

THE SOCIALIST REPUBLIC OF VIET NAM
MINISTRY OF HEALTH

SPECIAL ASSISTANCE FOR PROJECT FORMATION
FOR
PROVINCIAL AND REGIONAL
HOSPITAL DEVELOPMENT PROJECT
(PHASE II)
IN
THE SOCIALIST REPUBLIC OF VIET NAM

FINAL REPORT
SUMMARY

JANUARY 2011

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

SYSTEM SCIENCE CONSULTANTS INC.

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Map of Project Survey Site



Ha Giang Provincial General Hospital



Son Tay Inter-district General Hospital



Bac Giang Provincial General Hospital



Nam Dinh Provincial Obstetrics Hospital



Ha Nam Provincial General Hospital

Candidate Hospitals (1)



Thai Binh Provincial Pediatric Hospital



Nghe An Provincial Pediatric Hospital



Thanh Hoa Provincial Pediatric Hospital



Lam Dong Provincial General Hospital



Binh Dinh Provincial General Hospital



Ninh Thuan Provincial General Hospital



Sa Dec Inter-district General Hospital



Tay Ninh Provincial General Hospital



C Da Nang Central General Hospital



Tien Giang Provincial Obstetric Hospital

Candidate Hospitals (3)

ABBREVIATIONS

ADB	Asian Development Bank
CBR	Crude Birth Rate
CIDA	Canadian International Development Agency
CPMU	Central Project Management Unit, Ministry of Health
DAC	Development Assistance Committee of Organization for Economic Cooperation and Development (OECD) of United Nations
DOH	Department of Health at each province
DOHA	Direction Office of Healthcare Activity
EIRR	Economic Internal Rate of Return
EU	European Union
FIRR	Financial Internal Rate of Return
GDP	Gross Domestic Product
GGE	General Government Expenditure
GNI	Gross National Income
GoV	Government of Vietnam
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
HCFP	Healthcare Fund for the Poor
HPIU	Hospital Project Implementation Unit
ICB	International Competitive Bidding
IMF	International Monetary Fund
IMR	Infant Mortality Rate
IT	Information Technology
JAHR	Joint Annual Health Sector Review
JICA	Japan International Cooperation Agency
JPY	Japanese Yen
KfW	Kreditanstalt für Wiederaufbau
LAN	Local Area Network
LCB	Local Competitive Bidding
M & E	Monitoring and Evaluation
MMR	Maternal Mortality Rate
MOH	Ministry of Health, Vietnam
MOLISA	Ministry of Labor, Invalids and Social Affairs
NGO	Non-Governmental Organization
NPV	Net Present Value
Ob/Gyn	Obstetrics and Gynecology
ODA	Official Development Assistance
PGH	Provincial General Hospital
PPC	Provincial People's Committee
SAPROF	Special Assistance for Project Formation
SIDA	Swedish International Development Cooperation Agency
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development
USD	United States Dollar
VND	Vietnamese Dong
VSS	Vietnam Social Security System
WB	World Bank
WHO	World Health Organization

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Map of project site

Photos of project site

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Exchange rate (As of October 2010)

1 USD = 85.5 JPY

1 VND = 0.00461 JPY

1. Introduction

1.1 Background of Special Assistance for Project Formation (SAPROF)

In Vietnam, the “Vietnam’s Strategy for Socio-Economic Development in the period 2001-2010” promulgated in March 2001 is being implemented, and the “Strategy of Protection and Care of the People’s Health for the Period of 2001-2010”, is in practice, according to the Decision of Prime Minister in March 2001. The “Strategy of Protection and Care of the People’s Health” confirms: technical decentralization and enhancement of strict regulations on reference to higher level facility; improvement of regional healthcare services for the patients with investment on equipment and human resources and the number of patient bed, where the rate of patient bed is low, in the provinces. Such strategies of MOH, the effect on economic growth, and support from international donors have contributed to constant improvement of basic healthcare indicators. As a result, Vietnam has demonstrated good performance in comparison with other countries at the same level of per capita income.

However, such improvement has been witnessed mainly in the urban area. In many provinces, medical facilities, equipment and personnel are still insufficient both quantitatively and qualitatively. Widening gap between urban and rural area is becoming as one of the major issues in health sector in Vietnam. In this regard, the Government of Vietnam (GoV) requested the Government of Japan for ODA loan assistance for further improvement of the sector in the country.

Upon request of GoV for ODA loan to improve the Regional and Provincial hospitals, JICA (formerly Japan Bank for International Cooperation) conducted a Pilot Studies for Project Formulation for Health Service Improvement, from February to June 2005, and came up with the plan of Provincial and Regional Hospitals Development Project (Phase I). The Phase I Project with an objective to improve 1 Regional General Hospital in Thai Nguyen Province and 2 Provincial General Hospitals in Lang Son Province and Ha Tinh Province started with the Yen Loan Agreement concluded in March 2006, between JICA and the GoV. With all the procured equipment delivered and the trainings done to the hospital staffs, the Phase I Project was completed by the end of November 2010.

The GoV, during implementation of the Phase I Project, requested to JICA for further support to expand assistance to provincial hospitals with ODA Loan as the Phase II Project. JICA, although understanding the needs for proposed Phase II project, found the need to review of the overall project design including the assessment of the feasibility of each candidate hospitals. Therefore, JICA and GoV agreed to conduct Special Assistance for Project Formation (SAPROF) to formulate the project in a more sustainable and effective manner in order to ensure expected benefits to be achieved satisfactory.

1.2 General outline of the study

1.2.1 Objectives of the study

This SAPROF was conducted to formulate the Phase II Project, continued from Phase I (Phase I Project), in the most suitable way to achieve such objective. The main objective of Phase II project is to consolidate regional healthcare system through reinforcing capacity of Provincial hospitals with particular focus on referral system and human resource development. It also aims to improve quality of medical service and tackle the current diseases and several non-infectious diseases which are increasing in the Provinces, and thereby contributing to enhancement of health of local people.

1.2.2 Study area

Following 15 study areas were decided based on mutual agreement between MOH and JICA. Ha Giang Province, Bac Giang Province, Ha Noi Capital, Ha Nam Province, Nam Dinh Province, Thai Binh Province, Thanh Hoa Province, Nghe An Province, Da Nang City, Binh Dinh Province, Lam Dong Province, Ninh Thuan Province, Tay Ninh Province, Dong Thap Province, Tien Giang Province

1.3 Implementation of the study

The SAPROF started in March 2010 and completed in January 2011, which comprised three parts shown below.

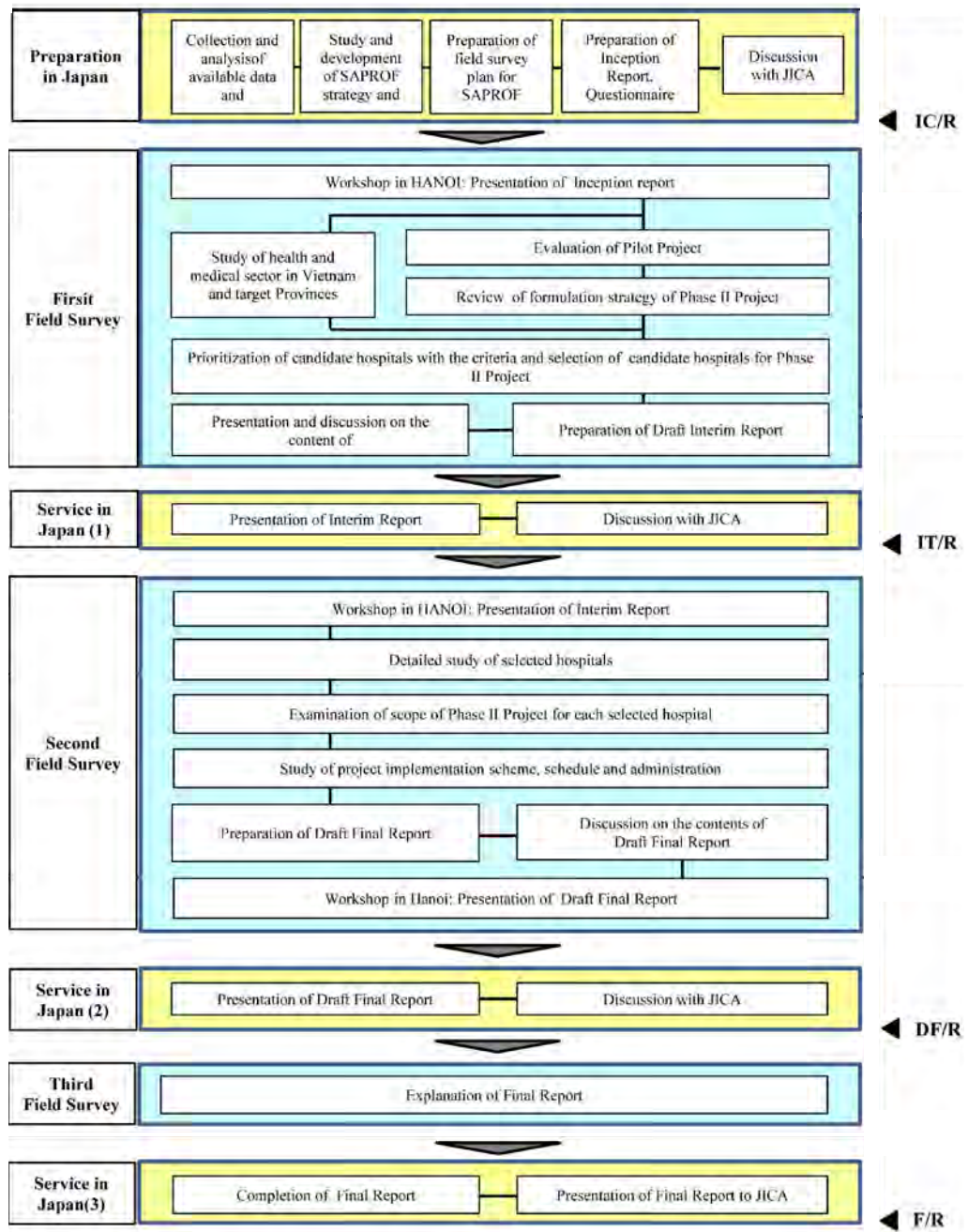
- (1) Evaluation and analysis of Phase I Project
- (2) Plenary study on all candidate hospitals to screen the current conditions and future hospital management plans
- (3) Detailed Study on selected hospitals to examine the project scope, components implementation plan and Monitoring and Evaluation (M&E) scheme of Phase II project

