health expenditure on health as percentage of total health expenditure was 37.8% in 2010, which increased by around 12% compared with 2005. With the increase of public health expenditure, out-of-pocket spending's share has decreased from 66.4% in 2005 to 57.7% in 2010 (Table 5-3). However, the share of out-of-pocket health expenditure remains high to achieve universal health care coverage³⁵. Vietnam is trying to raise the proportion of public health expenditure to more than 50% [4].

Table 5-3 Health Financing Indicators

	2000	2005	2010
Health expenditure, total (% of GDP)	5.4	6.0	6.8
Health expenditure, public (% of total health expenditure)	30.0	25.9	37.8
Health expenditure, private (% of total health expenditure)	69.9		61.3 (2009)
Out-of-pocket health expenditure (% of total health expenditure)	64.1	66.4	57.7
Out-of-pocket health expenditure (% of private expenditure on health)	91.7	89.5	92.7
Health expenditure, public (% of government expenditure)	6.6	5.0	7.8
External resources for health (% of total expenditure on health)	2.5	2.3	3.4
Social security expenditure on health (% of general government expenditure on health)*			31.4
Health expenditure per capita (US\$)	21.5	37.8	82.9

Source: Health Nutrition and Population Statistics [9]*Global Health Observatory Repository [51]

The Government of Vietnam showed its commitment in the five-year health sector development plan (2011-2015) to give priority to primary health in mountainous, remote and isolated areas and preventive

³⁴ Total expenditure on health as a percentage of GDP was 2.6% in Indonesia, 3.9% in Thailand, 3.6% in Philippines, 5.1% in China, 4.4% in Malaysia and 6.9% in Korea in 2010.

³⁵ According to WHO, universal care coverage is difficult to attain if out-of-pocket health expenditure is higher than 30% of total health expenditure.

medicine. As for financing, it committed to give priority for allocation of at least 30% of its total budget for preventive medicine and primary health in those areas in accordance with the plan [4].

5.2.2 Health Insurance and Out-of-Pocket Payment

There are two kinds of health insurance: compulsory and voluntary. Table 5-4 shows the target population for each. For civil servants, employees and armed forces personnel, the contribution rate is 4.5% of income (employers: 3%, employees: 1.5%). For the social security beneficiaries, the contribution rate is 4.5% of monthly benefits, while 3% of the minimum wage in case of School Health Insurance (SHI: a kind of voluntary health insurance scheme for school children). For other groups, the contribution rate is 4.5% of the minimum wage [52]. The poor and children under 6 are also included in the compulsory health insurance and they are entitled to primary health care and free medical examination and treatment at public medical establishments.

The benefit package of health insurance includes:

- diagnosis, treatment, rehabilitation, prenatal check-up, delivery
- early diagnosis for diseases specified by MOH, diagnosis of diseases which require detailed examination
- medicine, medical supplies, advanced service [52]

Table 5-4 Target Population of Health Insurance

	Compulsory	Voluntary
Target Population	Civil servants Employees in all enterprises Armed force personnel Social security beneficiaries Relatives of armed force personnel Veterans Students and school children Children under 6 The poor	Population that are not covered by compulsory scheme (e.g. farmers)

Source : ASEAN Social Security Association [52]

Vietnam is striving to achieve universal health insurance, and set a goal to ensure that at least 80% of Vietnamese people are covered by health insurance by 2015 [4]. The estimated coverage was around 60% in 2010 [33], and further effort is required to achieve the goal.

Payment for health service has been undertaken through the fee-for-service system. With support from development partners, MOH is making efforts to develop new provider payment mechanism including capitation and case mix payment³⁶. The five-year health sector development plan (2011-2015) also mentioned the possibility of paying health care costs via Diagnostic Related Groups (DRG) methods.

As for the measures for the poor, there are health care funds available, and it is expected to increase their access to health services. Priority is also given to children under 6 to ensure that they receive necessary

³⁶ Case mix payment categorizes patient episodes into usable groups so the episodes within any case mix are clinically similar and use similar health care resources.

health services. In addition, activities related to immunization services and the control of vitamin A and iodine deficiencies are supported in the budget for preventive medicine.

5.2.3 Challenges in Health Financing

- In Vietnam, according to the State Budget Law, it is the local authorities' responsibility to manage the local state budget on health. Accordingly, in some localities where priority is given to other sectors, it is difficult to ensure that the adequate budget for health is allocated. [33].
- When allocating the budget to health facilities, evidence-based practice should be taken based on the performance or quality of services provided at each health facility.
- It is required to increase the health insurance coverage in order to achieve the desired universal coverage. In particular, the coverage of employees at enterprises remained 64% as of 2008; there is room for further improvement. In addition, further increases in the national budget for health insurance need to be made for the safe and sustainable management of health insurance.

5.3 Health Information Management System

The Health Statistics Office, MOH, is the agency responsible for health statistics and information systems under the supervision of the Planning and Finance Department. In addition, each department of MOH manages information related to the areas of responsibility. Vietnam's health sector has 127 health statistics indicators and there are manuals with definitions and explanations of data collection methods for each indicator. Patient records are kept in hospitals and the Ministry of Justice keeps statistics on the issuance of birth and death certificates as part of the civil registration system [33]. Information technology (IT) systems have been introduced in hospitals including patient records and financial management. However, the introduction has been limited to some hospitals in big cities³⁷. The reasons behind the delay include the lack of investment needed to introduce IT systems and the lack of the institutional capacity (e.g. staff, management) to ensure its safe management [33].

MOH publishes the *Health Statistics Yearbook* every year in order to serve planning and policy-making in the health sector. The data in the *Health Statistics Yearbook* is disaggregated by province, region and year. Other surveys are also conducted regularly are:

- Population Census (every 10 years)
- Survey of Population Change and Family Planning (every year)
- Living Standards Measurements Survey (VHLSS) (every 2 years)
- Demographic and Health survey (DHS), Multiple Indicator Cluster Survey (MICS), Survey
- Assessment of Vietnamese Youth (SAVY) (every few years)

In addition, the report of the *Joint Annual Health Review* has been published by MOH and major development partners since 2007, and is also considered an important publication in policy-making and planning strategies.

³⁷ MOH had a target to introduce electronic medical record system in all 36 central hospitals by 2010, however, currently the proportion of hospitals which use the software MOH recommended remains around 30%.

Data management and storage are implemented at all levels (central, provincial, district, commune), but are mainly archived in paper form. Telecommunication has been introduced gradually for the quality and efficient data management, and some software for information processing have been developed, which contributes to reducing the burden of staff in data management³⁸. Some examples include software for managing data related to leprosy, HIV/AIDS, TB accidents and injuries [33].

Despite much of the progress made, there are still challenges in the health information system:

- The quality of collected data is not sufficient.
- Practice of analysis and information-sharing based on collected data is not done actively. Accordingly, data is not fully utilized for planning, supervision and policy-making.
- There is no policy, orientation and development plan for health information system [4].

As for the third point, although it is mentioned to develop a master plan for a health information system in the five year health sector development plan (2011-2015), there is no guiding principle for this system's development, which leads to lack of understanding among stakeholders on the importance of data collection and their correct use.

5.4 Health Facilities/Medical Equipment/Drug Supply System

5.4.1 Health Facilities

In Vietnam, there are three national general hospitals located in the North, the Central and the South³⁹. In addition, there are medical research institutes and medical colleges (Hanoi Medical University). Further, there are provincial hospitals, district hospitals and commune health centers (CHC) at each level. The number of patient beds per 10,000 population was 20.5 (excluded CHC beds) in 2010 [4]. Table 5-5 gives an overview including the number of patient beds, the bed occupancy rate and the average length of stay of inpatients.

Table 5-5 Health Facilities Overview (2009)

	Number of beds		Bed Occupancy Rate (%)	Average length of stay
	Number	%		
Central	19,428	10.7	117.3	10.8
Provincial/municipal	87,636	48.5	105.2	7.8
District	62,455	34.5	103.6	5.5
Branch's hospital	5,994	3.3	97.2	7.6
Private sector	5,347	3	51.3	4
Total	180,680	100	105.3	6.9

Source: Report on examination, treatment, implementation of direction and 1816 project and orientation of activity plan in 2010 [53]

³⁸ A good example is Medisoft, software for hospital statistics.

³⁹ Bach Mai Hospital (North), Hue Central Hospital (Central), Cho Ray Hospital (South)

In general, the bed occupancy rate is relatively higher in provincial hospitals and general hospitals/specialized hospitals at central level that are under the direction of MOH. Patients with serious medical conditions tend to be referred to higher level hospitals in order to receive advanced medical care. Examples are Bach Mai Hospital in the North, Cho Ray Hospital in the North, the National Hospital of Pediatrics and the National Cancer Hospital in Hanoi [53].

5.4.2 Medical Equipment

In Vietnam, there are 48 facilities that manufacture 621 kinds of medical equipment. To ensure the quality of this equipment, MOH developed standards in collaboration with the Center for Quality Standard under the Ministry of Science and Technology [4]. However, it is difficult to say that proper maintenance of medical equipment is practiced. For example, standard audit, warranty and correct maintenance are not given much attention at health facilities, which leads to short timeline and low utilization of equipment. Further, the capacity of staff to maintain equipment is low and procurement of equipment is not based on needs assessment [4].

Medical waste is also a serious problem. There are some health facilities that do not meet the essential condition for medical waste management and most sewage treatment systems fail to meet environment standards; these were constructed long time ago and have since deteriorated.

5.4.3 Medicine Supply System

(1) Overview

To ensure quality medicine supply, the government issues legal documents including the national policy on drugs (1996) and Law on Pharmacy (2005). As for the production, sale, import and export of medicine, blood products and vaccines, it is necessary to obtain permission from Drug Administration of Vietnam. Medicine supply is relatively good and medicines for certain diseases (e.g. TB, HIV/AIDS, schizophrenia, epilepsy) are provided free of charge. Expenditure on medicine purchase has been increasing and average expenditure on medicine per capita was US\$ 17 in 2008 [4].

(2) Medicine Supply System

Vietnam has an essential drug list, of which the latest version was updated in 2005, including 355 types of modern medicines and 84 types of traditional medicines. Procurement of medicines in hospitals is implemented through a bidding process based on the major medicine lists of each hospital. It is believed that it takes too long to procure medicines for lower level health facilities and there is a stock-out for some medicines. In fact, according to the Household Living Standards Survey 2006, commune level health facilities occasionally experience a stock-out for some essential medicines [33].

(3) Approval of the manufacturing of medicine

In order manufacture and sell medicines, it is necessary to follow Good Manufacturing Practice (GMP) which most of the domestic pharmaceutical companies in Vietnam do. [4]. Vietnam also produces major

vaccines⁴⁰; the government includes vaccines in the list of specially supported commodities in the national program aiming to improve productivity and quality [4].

(4) The Challenges in Medicine Supply System

In general, the price of medicines is very high compared to international standards. Further, medicine procurement is undertaken by each health facility, causing variations in price which is difficult to regulate [33]. The principal barrier for the development of generic medicines is the lack of strong policy support. This gives incentives to drug companies to encourage doctors and patients to use imported medicines rather than domestically produced medicines [4]. The high price for these is a big burden for patients with chronic diseases.

Quality control of medicine is also important. Although GMP is applied in Vietnam, there are still many products circulating in the market that do not comply with GMP standards [33].

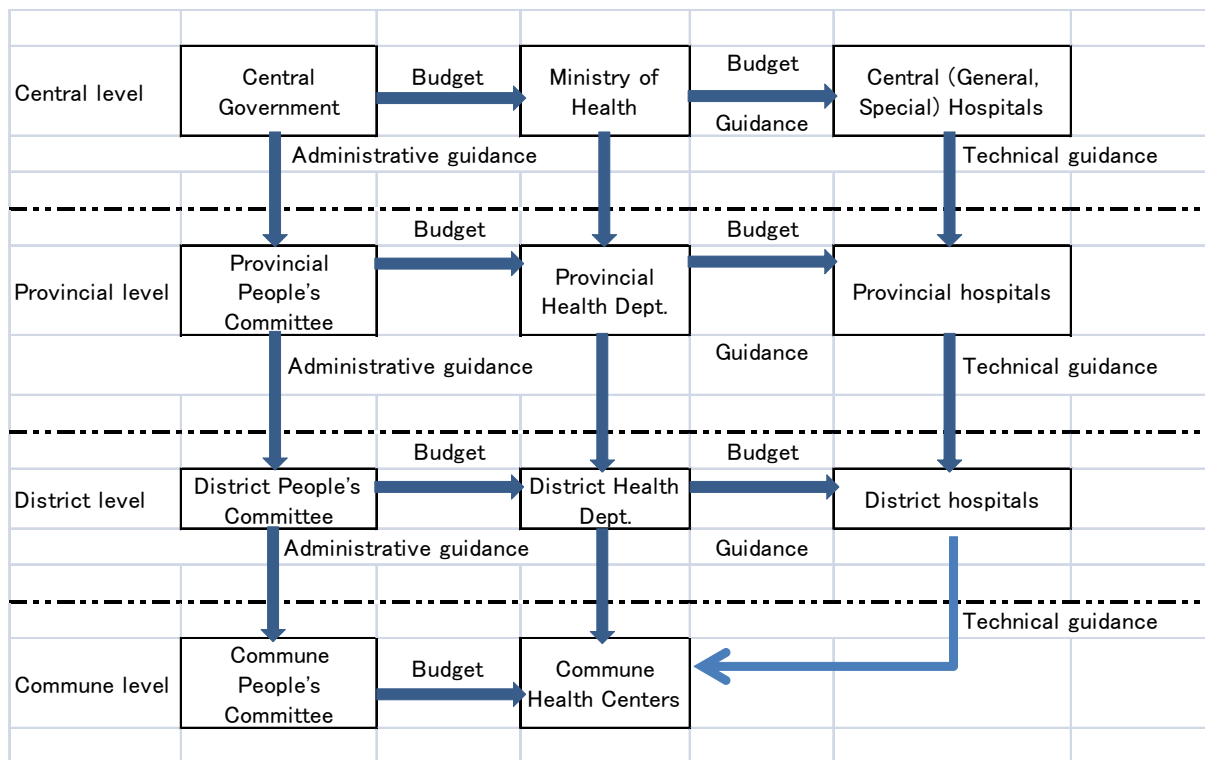
5.5 Governance and Management

5.5.1 Health Administration

Figure 5-1 shows the health administration system in Vietnam. Vietnam has four administrative levels – central, provincial, district and commune. MOH is responsible for the supervision and the provision of necessary guidance to central hospitals at the tertiary level and provincial health departments. Provincial health departments supervise provincial hospitals and district health departments at the provincial level, and district health departments supervise district hospitals and commune health centers at the district level. By Decision on Direction of Office for Healthcare Activities (DOHA), issued by MOH in 1998, upper level health facilities became responsible for providing technical guidance to lower level health facilities [54]. In terms of decentralization, the autonomy and discretionary responsibilities of provincial governments has been strengthened by the establishment of the State Budget Law. The Provincial People's Council and People's Committee determines budget allocation and financial management including the health budget [33].

Guidelines related to the health sector are shown in relevant laws and Decrees/Decisions and Circulars. Major development partners provide support to MOH in developing a number of strategies, plans and guidelines. The progress of each strategy and plan are reviewed and evaluated in the Joint Annual Health Review Meeting.

⁴⁰ Examples include BCG, DPT, Polio, Measles, Japanese encephalitis and typhoid fever.



Source: Report on the preparatory study on “Project for Improvement of the Quality of Human Resources in the Medical Service System” in the Socialist Republic of Vietnam [54]

Figure 5-1 Health Administration System in Vietnam

5.5.2 Referral System

In Vietnam, the health service is categorized into prevention function and hospital function. Commune health centers mainly provide primary health care including prevention, health promotion activities and simple examination. Higher-level health facilities have hospital function and the three national general hospitals⁴¹ are the top referral hospital in each region.