The target hospitals for Phase II Project were finalized through 2 phases of the field study. The first phase was conducted as a plenary study to screen all candidate hospitals, and the second phase for the detailed study was conducted to further examine the selected hospitals. Throughout the two phases, evaluation of Phase I Project was also conducted in order to collect lessons learned.

1.4 Member list of the study

The SAPROF consultant team was composed by following members.

Position	Name
Team Leader/Medical and Healthcare Service Expert(1)	Mr. Shuji Noguchi
Health and Medical Service Specialist (2)	Dr. Toshimasa Nishiyama
Medical Equipment and Facility Specialist	Mr. Kenji Okada
Health Education/Training Specialist	Dr. Takeo Mori
Hospital Management Specialist	Dr. Maria Cristina Bautista
Environment Specialist	Mr. Hiroataka Koizumi



IC/R: Inception Report, IT/R: Interim Report, DF/R: Draft Final Report, F/R: Final Report

Figure 1: Flow Chart of the SAPROF

2. Health sector in Vietnam

2.1 Socio-economic conditions and health expenditure

Vietnam is one of the fastest growing economies in Asia, with annual rates of growth registered around 7.0 percent in the last decade. Affected by the global economic downturn, the Vietnamese economy showed a sharp decline in GDP growth in 2009, although still at a robust 5.2 percent annual growth. This however is a sharp drop from the figure in 2007 which was at nearly 9 percent.

Health expenditure as a proportion of GDP in Vietnam was 7.3% in 2008; which was high in terms of a regional comparison (WHO Western Pacific Region)¹ where the average was 6.5%.

Besides, Health sector expenditure of the GoV was 8.7% of general government expenditures (GGE), which is low in terms of the region's average. This low share of health in the government budget is reflected in a low share of government in over-all health spending. GGE on health of total expenditure on health is around 40%, and private expenditure is around 60%. Nearly a third of government spending is through the social security system, or the Vietnam Social Security System (VSS). Private health expenditures were largely (90 percent) out of pocket and only a small proportion was through private health insurance.

2.2 Current situation in health sector

2.2.1 Major indicators of health sector

The country has been making steady and rapid improvements in major indicators of health, accompanied by the increased expenditures based on the rapid economic growth. Some of which are given below.

Table 1: Major Health Indicators of Vietnam (in 2008)

Population (thousand)	86,211	No. of public beds per 10,000 inhabitants	19.3
Annual population growth rate (%)	1.19	No. of doctors per 10,000 inhabitants	6.52
GDP per capita (US\$, A)	1,010	Life expectancy	73
Poor house hold rate (%)	14.87	IMR (per1,000 live births)	12
Population covered by insurance (%)	43.76	MMR (per 100,000 live births)	56
Health budget (Million VND)	13,727.7	Under-5 malnutrition (%)	19.9
Health budget in state budget expenditure (%)	8.7		
Health budget in GDP (%)	7.3		
Major cause of morbidity	1. Pneumonia 2. Acute pharyngitis and tonsillitis 3. Acute bronchitis and bronchiolitis	Major cause of mortality	1. Intracranial injury 2. HIV/AIDS 3. Pneumonia 4. Intra-cerebral hemorrhage

Source: Health Statistics Yearbook (2008), (A) World Bank (2009)

¹ Cambodia (6.6%), Japan (8.1%), Lao (4.0%), Malaysia (4.3%), Philippines (3.8%), Singapore (4.0%)

Table 2: Comparison between 2000 and 2008 in Vietnam

	2000	2008
Life expectancy	70	73
IMR	15	12
MMR	91	56

Source: Global Health Observatory, WHO

2.2.2 Current situation of hospitals and doctors

Health facilities in Vietnam in 2008 are shown in Table 3. The total number of beds per 10,000 inhabitants is 25.7, but without communal station beds, the coverage of hospitals beds would be 20. This is well within government targets for 2010. However, the distribution of these facilities and beds across the country is not likely to be even. Hospitals are mostly public, with less than 1 percent private. However private sector appeared to be rising fast, as 2007 figures were reported to be around 40 plus private facilities. This would suggest a doubling of number of private facilities in 1 year; but still far short of the 2010 target of 10-15% coverage of private beds set in the Health Sector Master Plan 2010-2020 (No.153/2006/QD-TTg). Central/MOH-managed facilities comprised less than 1 percent, but had more beds on average. Small communal health stations, with around 5 beds, were the most numerous of the facilities.

The definite number of doctors and per 10,000 populations has been increasing for the last decade, with the stable increase by 5,000 to 6,000 in the 3 years from 2005. Being different from the expansion in the number of beds, the number of doctors particularly at the district and commune levels shows bigger increase. This trend seems to correspond to the expanded access to the health services.

Table 3: Number of Hospitals and Beds, 2008

		2006	2007	2008
Population (thousand)		84,136.8	85,171.7	86,210.8
Population growth rate (%)		-	1.22	1.21
Population by age group (%)	<15 years old	26.4	25.5	25.1
	15-59 years old	64.5	65.0	65.1
	> 60 years old	9.2	9.5	9.9
Percent of Permanent Residents (A)	Urban	27%	N/A	N/A
	Rural	73%	N/A	N/A

Source: Health Statistics Yearbook 2008, Note: (A) Population in 2008: 86,210,000

Table 4: Number of Beds and Doctors, 1999-2008

Year	1999	2002	2005	2008	2008/1999
No. of beds	174,077	178,385	194,713	216,266	1.24
No. of beds per 10000 inhabitants	22.8	22.4	23.4	25.1	1.10
No. of doctors	39,294	45,073	50,106	56,208	1.43
No. of doctors per 10,000 inhabitants	5.1	5.7	6.0	6.5	1.27

Source: Health Statistics Year Book 1999-2008

2.3 General policies, strategies and development plans in health sector

2.3.1 Five Year Socio-Economic Development Plan (2006-2010)

Five Year Socio-Economic Development Plan (2006-2010) was issued with the National Assembly Resolution No.56/2006/QH11, in 2006, based on the Ten Year Socio-Economic Development Strategy (2001-2010) with Prime Minister Decision No.56/2006/QH11, assessing the achievements in the period of 2001-2005. The Resolution No.25/2006/NQ-CP recognizes that there still have been limitations in health care operation, such as; sluggish renovation and poor adaptability of medical system to the variation in disease structure; unsatisfactory quality of medical services against the inhabitants and ethnic minorities in remote areas; improper policies for the encouragement and remuneration of medical officials, doctors and nurses working in remote and disadvantaged areas; various challenges in preventive medical operation and management; health indicators sharply vary among regions, especially the ratio of neonatal mortality, children nutrition and mothers' health.

The major targets and solutions specified in the Five Year Socio-Economic Development Plan are summarized as follows.

1. Major targets in 2006 – 2010

- (1) Increase average life expectancy to over 72
- (2) Decrease maternal mortality to below 60/100,000 live births
- (3) Under-1 infant mortality rate to 16
- (4) Under-5 children mortality rate to below 25
- (5) Under-5 malnutrition children to 20
- (6) Reach the number of 7 doctors and 1-1.2 pharmacists with university degree per 10,000 people
- (7) Increase hospital beds to 26 per 10,000 people

2. Major measures

- (1) Invest, strengthen and improve public health care at grassroots level both in terms of infrastructure, and staff. Give priorities to grassroots health care and preventive healthcare. **Build and upgrade hospitals, especially General Hospitals in provinces and districts to basically meet local peoples' demands of medical check and treatment. Gradually build wards and centers network proportionate to residences rather than administrative borders, continuing investment in specialized medical centers.**
- (2) Renovate and improve medical financial policies so as to increase public financial sources. Ensure the implementation of universal medical insurance for all people in line of diversifying insurance forms.
- (3) **The government pays for medical services for the poor people, children under 6, and the subsidized, targeted people of social policies, including officials and people in the armed forces through medical insurance.** Implement the policy to partially assist near-poor people and farmers in getting medical insurance.

2.3.2 Health Sector Master Plan (2010-2020)

In June 2006, the Health Sector Master Plan (2010-2020) was issued by the Government Decree No. 153/2006/QĐ-TTg. Since the issue of Master Plan, the hospital improvements have

been implemented basically in compliance with this Master Plan.

This Mater Plan is well aligned to continuously diversify the strategies to meet all indicators that have been indicated in the strategy for the period of 2001-2010 stated in the Ten Year Socio-Economic Development Strategy (2001-2010) with Prime Minister Decision No. 35/2001/QD-TTg, providing the targets of facility improvement, human resources development, financial solutions, and environment management, in each level of central, regional, province, inter-district and district and communes, as well as the road map for realization of planning.

The major objectives and road map specified in this Master Plan are summarized as follows.

1. Major specific objectives
 - (1) Building new hospitals in line with the general planning and local socio-economic development planning.

Ensuring adequate conditions of medical waste treatment and sterilization at hospitals so that medical examination and treatment activities shall not affect the people and their living environment.
 - (2) Striving for the target by 2010, the number of hospital beds per 10,000 inhabitants (excluding commune health station beds) will reach 20.5(including 2 private hospital beds) and by 2020, 25(including 5 private hospital beds.)
2. Road map for realization of planning (2008-2010 period)
 - **To complete the construction of district and regional general hospitals. To accelerate investment in the building of regional general hospitals and provincial hospitals and three specialized health centers.**
 - To continue upgrading provincial preventive medicine centers.
 - To continue investing in projects which are not yet completed in the 2006-2007 period and invest in other projects included in the master plan up to 2010.
 - Others (2011-2020 period)
 - To invest in the development of specialized hospital in Can Tho
 - **To continue investing in further improving specialized health centers, regional hi-tech health centers and central and local health establishments**

2.4 Policies and plans on individual issues in health sector

2.4.1 Regional health system

(1) Basic concept of regional health system

Regional health system is designed for the realization of provision of appropriate health care services to all inhabitants when needed, utilizing limited health care resources effectively. To satisfy this purpose, it is essential to clarify roles and responsibilities of hospitals at each level and then establish a functional referral system through differentiation of functions and cooperation among them.

In Vietnam, a referral system is generally formulated with three-tiers, namely commune and district level, provincial level and central level. The function of the lowest tier consisting of commune and district level is near-at-hand for inhabitants with limited medical service for common disease. The function of the middle tier at provincial level is to provide specialized medical services some of which requires hospital admission. The highest tier at the central level

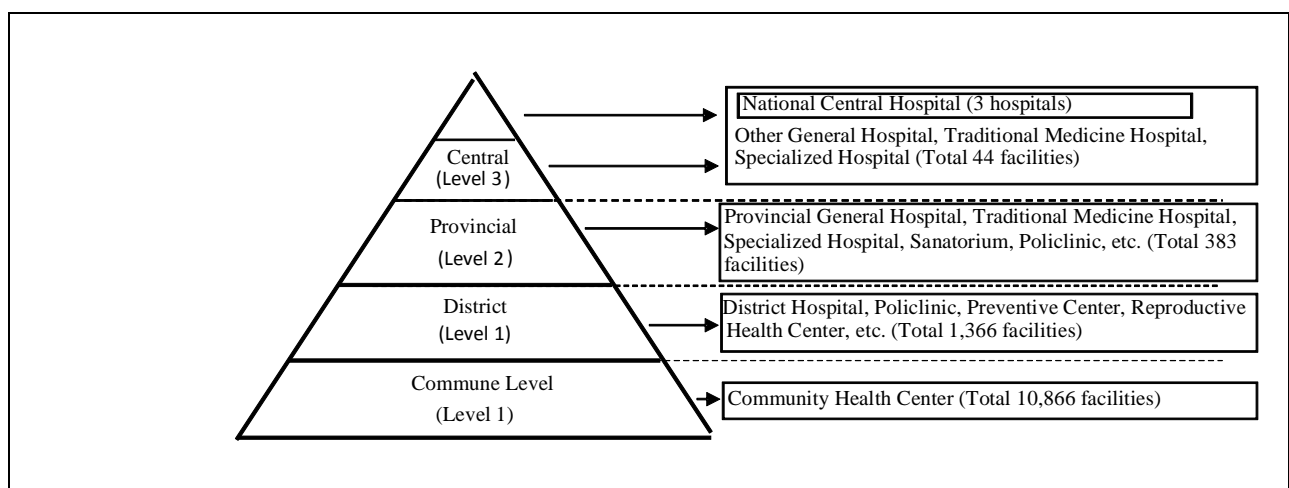
is to provide the advanced medical services, including highly specialized treatment for particular disease.

Cooperation among hospitals at different levels is a key to enable provision of health care services effectively and to improve quality of health care service in the whole country.

(2) Policies for development of networks of medical examination and treatment

The commune health center as the primary medical facility and all the hospitals at District level in each District are categorized as level 1. Inter-District hospital is also included in level 1. Level 2 include all provincial level hospitals, both general hospitals and specialized hospitals, and the regional hospital. Level 3 include all the hospitals at the central level and under the management of MOH.

As for cooperation among different-level hospitals, the upper level hospitals provide supervision and trainings to the medical staffs of lower level facility staff, in line with the MOH strategy. Patients who need specialized treatment are referred from the lower level facility to upper level facility.



Source: Health Statistics Yearbook (2008)

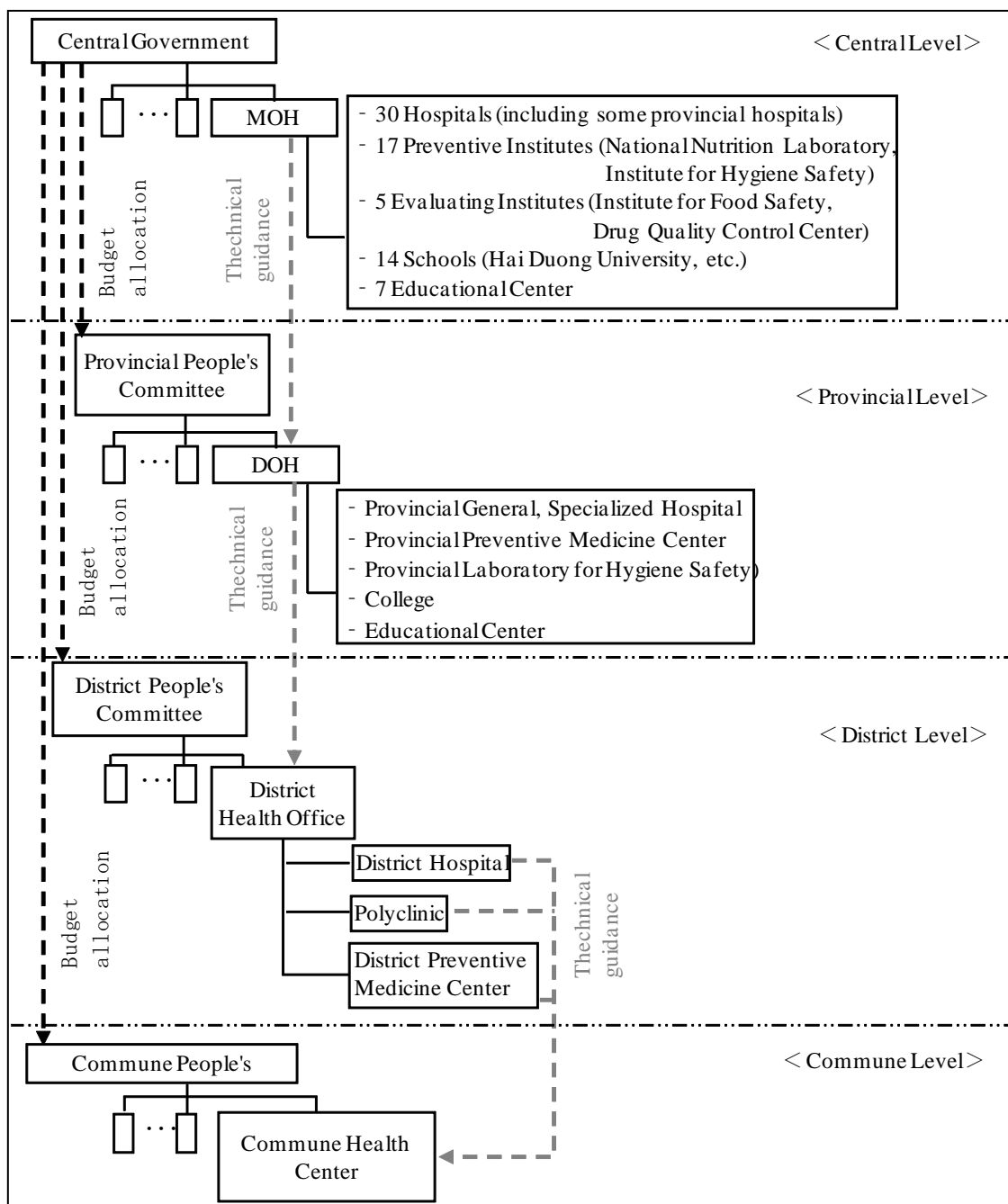
Figure 2a: Overall health system in Vietnam (as of 2008)

The Three-tier referral system is closely connected with health administration as shown below.