The intended entry point for patients is the commune health center and referrals are then made from here to the next level of care at the district, provincial and central levels. However, more people expect higher quality of medical service and they are more likely to visit upper-level health facilities directly, which results in more patients concentrated in the tertiary hospitals. To solve this issue, MOH is planning to strengthen the capacity of provincial hospitals and upgrade them to regional hospitals functioning as a regional referral hospital. Some of the provincial hospitals have already started to function as a regional hospital [54].

⁴¹ Bach Mai Hospital, Hanoi (in the North), Hue Central Hospital, Hue (in the Central), Cho Ray Hospital, Ho Chi Minh (in the South)

Chapter 6 Development Assistance and Partnership

6.1 Framework of Donor Coordination

There has been active collaboration between the government and development partners in Vietnam. In 2004, the Partnership Group on Aid Effectiveness (PGAE) was created by the government. One of the group's first actions was to adopt the Hanoi Core Statement on Aid Effectiveness, by which Vietnam was the first country to localize the 2005 Paris Declaration on Aid Effectiveness. PGAE was reorganized as the Aid Effectiveness Forum (AEF) in 2010, and JICA was the first co-chair of the AEF from the development partners' side. The AEF participated actively in formulating the ODA strategic framework 2011-2015 in accordance with the Socio-Economic Development Plan 2011-2015. The process for formulating the Poverty Reduction Support Credit (PRSC) is another example of multi-donor policy dialogue mechanism [55].

In the health sector, the Health Partnership Group (HPG) meeting is held jointly by the Vietnamese Government agencies including MOH and development partners every quarter. The Health Sector Working Group has been formed to tackle the major issues in the sector, and the Joint Annual Health Review (JAHR) has been used for situation analysis and determination of priorities. Despite the donor coordination frameworks, actual planning and implementation based on the discussions have not been promptly implemented due to the vertically segmented administrative system in Vietnam [56].

6.2 Activities of Major Development Partners

Vietnam, which has moved into the ranks of middle-income countries, needs to establish the so-called "soft" infrastructure such as policies and systems like other transition countries. In the health sector, important laws have been developed in recent years such as the Law on Health Insurance 2008 and the Law on Examination and Treatment 2009. The support from development partners such as World Health Organization toward establishing health related laws (including the above) have contributed to improving the quality of and access to health services in Vietnam.

6.2.1 United Nations

Vietnam is one of the nine pilot countries embarking on the adoption of One-UN. Through the One-UN initiative, UN agencies deliver support as one entity at the country level to enhance the consolidation of UN programme activities. The aim of this is to make their support more efficient and effective. This initiative helps avoid duplication and increase efficiency of resource utilization. Further, it includes a series of Joint Programmes⁴² which involve several UN organizations and (sub-) national partners and provides a more coordinated and strategic response to cross-cutting themes. Currently, the One Plan 2012-2016 with its 17 participating organizations is operating in Vietnam based on one plan and one budget. Its total budget is estimated at US\$ 480 million including the health sector [57].

⁴² Currently, six Joint Programmes are operating in the areas of integrated nutrition and food security, gender equity, HIV and Avian Influenza.

WHO provides support mainly in health related policy development and technical assistance. It has also conducted training and seminars for hospital management in recent years [56]. In maternal and child health, UNICEF promotes routine antenatal care for pregnant women and provides a combination of interventions to improve the nutritional status of women and children. UNFPA provides supports related to reproductive health. UNICEF and UNFPA mainly focus on the areas which are less likely to receive health services. UNICEF's *The Provincial Child Friendly Programme* is involved in local capacity-building by reflecting actual needs of the community (e.g. dengue fever control, injury prevention) in the health planning through close consultations with local stakeholders.

6.2.2 Other International Agencies and Bilateral Donors

Other development partners also provide extensive support to the health sector. For example, World Bank (WB) and Asian Development Bank (ADB) invested in essential infrastructures for delivering public health service especially at primary and secondary level, and such extensive supports enable almost all provinces to receive any support [40]. WB supports National Targeted Programmes including HIV/AIDs and strengthens the health facilities at the district level. ADB supports poverty reduction programmes such as promoting primary health service especially in rural areas, the capacity building for human resources for health and the development of framework for social security system.

In infectious disease control, the support from the Global Fund to Fight AIDS, Tuberculosis and Malaria (hereinafter referred to as the 'Global Fund') and the President's Emergency Plan for AIDS Relief (hereinafter referred to as the PEPFAR) enabled many patients to receive necessary treatment. Thus, development partners have focused their support on the poor and vulnerable groups, and have strengthened the health system at the primary and the secondary levels as well as policy making. As mentioned earlier, the health sector coordination has been active, and the HPG meeting and the JAHR play an important role in placing more emphasis on the overall programme rather than on specific projects of each partner.

Table 6-1 shows the areas of cooperation of major development partners.

Table 6-1 Areas of Cooperation of Major Development Partners (Except UN)

Donors	Project Title	Target Level	Period	Input Total	Issue Focused				
					MNCH	HIV/AIDs	TB	Malaria	Other/General
ADB	Preventive Health System Support Project	Nationwide	2006-2012	\$27.9M (of which \$10.14M as grant)					X
	Health Human Resources Sector Dev.Program	Central MOH	2009-2013	\$70M (including \$10M grant cofinanced by Gov.of Australia)					X
	Health Care in the South Central Coast Region	8 South Central Coast Provinces	2008-2013	\$60M					X
European Commission	Health Sector Capacity Support Project (SCSP)	18 provinces	2009-2012	\$18.5M					X
GAVI*	Immunization Services Support Pentavalent vaccine		2007-2013	\$1M	X				
			2010-2015	\$71M	X				
GFATM	Round 6 HIV	Community, commodities	2008-2012	\$28.7M		X			
	Round 6 TB	MOH	2008-2012	\$10.6M			X		
	Round 7 Malaria	Vector Control		\$29.9M				X	
Netherlands	National Targeted Programmes (TB control/Human resource dev./safe motherhood initiative)	Central and Provincial	2008-2011	€32.2M	X		X		
	Special Innovate Interventions (HIV/AIDS)	Central and Provincial	2008-2011	€5.5M		X			
DFID	Joint HIV Prevention Project in Vietnam	Central/Provincial/District/Commune	2009-2012	DFID £18M WB: \$17M		X			
US (USAID)**	Avian and Pandemic Influenza HIV/AIDS Environmental Remediation Emerging Pandemic Threats Program & others					X			Emerging infectious disease
US (PEPFAR)***	Health system strengthening and Human resources for Health		2011-2012			X			
WB	HIV/AIDS Prevention Project	National and 18 provinces+2 cities	2005-2011	\$38.5M (IDA fund: \$35M Gov.\$3.5M)		X			
	Mekong Regional Health Support Project	National and Provincial	2006-2012	\$85M(IDA:\$70M, Gov.\$10M, PHRD)					X

Source: WHO Health Partners in Vietnam and the projects they support [58]

*GAVI Alliance. GAVI support for Vietnam [59]

** USAID Vietnam. Program [60]

*** PEPFAR in Vietnam. President's Emergency Plan for AIDS Relief [61]

6.3 Outline of Japanese Cooperation

6.3.1 Japan's Aid Policy to Vietnam and Aid Policy in the Health Sector

According to Japan's Assistance Policy to Vietnam (2009), the priority areas for assistance include

- 1) promotion of economic growth and strengthening of international competitiveness
- 2) improvements of living and social conditions and corrections of disparities
- 3) environmental conservation
- 4) strengthening of governance

The support to the health sector is placed under "improving basic social services", which is one of the development issues of point 2) [62].

6.3.2 Achievement and Current Situation of Japanese Assistance in the Health Sector

Japan has been implementing a wide variety of assistance in the health sector (Table 6-2). Through this support, Japan has knowledge and expertise in policy making and establishing training models. Based on past experience, Japan is carrying out the current cooperation in order to improve the health service and the access to health services targeting the following priority areas [62].

- Policy and institutional improvements and capacity development of human resources that are responsible for the formulation and implementation of policies based on the Ministry of Health and core health facilities at the central level.
- Strengthening the health system at the provincial level, with an emphasis on dissemination and development of good practices
- Improving the facilities and equipment at health facilities primarily at the central and provincial levels.
- As the Japan-Vietnam economic partnership agreement (EPA) took effect and the agreement accompanies a scheme permitting Vietnamese nurse and caregiver candidates to work in Japan under the EPA agreement, cooperation related to dispatching nurses and caregivers is under consideration.

Table 6-2 Japan's Recent Cooperation in the Health Sector

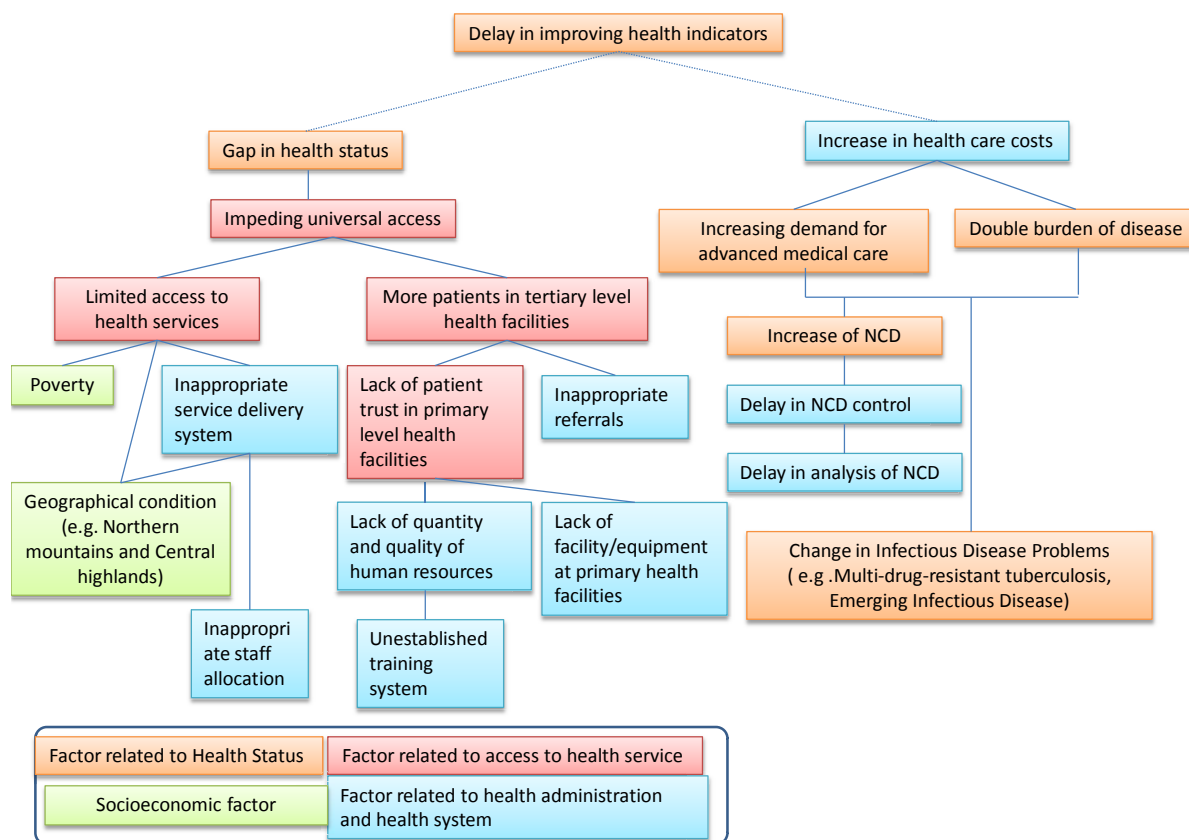
Scheme	Title	Period
Grant Aid	The Project for Improvement of Equipment in the National Hospital for Obstetrics and Gynecology	2010
Loan fund cooperation	Regional and Provincial Hospital Development Project	2006-2011-
	Regional and Provincial Hospital Development Project (II)	2011-
Individual expert	Advisor to Ministry of Health	2007-2009
Technical Cooperation Project	Health System Strengthening	
	Project for Strengthening Health Service Provision in Hoa Binh Province	2004-2009
	Project for Improvement of Medical Service in the Central Region	2005-2010
	Project for Strengthening Medical Rehabilitation Service in the Southern Area of Vietnam	2010-2013
	Infectious Disease Control	
	Project for Capacity Development for National Institute of Hygiene and Epidemiology (NIHE) to Control Emerging and Re-emerging Infectious Diseases in Viet Nam	2006-2009
	Project for Capacity Development for Laboratory Network in Vietnam of Biosafety and Examination of Highly Hazardous Infectious Pathogens	2011-2016
	The Strengthening Capacity for Measles Vaccine Production	2006-2010
	Capacity Building of Human Resources for Health	
	The Bach Mai Hospital Project for Strengthening Training Capacity for Provincial Hospitals	2006-2009
	Project for Improvement of the Quality of Human Resources in the Medical Service System	2010-2015
	Reproductive Health/Maternal and Child Health	
	Capacity Building for Dissemination of Community-based RH Promotion Approach	2006-2009
	Project for Implementing Maternal and Child Health Handbook for Scaling Up Nationwide	2011-2014
Preparatory Survey	Preparatory Survey on Project for Improvement of Medical Waste Water and Solid Treatment System	2010
	Preparatory Survey for the development of Rural Hospital Health (Phase 2)	2010
JOCV	JOCV dispatched Provincial and District Hospitals (Nurse, Midwife, Public Health Nurse, etc.)	

Source : Ministry of Foreign Affairs "ODA Country Data Book" [55] and Country Assistant Strategy [63]

Chapter 7 Priority Health Issues and Recommendations

7.1 Priority Health Issues

Figure 7-1 shows the current situation and background of the challenges in the health sector in Vietnam. The widening of the gap in health status and an increasing financial burden has been caused by the change in the disease pattern. Additionally, the accompanying rising cost of health care delivery leads to lack of investment in prevention and control of non-communicable diseases, which would result in a delay in improving health indicators.



7.1.1 Health Problems in Vietnam

In general terms, trends in health indicators have improved although disparities still exist among different regions and ethnic groups. In particular, areas with large populations of poor such as the Northern mountains and the Central highlands face problems not only for the health service delivery but also for the access to services because of financial burdens.

The changes in disease patterns show an increase in the incidence of non-communicable diseases. This has been caused by Vietnam's economic growth and the increase of lifestyle-related diseases, which result in increasing demand for advanced medical care and the rise of medical costs. In order to respond to these

changes and demands, it is crucial to improve health facilities and to secure human resources in terms of both quality and quantity. On the other hand, the incidence of communicable diseases has shown a downward trend. However, there are still lots of issues to be tackled such as the increasing rate of HIV infection among young people, multi-drug resistant tuberculosis, emerging infectious diseases. Thus Vietnam is facing double burden of communicable and non-communicable diseases.

7.1.2 Causal Analysis (Bottleneck Identification)

Behind the disparity in health, there are problems of inadequate human resources for health and inappropriate allocation of human resources such as the concentration of workforce in urban areas. Further, there is a shortage of facilities and equipment at the primary care level, and inappropriate coordination and referrals between lower and upper level health facilities. This results in the concentration of more patients in tertiary level facilities.

It is an urgent issue to develop the capacity of human resources to meet the needs of advanced and specialized medical care with the increase of non-communicable diseases. In Vietnam, human resource management has not functioned well due to the lack of a master plan and effective implementation of continuing education for health workforce [54]. In infectious disease control, prevention and early detection are very important, but medical check-ups for early detection is not practiced well in Vietnam. Further, a national survey on the status and risk factors of non-communicable diseases has not yet been conducted, and there is not adequate information for controlling non-communicable diseases. Epidemiological surveillance for lifestyle-related diseases has not yet been conducted either; this is required for the primary prevention of the diseases.

Health service prices have been increasing in order to cover the cost of improving health facilities and equipment and having specialized physicians. This has resulted in a negative impact on patients' access to health services.