Budget for operation of health facilities at each level of the three-tiers is allocated from the central Government based on the request of local Peoples' Committee. The Department of Health (DOH) at each Province and District receives health budget allotment from the respective Peoples' Committee and allocate it for the management of the facilities in each Province and District.

For technical improvement or upgrade of health care services, the medical staff of upper level facilities will educate the ones of lower level facility with the arrangement of DOHs of each

Province and District.



Source: Health Service in Vietnam Today 2006

Figure 3: Flow Chart for Health Administration in Vietnam (as of 2006)

2.4.2 Facility and equipment of the medical institutions

(1) Basic target of development

In the course of the improvement of medical facilities, the Health Sector Master Plan (2010-2020) defines the number of beds per inhabitants as the basic target of medical facilities development as shown below.

- Target in the year of 2010: 20.5 beds/10,000 inhabitants
(of which 2 beds are of private hospital),
- Target in the year of 2020: 25.0 beds/10,000 inhabitants
(of which 5 beds are of private hospital),

On this premise development policy and plans are formulated as shown below, so as to establish the referral system presented in the preceding section.

Regarding medical equipment, MOH issued Decision 437/QD-BYT dated 20/2/2002 which indicates the number and details of equipment for each department of medical institutions. MOH is planning to update the equipment lists to make it suitable in accordance with demands of health care and advances of medical technology.

2.4.3 Human resources allocation and education

The Health Sector Master Plan (2010-2020) acknowledges the importance of development of balanced and rational human resources for the health sector and sets the policies and strategies for the human resource development to achieve the targets as follows.

- Over 7 medical doctors per 10,000 inhabitants by 2010 and over 8 medical doctors per 10,000 inhabitants by 2020;
- One university-level pharmacist per 10,000 inhabitants by 2010 and 2-2.5 university-level pharmacists per 10,000 inhabitants by 2020, with at least 01-03 university-level pharmacists at district level.

2.4.4 Hospital management

Finance is one of the most important elements of hospital management. Hospitals generally rely on 3 funding sources: government budget, health insurance and hospital fees. An examination of the over-all health budget in the public sector in terms of expenditures (Table 2j), by source showed that between 2006 and 2008, there has been an increase in health spending by 74.0%. The biggest increase was the 127.7% change in development investment expenditures comprised mainly of equipment, capital acquisitions and renovations. Expenses for training, under "Other expenditures" including staff training and management also rose by a high of 76.7%.

The same table indicates that health spending remained dependent on government budget at just slightly below 50%, followed by health insurance (33.1% share in 2008) which grew fastest among the revenue sources. Hospital fees or user charges grew at 32.5% but was a declining share of revenue at 14.6%, down from 17.6% in 2006.

Table 2j: Health Expenditure by Public Sector (Budget), Vietnam 2006/2008

	2006 (Billion VND)	Percentage Share (%)	2008 (Billion VND)	Percentage Share (%)	Rate of Change
A. Total Health Expenditures	24,694	100.0	43,048	100	74.3
1) Treatment & Prevention of recurrent nature	19,100	77.3	30,580	71.0	60.1
2) Development Investment Expenditures	5,063	20.5	11,530	26.8	127.7
3) Other Public Expenditures incl. management	531	2.1	938	2.2	76.7
B. Expenditures Based on Source	19,100	100.0	30,580	100	60.1
1) Government Budget	9,303	48.7	15,067	49.3	62.0
2) Hospital Fees	3,370	17.6	4,464	14.6	32.5
3) Health Insurance	5,631	29.5	1,0114	33.1	79.6
4) Others	386	2.0	435	1.4	12.6
5) Aid and Loans	410	2.1	500	1.6	22.0

Source: Health Statistics Yearbook 2006 and 2008

Another significant policy issuance was the Politburo's Conclusion 43-KL/TW, implementing Resolution 46-NQ/TW for 3 years implementation, and Directive 06-CT/TW for 5 years implementation. It reaffirms the basic orientation for health financing and restructuring of health financing sources with the explicit goal of allocating more state budget to account for a bigger share (at least over 50%) of total health expenditures. This increased budget in effect would bring benefits to medical service users, as Conclusion and Directive include: acceleration of universal health insurance, compulsory health insurance, improving care quality and effectiveness for insured and reforming user fees based on full and correct calculation of costs for patients. All hospitals are aware of the imminent changes in user fees and eagerly awaiting its launch.

The hospital management strategy varies by the degree of autonomy. While fees remain in conformity to MOH fee schedule, Decrees 10/2002/ND-CP and 43/2006/ND-CP for autonomy allow hospitals a wide range of discretionary power in nearly all areas – financial operations, human resource management, organization of services and provision of services. For instance, hospital can earn its own income, distribute it among staff, invest such funds, and establish wards for fee-paying patients. Incentives for staff are aligned with how well the hospital earns, although there are ceilings on maximum allowances and bonuses, after deducting the recurrent cost and development plans (e.g. facility upgrade). Budget oversight and financial review are provided by the PPC and other state agencies. Decree 43/2006/ND-CP expands further powers with full control over manpower (hiring, firing, promotion, assignments). Only 5 hospitals in the country operate under full autonomy as mandated under Decree 43. Other hospitals are also trying but failed to overcome a hurdle to complete autonomous management which hospitals consider very difficult.

2.4.5 IT technology development at medical institutions

Utilization of IT technology at medical institutions is one of effective solutions for improvement of medical services for patients. Enhancement of IT technology utilization would contribute to increasing management capacity at medical institutions such as handling of medical charts, hospital fee management, and insurance management.

MOH encourages hospitals to use network software named “Medisoft” for hospital management improvement. They expect that use of computerized database will enable evidence-based medical service and hospital management.

2.4.6 Environment management at medical institutions

Environmental issues are one of the most important subjects in the world. Medical institute is also required to address it. However, the environmental issues have particular aspects from the viewpoint of medical institute. Especially medical wastes are considered as a possible cause of environmental pollution and outbreak of infectious disease because it may include infectious wastes, noxious chemicals, radioactive substances and so on. Moreover, medical facility is open to the public where many people can visit and enter. In order to prevent environmental burden or other negative impacts, control of medical wastes, both waste water and solid waste, is urgent and crucial concern in the environmental issues in medical institute.

The detailed development plan for 2020 approved in February 2008 with the Prime Minister’s Decision No. 30 set the development target of waste treatment system as shown below.

- By 2010, more than 80% of health facilities have waste treatment system as specified by MOH.
- By 2020, 100% of them have waste treatment system

2.5 Activities of donors in health sector

2.5.1 Activities of JICA

JICA has been contributing to the development and improvement of the three core central hospitals in the country, namely Bach Mai, Hue Central and Cho Ray hospitals in the North, Central and South, in the form of grant aid and technical assistance. Technical assistance was extended for clinical service improvement, human resource development, training function reinforcement and others. The Hoa Binh Provincial General Hospital was also supported by JICA, as a model of provincial medical system, in its improvement of infrastructure, emergency services, nosocomial infection control, equipment maintenance system, DOHA² in the linkage with Bach Mai Hospital, and others. The training services by central hospitals were fully utilized in the Phase I Project.

² DOHA: Direction Office for Healthcare Activities-Service of technical assistance by sending medical experts to lower level facilities. In broader concept, the service also includes the training at DOHA office.

2.5.2 Activities of other donors

Beside JICA, many other donors are actively supporting the health sector of Vietnam. Their assistance covers the improvement of health infrastructure, hospital management, human resource development, health finance, waste management and policy development. Major donors supporting health sector of Vietnam meet quarterly every year since 2008 for information sharing with the chair of MOH Department of International Cooperation. Recently, upon request of MOH, major donors support drafting the coming 5 years development plan.

Table 6: Other Donors Activities

Donor	Project (Implementation period)	Contents
ADB	Rural Health Project (2001-2007)	Improvement of facilities, procurement of medical equipment of Community Health Center and District Hospital, and capacity building of Volunteer Health Worker in Ben Tre, Binh Phuoc, Can Tho, Hoa Binh, Khanh Hoa, Long An, Ninh Binh, Phu Tho, Quang Binh, Quang Ngai, Quang Ninh, Tien Giang
	Preventive Health System Support Project (2006-2010)	Procurement of medical equipment and training for 46 Provincial Preventive Medicine Centers
	Health Care in the South Central Coast Region Project (2009-)	Improvement of health service and human resource development in Da Nang, Quang Nam, Quang Ngai, Binh Dinh, Khanh Hoa, Ninh Thuan, Binh Thuan
ADB/ SIDA	Health Care in the Central Highlands(2005-2009)	Improvement of facilities for 15 District Hospital, and procurement of medical equipment and reeducation at university for 16 District Hospitals in Dac Lak, Dac Nong, Gia Lai, Kon Tum, Lam Dong and Dac Lak Provincial Hospital
World Bank	National Health Support Project(1996-2005)	Assistance to national program such as malaria and tuberculosis. Procurement of equipment, improvement of facilities and training for District Hospital and Community Health Center in Cao Bang, Lang Son, Son La, Ha Bac, Ha Tay, Nghe An, Ha Tinh, Quang Tri, Binh Dinh, Phu Yen, Ninh Thuan, Gia Lai, Kon Tum, Tay Ninh, Soc Trang
	Mekong Regional Health Support Project (2006-2011)	Procurement of medical equipment for 13 Provincial Hospitals and Preventive Medicine Centers in Long An, Dong Thap, An Giang, Tien Giang, Ben Tre, Vinh Long, Tra Vinh, Can Tho, Hau Giang, Soc Trang, Kien Giang, Bac Lieu, Ca Mau and Can Tho Central General Hospital
	Northern Uplands Health Support Project (2009-)	Assistance for Provincial Hospitals and District Hospitals and Preventive Medicine Centers in Ha Giang, Bac Can, Cao Bang, Dien Bien
EU	Health Care support to the Poor of the Northern Uplands and Central Highlands: HEMA (2006-2010)	A fee-based contract that shall ensure the provision of high quality preventive, curative and preventive care in 5 mountainous provinces which have a high proportion of poor people (Dien Bien, Lai Chau, Son La, Gia Lai and Kon Tum).
Holland	Human Resource Development	Reproductive health, Basic education at Hai Duong University including improvement of curriculums
Germany (KfW)	Medical Equipment Improvement	Improvement of medical equipment at Viet Duc Hospital and provincial hospitals in Quang Ninh, Bac Kan, Kon Tum,

		Kien Giang, Tuyen Quang, Lao Cai, Son La, Vinh Phuc, Hai Phong, Thanh Hoa, Yen Bai
Korea (Korea Eximbank)	Medical Facility Improvement	Under construction for Quang Nam Central Hospital

3. Current situation of candidate hospitals

For the plenary study, candidate hospitals were 15 which were selected through the discussion between MOH and JICA, and the evaluation was done on these 15 candidate hospitals with the criteria drawn from the policies of both MOH and JICA. Such criteria were; existence of mid-and -long term perspective of hospital and its consistency with the Provincial healthcare plan, contribution to reinforcement of regional healthcare system, human resource development plan, etc.

Such candidate hospitals scattered nationwide in Vietnam can be categorized into followings.

Table 7: Categorized Candidate Hospitals

(Regional Category)		(Functional Category)		(Level Category)	
North East	2	General Hospital	10	Central Hospital (Under MOH)	1
Red River Delta	4	Specialized Hospital	5	Inter-District General Hospital	2
North Central Coast	2	TOTAL	15	Provincial General Hospital	7
South Central Coast	2			Provincial Special Hospital	5
Central Highland	1			TOTAL	15
South East	2				
Mekong Delta	2				
TOTAL	15				

On these 15 candidate hospitals, data was collected with the Questionnaire prepared by the Consultants, and the interview to the hospital staff through the field survey was done. Based on the analysis of data and information collected through the Questionnaire and interview, prioritization of the candidate hospitals were done with the criteria which was agreed by MOH and JICA, for the detailed study of component for the Phase II Project.

The economic and health profile of the provinces of such 15 candidate hospitals and the current conditions of candidate hospitals are as shown in the following tables.

Table 8: Provincial Economic and Health Profile, SAPROF Provinces

Candidate Provinces	Name of hospitals	GDP/ Capita (USD) 2007	Rank	Poverty Rates 2007 (A)	Rank	Health Budget /Capita (VND) 2008	Rank	IMR 2008	Rank	CBR 2008	Rank
Ha Giang	Ha Giang Provincial General Hospital	240	15	35.49	1	229.4	1	40	1	24.1	1
Bac Giang	Bac Giang Provincial General Hospital	432	14	21.28	3	135.3	5	18	5	17.9	3
Hanoi	Son Tay Inter-District General Hospital	3,562	1	2.21	15	120.7	6	7	10	16.9	5
Ha Nam	Ha Nam Provincial General Hospital	663	9	10.60	10	108.5	9	14	7	13.5	14
Nam Dinh	Nam Dinh Provincial Obstetric Hospital	816	8	10.50	11	104.3	11	11	9	15.5	8
Thai Binh	Thai Binh Provincial Pediatric Hospital	620	10	13.60	8	106.4	10	11	9	14.2	13
Thanh Hoa	Thanh Hoa Provincial Pediatric Hospital	465	12	27.20	2	138.3	4	19	4	14.5	12
Nghe An	Nghe An Provincial General Hospital	456	13	19.59	4	91.8	14	26	2	17.6	4
TP Da Nang	C Da Nang Central General Hospital	2,199	2	4.23	14	156.8	3	11	9	15.6	7
Binh Dinh	Binh Dinh Provincial General Hospital	937	7	12.63	9	113.5	8	17	6	15.4	9
Lam dong	Lam Dong Provincial General Hospital	949	6	15.98	6	160.5	2	14	7	18.1	2
Ninh Thuan	Ninh Thuan Provincial General Hospital	587	11	14.73	7	119.5	7	20	3	16.8	6
Tay Ninh	Tay Ninh Provincial General Hospital	1,523	3	9.08	12	101.9	13	14	7	15.1	10
Dong Thap	Sa Dec Inter-District General Hospital	1,128	4	8.83	13	103.3	12	18	5	14.9	11
Tien Giang	Tien Giang Provincial Obstetric Hospital	1,011	5	16.45	5	89.2	15	13	8	15.5	8
Average, Candidate Provinces		1,039		14.83		125.3		17		16.4	
Total, Vietnam		832		14.87		132.8		15		16.7	

Sources: Provincial General Statistics Office

Note: (A) Ministry of Labor, Invalids and Social Affairs (MOLISA), Health Statistics Yearbook 2008

Table 9: Basic Current Condition of 15 Candidate Hospitals

(2009)

Name of Hospital	Grade	Distance to Upper Level Hospital (km)	Authorized Number of Bed	Bed Occupancy Rate (%)	Average Length of Stay (day)
Ha Giang Provincial General Hospital	2	320 (Hanoi)	400	120	8.3
Bac Giang Provincial General Hospital	2	60 (Hanoi)	550	128	9.6
Son Tay Inter-District General Hospital	2	40 (Hanoi)	400	126	6.2
Ha Nam Provincial General Hospital	2	60 (Hanoi)	450	153	6.6
Nam Dinh Provincial Obstetric Hospital	2	90 (Hanoi)	160	167	6.8
Thai Binh Provincial Pediatric Hospital	2	110 (Hanoi)	200	164	7.6
Thanh Hoa Provincial Pediatric Hospital	2	150 (Hanoi)	300	128	7.5
Nghe An Provincial Pediatric Hospital	2	300 (Hanoi)	240	152	5.7
C Da Nang Central General Hospital	1	100 (Hue)	450	93	12.5
Binh Dinh Provincial General Hospital	1	400 (Hue)	900	158	9.4
Lam Dong Provincial General Hospital	2	320 (HCMC)	500	99	5.9
Ninh Thuan Provincial General Hospital	2	320 (HCMC)	500	116	6.2
Tay Ninh Provincial General Hospital	2	120 (HCMC)	500	100	6.0
Sa Dec Inter-District General Hospital	2	140 (HCMC)	465	131	5.3
Tien Giang Provincial Obstetric Hospital	2	75 (HCMC)	150	100	4.0

Source: Questionnaire prepared by SAPROF team

4. Evaluation of Phase I Project and lessons learnt

4.1 Current situation, finding and lessons of Phase I Project

With the aim of applying the key lessons to the Phase II Project, the mid-term evaluation of Phase I Project was conducted as a part of SAPROF. Major findings and lessons learned by each stakeholder are summarized below.