7.1.3 Measures Taken by the Government and Donors for Tackling the Challenges

The Government of Vietnam has prioritised the reduction of poverty and disparities under the *National Poverty Reduction Strategy* through free medical service for the poor and special support for ethnic minorities. The government also showed a commitment toward social security extension and strengthened the national response to achieve universal access. In accordance with the national priorities in the health sector, development partners have provided support to strengthen the health system through the development of relevant policies and strategies, the establishment of guidelines and manuals, financial support, human resource development, and the improvement of health facilities and equipment. In particular, there are many development partners working in the poorer regions including the Northern mountains and the Central highland areas. As stated earlier, MOH and development partners jointly conduct situation analysis and problem identification through the Health Partnership Group meeting and the Joint Annual Health Review, which enables them to respond to problems quickly and provide effective and efficient support by avoiding duplication of efforts.

7.2 Recommendations

Based on the above-mentioned problems, there are a number of possible areas for further Japanese cooperation with Vietnam as follows:

7.2.1 Continuous Support in the Capacity Building of Human Resource for Health

Japan has contributed to improving health facilities and services at different levels as well as human resource development in Vietnam through different supports in accordance with the national health priorities. For example, the 'Project for Improvement of the Quality of Human Resources in the Medical Service System' is currently implemented to support human resource development based on the past achievements of the cooperation for national hospitals. This cooperation strengthened the function of hospitals as well as hospital staff by improving their training/teaching capacity. The continuous support and development in capacity development of human resources will lead to the improvement of services at health facilities and patients' access to health service, which is also appropriate in terms of ensuring fairness.

(1) Making the best use of the past achievements

In order to scale up the outcomes of past cooperation and bring the impacts to other parts of the country, it is necessary to have political support at the national level in capacity development of health human resources. The above mentioned 'Project for Improvement of the Quality of Human Resources in the Medical Service System' includes the support of policy development in human resource development. The main target group of the project is medical staff at provincial hospitals as well as national hospitals and its activities are implemented in order to strengthen the training and the operation systems based on the past cooperation at 3 core national hospitals including Bach Mai hospital in the North, Hue Central hospital in the Central and Cho Ray Hospital in the South. Looking at the progress of the project, it is worth considering the possibility of further support to share the outcome of the project with medical staff working at lower levels.

(2) Support to human development in rural areas

In Vietnam, there are policies and measures proposed and implemented providing incentives for improving the rural retention of the health workforce. As a potential solution for the workforce shortage, skill mix and continuing education would be effective in improving the efficiency of services provided at each facility even with the limited number of staff. It would be also effective to provide support to policy development related to improving rural retention of the health workforce.

(3) Human development to meet the needs of advanced medical care

In human resource development, it is also an urgent issue to train human resources who can keep up with advanced medical care and treatment. Potential support include strengthening training system (e.g. national certification, standardization) and providing technical support to online education that could be used by rural hospitals.

(4) Support to the Japan-Vietnam economic partnership agreement (EPA)

The Japan-Vietnam economic partnership agreement (EPA) took effect in October 2009 and Japan permitted Vietnamese nurse and caregiver candidates to work in Japan. For the effective and smooth implementation of

the agreement, it will be important to secure work placements for nurses and caregivers after they return from Japan and to give any support to the health facilities which dispatch those workforces to Japan.

7.2.2 Reducing the Disparities in Access to Health Services

Priority of support should be given to the areas which are relatively low in health indicators due to lower access to health services, such as the Northwestern areas. They need comprehensive support such as improving facilities, equipment and services at primary health centres. If the health status in those areas is not improved, it will be difficult to improve national health indicators. To achieve this, it is important to provide comprehensive support by increasing the outreach service provision, involving health volunteers for promoting community participation and organizing/utilizing health committees in health activities.

7.2.3 Support to Noncommunicable Disease Control

Considering the fact that three-quarters of the deaths in Vietnam are by are noncommunicable diseases, it is necessary to take measures to control these as soon as possible. A national survey on the risk factors of NCDs and epidemiological surveillance on lifestyle-related diseases should be conducted. It will be also effective for citizens to undergo a compulsory health check-up. Such activities might be strengthened by an advertising campaign in which mass media is used for the promotion of physical activity and improvement in eating habits that contribute to primary prevention. It will be also effective to introduce preventive education in school health education.

7.2.4 Support to Aging Issues

In response to the rapidly aging population in Vietnam, it is necessary to establish social security systems and services. Japan has already entered the stage of a hyper-aged society, and has expertise in developing relevant policies and strategies. Japan has the experience of supporting Thailand⁴³ which promoted community-based care in dealing with aging and this produced good outcomes. It will be Japan's competitive advantage to give support to Vietnam in aging based on lessons learned and experiences in a neighboring country. In addition, there is a potential opportunity for Vietnamese nurses and caregivers with experience in Japan under the EPA agreement to return to Vietnam with this new skill-set. It is worth considering securing the working places for such people coming back from Japan.

7.2.5 Support to Measles-Rubella (MR) Vaccine

According to the WHO recommendation, MOH plans to introduce the rubella vaccine into routine immunization with the second dose of measles-containing vaccine (MCV 2) as a measles and rubella combined vaccine (MR) in 2014. This should help prevent congenital rubella syndrome (CRS). Japan has already experience in measles vaccine production through the project for 'Strengthening Capacity for Measles Vaccine Production'. It will be the advantage for Japan to provide technical support to MR vaccine production based on the mutual relationship, which was established with Center for Research and Production of Vaccines and Biologicals (POLYVAC), the Vietnamese counterpart of the above mentioned project.

⁴³The Project on the Development of a Community Based Integrated Health Care and Social Welfare Services Model for Older Persons in the Kingdom of Thailand.

ATTACHMENTS

Attachment 1: Major Health Indicators

Attachment 2: References

Attachment 1: Major Health Indicators (Socialist Republic of Viet Nam)