Table 10: Major findings and lessons learnt

Target Hospital	Major Findings and Lessons Learnt
Ha Tinh Provincial General Hospital	Progress: <ul style="list-style-type: none"> - All procured equipment has been completely delivered and installed by around the middle of August 2010. The procured and installed equipment has not been placed in full operation yet. - All training courses except 1 course have been finished.

	<p>Achievements:</p> <ul style="list-style-type: none"> - 2 sets of dialysis are in full operation, with which the number of patients have increased almost double. Other equipment including endoscope, electrocardiogram, ophthalmology equipment, oxygen supply system, surgical equipment, etc. are fully utilized and maintained, which has been contributing to the service improvement. - Number of referred patient to upper level hospital is decreased by around 25% in the first quarter of the year, compared with the last year, subject to further confirmation on direct causal relationship. <p>Lessons:</p> <p>Inputs were properly made to respond to the needs in terms of quality and quantity. However, the training and equipment procurement took longer time than planned. From viewpoint of overall project management, such unexpected delay would cause additional delay in the other activities concerned with the training and equipment. Hence, scheduling should be considered to keep enough spacing of time for next coming activities in the Phase II Project.</p>
Lang Son Provincial General Hospital	<p>Progress:</p> <ul style="list-style-type: none"> - Equipment procured have been partially delivered and installed, and the last equipment was planned for delivery by the end of October 2010. And its maintenance is being done in accordance with annual/monthly plan but training to maintenance staff deemed necessary. - Out of the total of 33 training courses, 32 courses have finished, with remaining 1. - Hospital maintained the HPIU consisting of 7 members who are all full-timers. For the equipment procurement, outside experts were employed under a contract; medical equipment engineer (2), financial expert (1), building engineer (2) and an expert from Provincial Health Service. <p>Achievements:</p> <ul style="list-style-type: none"> - The equipment which was procured is the basic needs for the service and such equipment is as hospital planned, training was and being conducted. Content, period of courses, and number of trainees were satisfactory to the needs. - Intuitionally, the HPIU is functioning and does not have communication problem with parties concerned. HPIU appreciates advice and suggestion of CPMU and consultants. <p>Lessons:</p> <ul style="list-style-type: none"> - The training needs some improvements; the training faced (1) delay of payment to training institutions due to the complicated procedures with which the hospital is not familiar; (2) difficulty in managing the staff assignment to the service and training, as the training is concentrated in January to August 2010, although concentrated training is effective. - The main reason why the training could not be started earlier is the time consumed for the contract negotiation with the training institution which was 1.5 months. - Training in Japan for hospital management and clinical technology, total of 4 to5 staff is suitable. The composition of trainees is ideal, half of which is for management and the other is for clinical technology. In terms of the project implementation period, the original plan of 24 months in the Phase I Project is considered short. 36 months could be better for more deliberate consideration and transfer of technology in the Phase II.
Thai Nguyen Central General Hospital	<p>Progress:</p> <ul style="list-style-type: none"> - Delivery schedule of ICB package was delayed but they have been delivered in August 2010. Delivery of some equipment of LCB package is delaying because of political problem in Thailand. Remaining equipment will be delivered in November 2010. - The trainings at domestic institutions have been completed except 1 course. <p>Achievements:</p> <ul style="list-style-type: none"> - The equipment was procured as planned and satisfies the needs. However, hospital wishes to procure more, if the budget allows. - The training meets the demand in terms of objective and content. Hospital however expects

	<p>to send more staff for longer period for both domestic and international training.</p> <p>Lessons:</p> <ul style="list-style-type: none"> - The assignment period of international consultants in charge of “medical equipment” and “training” was shorter than hospital expected, as these were the main components of the project. - It was necessary during the implementation to reinforce the HPIU with the outside expert. Particularly, ICB needs to be done in compliance with the JICA Guidelines, which is difficult to understand and follow from the bid preparation up to the payment.
MOH/CPMU	<p>Lessons:</p> <ul style="list-style-type: none"> - Phase I Project provided on the job training for each hospital in procurement of equipment, including preparation of tender documents for international bidding both in English and Vietnamese language. However, it is still recommended that ICB should be managed by a central committee and LCB managed by hospital. - The size of bid packages for LCB should not be bigger than 200 Billion VND to secure fair bidding. It would be appropriate in between 30 to 50 Billion VND. - As for the training plan, bottom-up approach made it difficult to adjust the plan after it was prepared. To ensure effectiveness and efficiency of the training, not only taking into account the actual demands from hospitals, but also the comprehensive management is necessary. - Bigger budget should be allocated for consulting services and training.

Source: Answers to Questionnaire prepared by SAPROF team

4.2 Midterm evaluation of Phase I Project

Description of the five evaluation criteria that were applied in the analysis for the midterm evaluation is given in the table below.

Table 11: Description of Five Evaluation Criteria

Five Criteria	Description
Relevance	Relevance of the Project is reviewed by the validity of the Project Purpose and Overall Goal in connection with the government development policy and the needs in Vietnam.
Effectiveness	Effectiveness is assessed to what extent the Project has achieved its Project Purpose, clarifying the relationship between the Project Purpose and Outputs.
Efficiency	Efficiency of the Project implementation is analyzed with emphasis on the relationship between Outputs and Inputs in terms of timing, quality and quantity.
Impact	Impact of the Project is assessed in terms of positive/negative, and intended/unintended influence caused by the Project.
Sustainability	Sustainability of the Project is assessed in terms of political, financial and technical aspects by examining the extent to which the achievements of the Project will be sustained after the Project is completed.

4.2.1 Relevance

Relevance is high in terms of policy and needs in Vietnam, Japanese policy of Official Development Assistance (ODA) to Vietnam, and project design.

The national health policy “Strategy of Protection and Care of the People’s Health for the Period of 2001-2010” and “the Five Year Socio-economic Development Plan (2006-2010)” addressed the needs of strengthening public health care through improving hospitals in provinces and network between medical institutions. As the pilot project, to reduce the overloaded burden of top referral hospitals such as Bach Mai Hospital, the hospitals that send

patients to top referral hospitals in Hanoi were selected. Hence, the Phase I Project meets their national plan, which attempts to develop the healthcare system and to provide the medical services with higher quality.

The ODA policy of the Government of Japan for the health sector of Vietnam focuses on the strengthening the function of medical facilities, infection control and improvement of reproductive health. According to this policy, the concept of the Phase I Project is designed to meet these objectives through supporting technical training to solve serious deficiency in technology and management expertise in the selected hospitals.

4.2.2 Effectiveness

From the aspect of the technology improvement, the new equipment and training on new techniques provided in the Phase I Project made the 3 hospitals stand on the starting point of modern medicine with technology.

The flow of implementation process, such as after feasibility study, procurement of equipment and operating training courses, were mostly completed on time as planned, though partially there was a delay but some process were accelerated to catch up. There was no specific obstructive factor on the implementation method, and the effectiveness of taken method is approved.

4.2.3 Efficiency

Contributing Factors for Efficiency were the organizational set-up of Hospital Project Implementation Units (HPIUs) organized by the hospitals as well as CPMU under MOH. One of the major barriers against Efficiency was lack of experience of dealing with JICA ODA Loan project. All implementing and collaborating organizations were confused by the procedure, documentation, and in timely actions.

The advanced technology through newly procured medical equipment and technical training made a significant benefit on the utilization of equipment and improvement of medical services.

Technical training to support operation of new medical equipment and to improve the capability of medical service technology present a synergetic effect of inputs of equipment and training. This means that the training was efficient to achieve the project purpose sooner.

4.2.4 Impact

As the prediction from the input and activities at present the project purpose is being achieved, because improvement of hospitals will secure physical accessibilities of certain medical services to provincial residents. Decreasing numbers of patients referred to higher level hospitals can be an evidence for ensuring the hospital capacity development.

The national health strategies and development plans are assumed to consistently address the

importance of providing better medical services. So that this policy stability satisfies external condition to achieve the project goal. Particular negative impact has not been reported so far.

4.2.5 Sustainability

According to the national health plan, strengthening provincial hospitals is a key to improve health network. Draft Vietnam's Strategy for Socio-Economic Development 2011-2020, which was released in 2010 July, addresses the unsolved problem of overloaded hospitals and the low quality of health services. It puts emphasizes on developing healthcare professionals and improving the quality of healthcare services. This statement approves the continuous policy of strengthening provincial hospital by both tangible (e.g.; facility and equipment) and intangible measures (training).

To continuously provide medical services with high quality, securing enough budgets for operation/ maintenance including expense for consumables is a clue in hospitals in Vietnam.³ All of three hospitals receive income of insurance and user fee, and they have increased budget allocation for consumables year by year. With this increases, hospitals plan to activate the medical services, and also consider contributing to financial sustainability.