Socialist Republic of Viet Nam			MDGs	Sources	1990	2000	Latest	Latest year	Latest in Region	(Latest year)	Region	
0 General Information	0.1 Demography	0.1.01	Population, total		WDI	66,016,700	77,630,900	86,928,000	2010	1,961,558,757	(2010)	East Asia & Pacific (developing only)
		0.1.02	Population growth (annual %)		WDI	1.9	1.3	1.0	2010	0.7	(2010)	East Asia & Pacific (developing only)
		0.1.03	Life expectancy at birth, total (years)		WDI	65.5	72.0	74.8	2010	72.2	(2010)	East Asia & Pacific (developing only)
		0.1.04	Birth rate, crude (per 1,000 people)		WDI	29.8	17.5	16.7	2010	14.2	(2010)	East Asia & Pacific (developing only)
		0.1.05	Death rate, crude (per 1,000 people)		WDI	7.9	5.4	5.2	2010	7.0	(2010)	East Asia & Pacific (developing only)
		0.1.06	Urban population (% of total)		WDI	20.3	24.3	28.8	2010	46.0	(2010)	East Asia & Pacific (developing only)
	0.2 Economic Development Condition	0.2.01	GNI per capita, Atlas method (current US\$)		WDI	130	390	1160	2010	3,695.8	(2010)	East Asia & Pacific (developing only)
		0.2.02	GNI growth (annual %)		WDI	-2.0	6.7	7.4	2010	10.0	(2010)	East Asia & Pacific (developing only)
		0.2.03	Total enrollment, primary (% net)	2.1	WDI		97.0	98.1	2010	94.4	(2007)	East Asia & Pacific (developing only)
		0.2.04	Ratio of female to male primary enrollment (%)	3.1	WDI		94.7	93.9	2010	101.1	(2009)	East Asia & Pacific (developing only)
		0.2.05	Literacy rate, adult total (% of people ages 15 and above)		WDI		90.2	92.8	2009	93.5	(2009)	East Asia & Pacific (developing only)
		0.2.06	Human Development Index		HDR	0.46	0.69	0.59	2011	0.67	(2011)	East Asia and the Pacific
	0.3 Water and Sanitation	0.3.01	Improved water source (% of population with access)	7.8	HNP Stats	57	77	95	2010	89.9	(2010)	East Asia & Pacific (developing only)
0.3.02		Improved sanitation facilities (% of population with access)	7.9	HNP Stats	37	56	76	2010	65.6	(2010)	East Asia & Pacific (developing only)	
1 Health Status of People	1.1 Mortality and Morbidity	1.1.01	Age-standardized mortality rate by cause (per 100,000 population) - Communicable		GHO			122	2008	74	(2008)	Western Pacific
		1.1.02	Age-standardized mortality rate by cause (per 100,000 population) - Noncommunicable		GHO			607	2008	534	(2008)	Western Pacific
		1.1.03	Age-standardized mortality rate by cause (per 100,000 population) - Injuries		GHO			66	2008	64	(2008)	Western Pacific
		1.1.04	Cause of death, by communicable diseases and maternal, prenatal and nutrition conditions (% of total)		HNP Stats			16.4	2008	13.4	(2008)	East Asia & Pacific (developing only)
		1.1.05	Cause of death, by non-communicable diseases (% of total)		HNP Stats			74.6	2008	76.3	(2008)	East Asia & Pacific (developing only)
		1.1.06	Cause of death, by injury (% of total)		HNP Stats			9.0	2008	10.3	(2008)	East Asia & Pacific (developing only)
		1.1.07	Distribution of years of life lost by broader causes (%) - Communicable		GHO			29	2008	19	(2008)	Western Pacific
		1.1.08	Distribution of years of life lost by broader causes (%) - Noncommunicable		GHO			56	2008	63	(2008)	Western Pacific
		1.1.09	Distribution of years of life lost by broader causes (%) - Injuries		GHO			15	2008	18	(2008)	Western Pacific
	1.2 Maternal and Child Health	1.2.01	Maternal mortality ratio (modeled estimate, per 100,000 live births)	5.1	MDGs	170	91	56	2008	88.7	(2008)	East Asia & Pacific (developing only)
		1.2.02	Adolescent fertility rate (births per 1,000 women ages 15-19)	5.4	MDGs		26.3	24.4	2010	18.8	(2010)	East Asia & Pacific (developing only)
		1.2.03	Mortality rate, under-5 (per 1,000)	4.1	MDGs	51.2	35.0	23.3	2010	24.3	(2010)	East Asia & Pacific (developing only)
		1.2.04	Mortality rate, infant (per 1,000 live births)	4.2	MDGs	36.8	27.0	18.6	2010	19.9	(2010)	East Asia & Pacific (developing only)
		1.2.05	Low-birthweight babies (% of births)		HNP Stats		9	5.3	2009	6.4	(2010)	East Asia & Pacific (developing only)
		1.2.06	Fertility rate, total (birth per woman)		HNP Stats	3.6	2.0	1.8	2010	1.8	(2010)	East Asia & Pacific (developing only)
	1.3 Infectious Diseases	1.3.01	a) Prevalence of HIV, male (% ages 15-24)	6.1	MDGs			0.1	2009			
			b) Prevalence of HIV, female (% ages 15-24)	6.1	MDGs			0.1	2009			
		1.3.02	Notified cases of malaria per 100,000 population	6.6	MDGs Database			55	2008			
		1.3.03	a) Malaria death rate per 100,000 population, all ages	6.6	MDGs Database			0	2008	6	(2009)	South-Eastern Asia
			b) Malaria death rate per 100,000 population, ages 0-4	6.6	MDGs Database			0	2008	18	(2009)	South-Eastern Asia
		1.3.04	Tuberculosis prevalence rate per 100,000 population (mid-point)	6.9	MDGs Database	396	345	334	2010	344	(2009)	South-Eastern Asia
1.3.05		Incidence of tuberculosis (per 100,000 people)	6.9	MDGs	204	205	199	2010	123	(2010)	East Asia & Pacific (developing only)	
1.3.06		Tuberculosis death rate (per 100,000 people)	6.9	MDGs	44	35	34	2010	12	(2010)	East Asia & Pacific (developing only)	
1.3.07		Prevalence of HIV, total (% of population ages 15-49)		HNP Stats	0.1	0.2	0.4	2009	0.2	(2009)	East Asia & Pacific (developing only)	
1.3.08		AIDS estimated deaths (UNAIDS estimates)		HNP Stats	500	4,500	14,000	2009				
1.4 Nutrition	1.4.01	Prevalence of wasting (% of children under 5)		HNP Stats		6.1	9.7	2008				
2 Service Delivery	2.1 Maternal and Child Health	2.1.01	Births attended by skilled health personnel, percentage	5.2	MDGs Database		69.6	87.7	2006	72.0	(2009)	South-Eastern Asia
		2.1.02	Birth by caesarian section		GHO			9.9	2002	24.4	(2011)	Western Pacific
		2.1.03	Contraceptive prevalence (% of women ages 15-49)	5.3	MDGs		74.2	79.5	2008	77.0	(2009)	East Asia & Pacific (developing only)
		2.1.04	Pregnant women receiving prenatal care (%)	5.5	HNP Stats		68.3	90.8	2006	92.2	(2010)	East Asia & Pacific (developing only)
		2.1.05	Pregnant women receiving prenatal care of at least four visits (% of pregnant women)	5.5	HNP Stats		29.3	29.3	2002			
		2.1.06	Unmet need for family planning, total, percentage	5.6	MDGs Database			4.8	2002	10.9	(2008)	South-Eastern Asia
		2.1.07	1-year-old children immunized against: Measles	4.3	Childinfo	88	97	98	2010	95	(2010)	East Asia & Pacific
		2.1.08	1-year-old children immunized against: Tuberculosis		Childinfo	90	98	94	2010	97	(2010)	East Asia & Pacific
		2.1.09	a) 1-year-old children immunized against: DPT (percentage of infants who received their first dose of diphtheria, pertussis and tetanus vaccine)		Childinfo	96	97	93	2010	96	(2010)	East Asia & Pacific
			b) 1-year-old children immunized against: DPT (percentage of infants who received three doses of diphtheria, pertussis and tetanus vaccine)		Childinfo	88	96	93	2010	94	(2010)	East Asia & Pacific
		2.1.10	1-year-old children immunized against: Polio		Childinfo	88	96	94	2010	96	(2010)	East Asia & Pacific
	2.1.11	Percentage of infants who received three doses of hepatitis B vaccine		Childinfo			88	2010	94	(2010)	East Asia & Pacific	
	2.2 Infectious Diseases	2.2.01	Condom use with non regular partner, % adults (15-49), male	6.2	MDGs			72.5	2005			
		2.2.02	Condom use with non regular partner, % adults (15-49), female	6.2	MDGs							

Attachment 1: Major Health Indicators (Socialist Republic of Viet Nam)