The demand for new technology is a hope for the medical staffs and patients, especially who are able to pay out-of-pocket medical cost. Besides, Health Care Fund for Poor (HCFP) will reduce the financial burden on vulnerary groups and give them opportunities to receive advanced treatments. The new technology introduced in the Phase I Project is mostly at the middle level such as ultrasound and endoscopes, which is cost-effective in less consumable and high performance in diagnosis without invasiveness. Such diagnoses will also make the medical staffs feel at ease released from the risk of medical accidents and to keep willingness to work.

5. Planning framework for Phase II Project

5.1 Objective and approach of provincial hospital improvement

In health sector, the GoV has been making efforts for improvement of regional healthcare services for the patients with investment on equipment and human resources. As a result, Vietnam has revealed rapid improvements in major health indicators and demonstrated good performance in comparison with other countries at the same level of per capita income.

Nevertheless, in many provinces healthcare services are still insufficient both quantitatively and qualitatively. Widening gap between urban and rural area is becoming as one of the major

³ Usually personnel expenses are the main expenditure and big burden for the public hospital. However, most of the public hospitals in Vietnam are regulated in the number of staff to employ. Thus, personnel expenses are regarded as fixed cost, and to ensure the budget for consumable and operation/maintenance costs is the keys to how well the hospital can provide medical services continuously.

issues. In addition, the sluggish renovation and poor functionality of medical system to the variation of disease structure are also issues to be tackled.

In accordance with the above background and findings mentioned in the preceding chapters, the planning framework for the improvement of provincial hospitals, as the core hospitals in the provinces, are developed. The planning framework shows direct objective and integrated approaches to realize the objective, which are summarized in the table below.

Table 12: Objective and Approaches

Direct Objective	Approaches/ Outputs	Suggested Activities
Objective: Reinforcement of provincial hospitals to fulfill the local needs for health service in the region, thereby contributing to the optimization of regional health system	Approach 1 To reinforce the basic technologies	Activity 1 - Basic equipment - Fundamental training in Vietnam
	Approach 2 To introduce new technologies for new disease structure	Activity 2 - Modern equipment - Technical training in Vietnam and advanced country
	Approach 3 To improve hospital management	Activity 3 - Management training in Vietnam and advanced country
	Approach 4 To strengthen the technical support to lower level hospitals	Activity 4 - Technical training in Vietnam and advanced country
	Approach 5 To consolidate the linkage with other medical institutions and donors in the region	Activity 5 - Cooperation with other donors' assistance, and other medical facilities and training institutions in the region

Note: The above Direct Objective and Approaches/Outputs are of basic strategy for the improvement of provincial hospitals in the country, and this basic strategy shall be applied and realized in the other hospitals of the country, including the selected ones for the Phase II Project. .

As the Project adopts 3 approaches of i) to reinforce the basic technologies, ii) to introduce new technologies and iii) to improve the hospital management including IT technology and environment management, the priority targets of hospital activities were examined ahead of identification of project component. In this regard, priority target areas were divided into four categories in this section: medical care (basic and new technologies), hospital management, information technology and environmental consideration.

5.2 Selection of hospitals for Phase II Project

5.2.1 Survey based criteria by Consultants

Consultants developed the criteria and scoring system for prioritizing the candidate hospitals through the discussion with MOH/ CPMU, as follows. The criteria are largely divided into;

Category	Points of Criteria
(1) General (Policy compliance)	<ul style="list-style-type: none"> Does the target hospital meet the national policies (Prime Minister Decision 930/2009/QD-TTg, 47/2008/QD-TTg, 153/2006/QD-TTg, and 30/2008/QD-TTg)? Is the target hospital far enough to be independent from top 3 central hospitals? Does the target hospital cover poverty area to provide necessary medical services?
(2) Hospital management	<ul style="list-style-type: none"> Does the target hospital have own management and construction plan whenever the hospital is able to operate effectively with significant investment? Does the target hospital have urgent needs to improve, such as high bed occupancy rate, long length of stay and large numbers of referral to upper hospital? Does the target hospital accept patients from lower level hospitals following referral system?
(3) Hospital finance	<ul style="list-style-type: none"> Does the target hospital have enough revenue from various sources, such as hospital fee from patients and government budget?
(4) Human resource	<ul style="list-style-type: none"> Does the target hospital consider and budget for staff training?
(5) Equipment	<ul style="list-style-type: none"> Does the target hospital need to update medical equipment to meet the standard as provincial hospital level? Does the target hospital have enough number and capability of human resources to operate and maintain medical equipment? Has the target hospital ever managed finances, such as budgeting for maintenance and supplying of spare-parts?
(6) Environment management	<ul style="list-style-type: none"> Does the target hospital have a moderate waste management system for solid waste and waste water? Does the target hospital consider the future plan to improve waste management?

5.2.2 Prioritization of hospitals for Phase II Project

JICA, upon receipt of Consultants prioritization of candidate hospitals, re-examined the point ranking with additional criteria in line with the JICA's policy, and requested MOH to select 10 hospitals for Phase II Project. MOH has selected 10 hospitals with the following additional criteria;

Criteria	Reason for Criteria
(1) Availability of investment by Government Bond	<ul style="list-style-type: none"> If the target hospital is difficult to receive the Government Bond, it means that the JICA project is only the resource and opportunity to be invested for the hospital.
(2) Task as satellite hospital of central hospital	<ul style="list-style-type: none"> When the target hospital has a roll as satellite hospital, the hospital is stated as secondary important after central hospitals.
(3) capability of the project implementation	<ul style="list-style-type: none"> The target hospital should have capacity to implement the project operation smoothly to finish on time.

Adopting the above additional criteria, MOH has selected the following 10 hospitals as the target hospitals for Phase II Project, which were concurred by JICA through the discussions.

5.3 Basic policy for investment in each hospital

5.3.1 Bac Giang Provincial General Hospital

Bac Giang Province is located in North-East Region, and populations of poverty are 80,000 people (5% of total provincial population), the highest among selected 10 provinces. Main cause of death in the province and Provincial General Hospital are acute symptoms or emergency

cases, and not complicated diseases or lethal status. Main symptoms in the hospital are infectious diseases, therefore the hospital refers patients who need neuro- or abdominal-surgeries to upper level hospital in Ha Noi, where is about 60 km away. The National road to Ha Noi goes across Bac Giang Province, so that the hospital treats lots of severe traffic accident cases about 1,000 cases per year, and 30-40% of accidents need neuro-surgery. The Bac Giang Provincial General Hospital is now under construction and the facilities will be renewal by 2013. However, medical equipment is not planned with the renovation of the facilities. When the hospital is strengthened the function of emergency room, surgery, ICU and diagnosis area, existing traffic accidents and acute cases will be cured and no necessary to refer to upper level hospitals. Additionally, to prevent surgical site infection and post-operative wound infection, current infection control system shall be re-considered.

5.3.2 Son Tay Inter-District General Hospital

Son Tay Inter-District General Hospital is stated as “satellite hospital” for Viet Doc hospital in Ha Noi. The meaning of “satellite hospital” is a bulwark from referred patients from outside of city and alleviative crowded central hospitals. This is the most important role of the hospital, therefore the hospital is expected to have almost same function as central hospitals. The result of morbidity questionnaire is not appropriate, however, delivery related cases, gastrological symptoms and respiratory diseases are remarkable. To treat those cases, the hospital is required to strengthen the function of surgery, emergency care, ICU and diagnosis areas.

5.3.3 Thai Binh Provincial Pediatric Hospital

Thai Binh Province is located in the Red River Delta Region, and getting an industrial zone from agricultural activity as well as neighboring provinces. Thai Binh Provincial Pediatric Hospital is recently becoming independent from the provincial general hospital to be a specialized hospital for pediatrics covering neighboring provinces. New facility is under construction and the building will be furnished by 2013. However, the medical equipment is not included in the plan. Thai Binh Provincial Pediatric Hospital is assigned for specialized hospital to regional coordination with neighboring Nam Dinh Provincial Obstetric Hospital to cover suburban Ha Noi area for maternal and child health. There is no particular data about child health indicator, but the political order of MCH network formation stands significantly. Thus, for the future hospital facility plan which will be finished in 2011, diagnosing and initial treatment for emergency cases is priority for medical equipment supply on the future plan. Concretely, operation theater, ICU, laboratory and neonatology departments are the target for procurement.

5.3.4 Nam Dinh Provincial Obstetric Hospital

Nam Dinh Province is located in North-East Region and 100 km away from Ha Noi. Nam Dinh Provincial Obstetric Hospital became independent from provincial general hospital since 2009 with new facilities. To cover the obstetric and gynecology field in neighboring provinces as a specialized hospital, the hospital should provide complete care but still refers severe cases to Ha Noi about 800 patients among 9,000 outpatients/ year. Obstetric care can not wait for severe case and already patients come from rural area to this hospital, so that the hospital needs to reduce the number of referral to upper level facility. Thus, the hospital will be strengthened the field of Ob/Gyn surgery, diagnosis technology, as well as infection control areas. Also the hospital targets to serve premature baby born under 800 g or 28 weeks, and sends medical staffs for training on abroad.