Socialist Republic of Viet Nam				MDGs	Sources	1990	2000	Latest	Latest year	Latest in Region	(Latest year)	Region	
2.2	2.2.03	Men 15-24 years old with comprehensive correct knowledge of HIV/AIDS, percentage	6.3	MDGs Database				50.3	2005				
	2.2.04	Women 15-24 years old with comprehensive correct knowledge of HIV/AIDS, percentage	6.3	MDGs Database		25.4	43.6	2006	24	(2005-2010)		South-Eastern Asia	
	2.2.05	Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years	6.4	MDGs Database									
	2.2.06	Use of insecticide-treated bed nets (% of under-5 population)	6.7	HNP Stats		15.8	5.0	2006					
	2.2.07	Children under 5 with fever being treated with anti-malarial drugs, percentage	6.8	MDGs Database	6.5		2.6	2006					
	2.2.08	Tuberculosis treatment success rate under DOTS, percentage	6.10	MDGs Database		92	92	2008	89	(2008)		South-Eastern Asia	
	2.2.09	Antiretroviral therapy coverage (% of people with advanced HIV infection)	6.5	MDGs			34.0	2009					
	2.2.10	People aged 15 years and over who received HIV testing and counselling, estimated number per 1,000 adult population		GHO			22	2010					
	2.2.11	Testing and counselling facilities, estimated number per 100,000 adult population		GHO			1.3	2010					
	2.2.12	Pregnant women tested for HIV, estimated coverage (%)		GHO			52	2010					
	2.2.13	Percentage of HIV-infected pregnant women who received antiretroviral drugs to reduce the risk for mother-to-child transmission (Mid point)	6.5	MDGs Database									
	2.2.14	Tuberculosis case detection rate (all forms)		HNP Stats	37.0	56.0	54.0	2010	76	(2010)		East Asia & Pacific (developing only)	
	2.2.15	Tuberculosis treatment success rate (% of registered cases)	6.10	MDGs		92.0	92.0	2009	92	(2009)		East Asia & Pacific (developing only)	
	2.3 Nutrition	2.3.01	Vitamin A supplementation coverage rate (% of children ages 6-59 months)		HNP Stats			95.4	2010				
		2.3.02	Consumption of iodized salt (% of households)		HNP Stats			93.2	2006	85.7	(2010)		East Asia & Pacific (developing only)
2.4 Quality and Coverage	2.4.01	Estimate of health formal coverage		ILO			23.4		46.7			Countries of high vulnerability	
	2.4.02	Population not covered (%) due to financial resources deficit		ILO			70.2		61.1			Countries of high vulnerability	
	2.4.03	Population not covered (%) due to professional health staff deficit		ILO			69.0		43.2			Countries of high vulnerability	
3 Health System	3.1 Human Resources	3.1.01	Physicians (per 1,000 people)		HNP Stats	0.40		1.2	2008	1.2	(2010)	East Asia & Pacific (developing only)	
		3.1.02	Midwives (per 1,000 people)		HNP Stats			0.2	2002	0.04	(2002)	East Asia & Pacific (developing only)	
		3.1.03	Nurses (per 1,000 people)		HNP Stats			0.6	2001	1	(2001)	East Asia & Pacific (developing only)	
		3.1.04	Dentistry personnel density (per 10,000 population)		GHO					1	(2007)	Western Pacific	
		3.1.05	Density of pharmaceutical personnel (per 10,000 population)		GHO			3.24	2008	4.0	(2007)	Western Pacific	
	3.2 Health Financing	3.2.01	Health expenditure, total (% of GDP)		HNP Stats		5.4	6.8	2010	4.8	(2010)		East Asia & Pacific (developing only)
		3.2.02	Health expenditure, public (% of total health expenditure)		HNP Stats		30.1	37.8	2010	53.4	(2010)		East Asia & Pacific (developing only)
		3.2.03	Health expenditure, private (% of total health expenditure)		HNP Stats		70.0	62.2	2010	46.6	(2010)		East Asia & Pacific (developing only)
		3.2.04	Out-of-pocket health expenditure (% of private expenditure on health)		HNP Stats		91.7	92.7	2010	67.0	(2010)		East Asia & Pacific (developing only)
		3.2.05	Health expenditure, public (% of government expenditure)		HNP Stats		6.6	7.8	2010	9.3	(2004)		East Asia & Pacific (developing only)
		3.2.06	External resources for health (% of total expenditure on health)		HNP Stats		2.5	3.4	2010	0.4	(2010)		East Asia & Pacific (developing only)
		3.2.07	Social security expenditure on health as a percentage of general government expenditure on health		GHO			31.4	2009	68.6	(2009)		Western Pacific
		3.2.08	a) Health expenditure per capita (current US\$)		HNP Stats		21.5	82.9	2010	182.8	(2010)		East Asia & Pacific (developing only)
		b) Per capita total expenditure on health (PPP int. \$)		GHO			213	2009	614	(2009)		Western Pacific	
		Per capita government expenditure on health at average exchange rate (US\$)		GHO			31	2009	361	(2009)		Western Pacific	
3.3 Facilities, Equipments and Supplies	3.3.01	a) Median availability of selected generic medicines (%) - Public		GHO									
		b) Median availability of selected generic medicines (%) - Private		GHO									
	3.3.02	a) Median consumer price ratio of selected generic medicines - Public		GHO									
		b) Median consumer price ratio of selected generic medicines - Private		GHO									
	3.3.03	Hospital beds (per 1,000 population)		HNP Stats	3.8		3.1	2009	3.9	(2009)		East Asia & Pacific (developing only)	

WDI: World Development Indicators & Global Development Finance (<http://databank.worldbank.org/ddp/home.do>) (Accessed 06/2012)

HDR: Human Development Reports (<http://hdr.undp.org/>) (Accessed 06/2012)

HNP Stats: Health Nutrition and Population Statistics (<http://databank.worldbank.org/ddp/home.do>) (Accessed 06/2012)

GF: Global Fund eligibility list for 2012 funding channels, the Global Fund to Fight AIDS, Tuberculosis and Malaria (<http://www.theglobalfund.org/en/application/applying/ecfp/>) (Accessed 06/2012)

GHO: Global Health Observatory Country Statistics (<http://www.who.int/gho/countries/en/>) (Accessed 06/2012)

GHO: Global Health Observatory Repository (<http://apps.who.int/ghodata/>) (Accessed 06/2012)

MDGs: Millennium Development Goals (<http://databank.worldbank.org/ddp/home.do>) (Accessed 06/2012)

MDG database: Millennium Development Goals Indicators (<http://mdgs.un.org/unsd/mdg/>) (Accessed 06/2012). Regional data is available on The Millennium Development Goals Report Statistical Annex 2011 (United Nations).

Childinfo: Childinfo UNICEF (<http://www.childinfo.org/>) (Accessed 06/2012)

ILO: World Social Security Report 2010/11: Providing coverage in times of crisis and beyond. International Labour Office Geneva: ILO 2010.

1.3.10 Partial Prioritization Score is composed of the income level score for the country and the disease burden score for the particular disease in the country. The minimum score is 3 and the maximum score is 12.

2.4.01 Estimate of health formal coverage is indicated as percentage of population covered by state, social, private, company-based, trade union, mutual and other health insurance scheme.

2.4.02 Population not covered (%) due to financial resources deficit (based on median value in low-vulnerability group of countries) uses the relative difference between the national health expenditure in international \$ PPP (excluding out-of-pocket) and the median density observed in the country group with low levels of vulnerability as a benchmark for developing countries. The rate can be calculated using the following formula:

Per capita health expenditure not financed by private households' out-of-pocket payments (PPP int. \$) [A]

Population (in thousands) total [B]

Total health expenditure not financed by out of pocket in int. \$ PPP (thousands) [C = A x B]

Population covered by total health expenditure not financed by out-of-pocket if applying Benchmark* (thousands) [D = C ÷ Benchmark]**

Percentage of the population not covered due to financial resources deficit (%) [F = (B - D) ÷ B x 100]

*Benchmark: Total health expenditure not financed by out-of-pocket per capita = 350 international \$ PPP.

**This formula was partially modified from the original in the source to suit an actual calculation.

2.4.03 Population not covered (%) due to professional health staff deficit uses as a proxy the relative difference between the density of health professionals in a given countries and its median value in countries with a low level of vulnerability. The rate can be calculated using the following formula:

Total of health professional staff [A = B + C]

Number of nursing and midwifery personnel [B]

Number of physicians [C]

Total population (in thousands) [D]

Number of health professional per 10,000 persons [F = A ÷ D x 10]

Total population covered if applying Benchmark* (thousands) [E = A ÷ Benchmark x 10]

Percentage of total population not covered due to health professional staff deficit [G = (D - E) ÷ D x 100]

Benchmark: 40 professional health staff per 10,000 persons.

Attachment 2 : References (Socialist Republic of Viet Nam)

	TITLE	AUTHOR	URL	YEAR
1	Socialist Republic of Viet Nam (Online)	Ministry of Foreign Affairs of Japan	http://www.mofa.go.jp/mofaj/area/vietnam/data.html	2012
2	World Development Indicators (WDI) and the Global Development Finance (GDF) databases	World Data Bank	http://databank.worldbank.org/ddp/home.do	
3	Human Development Report	UNDP	http://hdr.undp.org/en/	2011
4	Five-Year Health Sector Development Plan 2011-2015	Ministry of Health		2010
5	Socio-economic Development Strategy 2011-2020	Ministry of Planning and Investment		2011
6	Socio-economic Development Plan 2011-2015	Ministry of Planning and Investment		2011
7	Health Statistics Yearbook 2007	General Statistics Office of Viet Nam		
8	Millennium Development Goals Indicators	United Nations	http://mdgs.un.org/unsd/mdg/Default.aspx	2012
9	Health Nutrition and Population Statistics	World Data Bank	http://databank.worldbank.org/ddp/home.do	2012
10	Millennium Development Goals 2010 National Report	Ministry of Planning and Investment	http://www.undp.org.vn/digitalAssets/24/24255_Full_version_English2.pdf	2010
11	An Analysis of the Situation of Children in Viet Nam 2010	UNICEF	http://www.unicef.org/sitan/files/SitAn-Viet_Nam_2010_Eng.pdf	2010
12	Millennium Development Indicators (MDGs)	World Data Bank	http://databank.worldbank.org/ddp/home.do	2012
13	THE 1/4/2011 Population Change and Family Planning Survey:Major Findings	Ministry of Planning and Investment, General Statistics office of Vietnam	http://www.gso.gov.vn/default_en.aspx?tabid=515&idmid=5&ItemID=12387	2011
14	Immunization Profile-Viet Nam	WHO	http://apps.who.int/immunization_monitoring/en/globalsummary/countryprofileresult.cfm?C=vnm	
15	Progress toward Measles Elimination and Rubella Control in Viet Nam. 2012	Nguyen Tran Hien, Institute of Hygiene and Epidemiology		2012
16	HIV in Viet Nam Facts and Figures	UNAIDS Viet Nam	http://www.unaids.org.vn/index.php?option=com_content&view=category&layout=blog&id=13&Itemid=27&lang=en	
17	The States of the World's Children	UNICEF	http://www.unicef.or.jp/library/library_wdb11.html	2011
18	Global tuberculosis control: WHO report 2011	WHO	http://whqlibdoc.who.int/publications/2011/9789241564380_eng.pdf	2011
19	Tuberculosis, Background	WHO Viet Nam	http://www2.wpro.who.int/vietnam/sites/dcc/tb/	
20	The Challenge of MDR-TB and its control	G Mezzabotta. WHO Viet Nam		
21	World Malaria Report:2010	WHO	http://www.who.int/malaria/world_malaria_report_2010/en/	2010
22	Viet Nam Multiple Indicator Cluster Survey Report	Ministry of Planning and Investment, General Statistics office of Viet Nam	http://www.childinfo.org/files/MICS_booklet_in_Eng.pdf	2006
23	Viet Nam Joins the United Fight Against Dengue	WHO Viet Nam	www.wpro.who.int/vietnam/media_centre/press_releases/dengue+day+pr.htm?wbcmode=presentationunpublished	

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24	Dengue in the Western Pacific Region	WHO Western Pacific Region	http://www.wpro.who.int/entity/emerging_diseases/Dengue/en/	
25	Emerging disease surveillance and response, Avian Influenza Weekly Update Number 329.	WHO Western Pacific Region	http://www.wpro.who.int/entity/emerging_diseases/AvianInfluenza/en/index.html	
26	Summary Report: General Nutrition Survey 2009-2010	Ministry of Health, National Institute of Nutrition	http://www.unicef.org/vietnam/summary_report_gsn.pdf	2012
27	Noncommunicable diseases in the Western Pacific Region: a profile	WHO Western Pacific Region	http://www.wpro.who.int/noncommunicable_diseases/documents/ncd_in_the_wpr.pdf	2012
28	Noncommunicable diseases Background	WHO Viet Nam	http://www2.wpro.who.int/vietnam/sites/dhp/ncd/	
29	A leading cause of death and disability in Viet Nam	WHO Viet Nam	http://www2.wpro.who.int/vietnam/sites/dhp/injury/	
30	The ageing population in Viet Nam: Current status, prognosis, and possible policy responses	UNFPA	http://vietnam.unfpa.org/webdav/site/vietnam/shared/Publications%202011/Ageing%20report_ENG_FINAL_27.07.pdf	2011
31	Gountry Gendar Profile: Viet Nam Final report	JICA	http://gwweb.jica.go.jp/km/FSubject1501.nsf/03a114c1448e2ca449256f2b003e6f57/14ffb13da96d691a4925796e0022701c/\$FILE/%E6%97%A5%E6%9C%AC%E8%AA%9E%E7%89%88%202010(903KB).pdf	2011
32	Annual Report 2010	United Nations Viet Nam	http://www.un.org.vn/en/publications/publications-by-agency/doc_details/238-united-nations-viet-nam-annual-report-2010.html	2011
33	Joint Annual Health Review 2010: Vietnam's Health System on the Threshold of the Five-year Plan 2011-2015	Ministry of Health/ Health Partnership Group	http://jahr.org.vn/downloads/JAHR2010-EN.pdf	2010
34	Immunization Summary: A statistical reference containing data through 2010	UNICEF/WHO	http://www.childinfo.org/files/immunization_summary_en.pdf	2012
35	Ethnic Groups in Viet Nam: An analysis of key indicators from the 2009 Viet Nam Population and Housing Census	UNFPA	http://vietnam.unfpa.org/webdav/site/vietnam/shared/Publications%202011/Ethnic_Group_ENG.pdf	2011
36	Sex Ratio at Birth Imbalances in Viet Nam: Evidence from the 2009 Census	UNFPA	http://vietnam.unfpa.org/webdav/site/vietnam/shared/UNFPA_Sex%20Ratio%20at%20Birth%20Booklet%202010_ENG_FINAL.pdf	2010
37	Ex-post Evaluation Report of the Project for the Construction of the Facilities for Measles Vaccine Production	JICA		
38	Viet Nam Aids Response Progress Report 2012	National Committee for AIDs, Drugs, and Prostitution Prevention and Control	http://www.unaids.org/ru/dataanalyses/monitoringcountryprogress/progressreports/2012countries/file,68245.ru.pdf	2012
39	Vietnam HIV and AIDS Country Profile	Vietnam Administration of HIV/AIDS Control (VAAC)	http://www.vaac.gov.vn/Desktop.aspx/Content/Prevalence-data/VIETNAM_HIV_and_AIDS_Country_Profile/	2009

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41	At a glance: Viet Nam. (Online)	UNICEF	http://www.unicef.org/infobycountry/vietnam_statistics.html	
42	Report on the Rapid Assessment Protocol for Insulin Access in Vietnam	David Beran et al.	http://www.idf.org/webdata/docs/IIF-RAPIA-2008-Final-Report-Vietnam.pdf	2009
43	Thematic Evaluation of the "Health Referral System"	JICA		2008
44	Ex-post Project Evaluation on The Bach Mai Hospital Project for Functional Enhancement	JICA		
45	Vietnam Technical Report	National Center for Global Health and Medicine	http://www.ncgm.go.jp/kyokuhp/publication/tr/11-001/index.html	2011
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52	Social Security Association	ASEAN Social Security Association	http://www.asean-ssa.org/cs/groups/public/documents/document/mdaw/mdaw0/~edisp/wcm001051.pdf	
53	Report on examination, treatment, implementation of direction and 1816 project and orientation of activity plan in 2010	Ministry of Health		2009
54	Detailed Research Survey on the Project for Improvement of the Quality of Human Resources in the Medical Service System	JICA		2010
55	ODA by Region: Japan's Country Assistant Program for Viet Nam	Ministry of Foreign Affairs of Japan	http://www.mofa.go.jp/mofaj/gaiko/oda/shiryo/kuni/09_databook/index.html	
56	Country Information Sheet for Health Sector	JICA		
57	One Plan 2012-2016	The Government of Socialist Republic of Viet Nam and The United Nations in Viet Nam	http://www.un.org.vn/en/publications/one-un-documents/doc_view/278-the-one-plan-2012-2016-between-the-government-of-the-socialist-republic-of-viet-nam-and-the-united-nations-in-viet-nam.html	2012
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60	Program	USAID Vietnam	http://vietnam.usaid.gov/programs	
61	President's Emergency Plan for AIDS Relief	U.S.Embassy Hanoi	http://vietnam.usembassy.gov/pepfar.html	
62	Vietnam: Country Assistance Plan	Ministry of Foreign Affairs of Japan	http://www.mofa.go.jp/mofaj/gaiko/oda/seisaku/enjyo/pdfs/viet_0907.pdf	2009
63	ODA. Country-by-Country Data Book 2009	Ministry of Foreign Affairs of Japan	http://www.mofa.go.jp/mofaj/gaiko/oda/data/gaiyou/odaproject/asia/vietnam/index_03.html	