5.3.5 Nghe An Provincial Pediatric Hospital

Nghe An Province is located between Ha Noi and Hue, and belongs to the North-central coast region. Due to the harsh climate, the poverty rate is 6% as the highest among the selected 10 provinces. However, the capital Vinh City is the 6th largest city. Provincial Pediatric Hospital is recently becoming independent from the provincial general hospital to be a specialized hospital for pediatrics covering neighboring provinces. Accordance with the independence of the hospital function, the facility extension will be completed at the end of 2010 without enough medical equipment supply. The hospital has an experience of the technical cooperation by Finland by 2004, so that the hospital is aware of technical rationale. Still morbidity profile is mainly respiratory diseases, but recently congenital defect cases such as septic defect are increasing and the hospital needs to cure the pediatric cardio-surgery time by time. Traffic accidents are also main reason for operation of encephalorrhagy, 7-10 cases per month in average. Thus, the hospital has to cover from neonatal care for abnormality to pediatric surgery such as typical ileus and fracture, with neurology and rehabilitation areas.

5.3.6 C Da Nang Central General Hospital

Da Nang is one of five centrally governed cities and listed as a first class city. C Da Nang Central General Hospital was stated as special central hospital for government officials exclusively, but gradually opened to the public patients now. This is an opportunity for citizens who can receive the benefit of sophisticated technology within the health insurance. Technically the hospital has advantage for some specialties, such as oncology, cardio- and neuro-surgery, and invasive diagnosis, due to VIP care, and MOH expects to advance existing technology. The hospital has a several technical cooperation with European countries and universities, so that the management awareness is high. The hospital has a potential coming to the forefront in Central Region beside Hue Central General Hospital.

5.3.7 Binh Dinh Provincial General Hospital

Binh Dinh Province is located in South Central Coast region and about 100km away from both city HCM and Hue. Binh Dinh Provincial General Hospital is also stated as regional hospital, so that covering area is becoming not only Binh Dinh Province. Mortality and morbidity in the province is head injury caused by traffic accident, and cardiologic and urologic symptoms are getting increasing remarkably besides infectious diseases. As the regional hospital, the function of hospital is getting important to treat severe and intractable diseases. Therefore the hospital is expected to strengthen the widely technological field; several surgical field, diagnosis areas, many specialties, accordance with the expansion plan of facility.

5.3.8 Lam Dong Provincial General Hospital

Lam Dong Province is located in Central Highlands Region, and relatively near from HCM, however, surrounded by poor highlands provinces, and the only province which does not share its western border with Cambodia. Accordingly, Lam Dong Provincial General Hospital has a role to be referred patients from neighboring provinces. The capital, Da Lat is historically developed as a French resort area, so that the hospital has a potential for geographical accessibility even in highland, and has received several European technical cooperation before. The hospital is renovating to expand the facility mainly technological functions. Construction will be finished in 2010. Before renovation, the hospital was flat-complex structure, therefore there was a difficulty to transport patients for examination and treatment. New structure is modern central system by gathering operation theater, ICU, laboratories and outpatient departments (OPDs). Procurement of medical equipment was out of scope of renovation, so that the new central functions including OPDs should be strengthen with modern adequate technologies.

5.3.9 Tay Ninh Provincial General Hospital

Tay Ninh province is located the Northeast-south Region, and the boarder with Cambodia. Politically to maintain amicable relations with neighboring country, Tay Ninh Provincial General Hospital accepts the Cambodian patients who cross border. Generally the province itself is low income status, and the hospital has a mission to provide a moderate health services for existing problems. Disease profiles in this province are double structure of communicable and non-communicable diseases, and the hospital is expected to perform the completed care to reduce the burden of patients for transportation far. For this, the hospital gives priority on the diagnosis field, at least to diagnose precisely to define the problem.

5.3.10 Ninh Thuan Provincial General Hospital

Ninh Thuan Province is located in the South-East Region, the total population is the smallest

among selected provinces. Currently, main mortality and morbidity are trauma by traffic accidents and infectious diseases, so that surgery can be a demand. However, Ninh Thuan Province is planning to build the nuclear power station. Therefore Ninh Thuan Province prospects the future disease profile change and asks for Ninh Thuan Provincial General Hospital to correspond the occupational hazards in the worst case. Thus, the hospital is required current situation and future countermeasure, especially accurate diagnosis technology.

5.4 Scope of Phase II Project and expected role of the Vietnamese side

In the Phase II Project implementation, an effort of the Vietnamese side in line with the Health Sector Master Plan (2010-2020) by the Government Decree No.153 is crucial for achieving the project objectives. It is also requisite to coordinate supporting activities of donors, which mainly focusing on improvement of health facilities in district hospitals and health centers, because better donors' coordination will produce greater synergy effect on improvement of the regional healthcare system. They are also expected to coordinate with other medical facilities for patients' referral service and the training of the medical staff in their province, as the basic strategy of hospital improvement. On top of these, there are more rooms that the hospital can do for their service improvement, coordinating and cooperating with DOH, PPC and others.

5.4.1 Technical aspect

The technical sustainability of the hospital is largely subject to 2 factors; namely human resource and equipment. Therefore important to confirm among MOH, DOH and the hospital to confirm the existence or deployment of new staff necessary the implementation of the Project and sustain the enhanced capacity of the hospital.

5.4.2 Institutional aspect

The current hospital fee schedule is planned to be reviewed based on the quality and performance. To prepare for such price system change, it is recommended that the hospital accounting system should be reviewed and modernized to make the accounting clear to show the costs and expenses for each service or performance at each department, all of which will contribute to the improvement of financial management.

5.4.3 Financial aspect

The newly procured equipment will need additional budget for operation and maintenance. Generally, about 10% of the total cost for procurement of equipment will be additionally required for its operation and maintenance.

Basically a hospital as a management agency is responsible for securing a sufficient budget for all the expenses of hospital activities, because hospitals are expected to be autonomous by

the Government Decree No.43 issued in April 2006. As for hospitals' income, there are some factors beyond hospital's control, such as hospital fee income and insurance payment income, because the fee schedules and insurance coverage are subject to the efforts of the Government and Peoples' Committee. To guarantee the efforts of both Vietnam side and JICA, it is expected that MOH through DOH together with PPC make the official commitment for financial support of securing the budget for operation and maintenance of the hospital, as well as the counterpart fund for the implementation of the Project, as the Phase II Project will be implemented with the JICA ODA Loan.

6. Formulation of Phase II Project

6.1 Examination of target activities to be improved

As the Project adopts 3 approaches of i) to reinforce the basic technologies, ii) to introduce new technologies and iii) to improve the hospital management including IT technology and environment management, the priority targets of hospital activities were examined ahead of identification of project component. In this regard, priority target areas were divided into four categories in this section: medical care (basic and new technologies), hospital management, information technology and environmental consideration.

6.1.1 Medical care

The crucial area for improvement of the medical care is prioritized as shown below.

Overcoming weakness common to the selected hospitals (basic technologies)

- To strengthen central diagnosis areas,
- To strengthen emergency care service,
- To establish infection control in hospital as a basis for advanced medical care,

Assuring hospitals' roles in the regional health system

- To establish or to strengthen a specific department, especially oncology department, so as to meet the change of disease structure from the med- and long-term standpoint,
- To extend and to strengthen specific medical care service as a specialized hospital such as obstetric hospital and pediatric hospital,

Overcoming specific shortcomings

- To reinforce medical care service for any disease specific to each hospital, depending on the need of patients, such as traffic accident, local chronic disease, etc.

6.1.2 Hospital management

A hospital should be managed financially and clinically in sound and safe manners, in

everyday activities based on its long-term future vision. Therefore, it is one of the most crucial issues to establish an effective and efficient hospital management system, which includes a wide variety of activities in a hospital. From the clinical administration point of view, various committees for infectious disease control, patients' amenity and ethics should be organized and functionally operated. IT application to the hospital management is also to promote the effective management as described in the next section. Good practices of all of these can be learned through the overseas trainings including Japan. The training specialized on the hospital management will be useful and efficient for improvement of clinical management for the patients and better administration for the hospital management board. The plan will be designed to suit these needs.

6.1.3 Information technology

MOH recognizes the importance of IT development and encourages hospitals to introduce and develop IT system in hospitals and even connecting network among upper level hospitals and lower level hospitals for training purpose.

Although there is no explicit regulation or rules for such a development, IT development should be promoted by utilizing the existing resources without waiting for enforcement of regulatory framework, with a view to realize the maximum benefit for the hospital administration improvement. Particularly, application to cost accounting and patients' record will help promoting the financial sound management and better quality of hospital services for the patients. The training courses will be designed to include these practices in Vietnam.

6.1.4 Environmental consideration

The points for improvement of environmental consideration for each hospital, comprising waste water treatment and solid waste treatment, are listed in the Chapter3. For prevention of environmental pollution, investment on additional facilities and/or equipment as well as human resource development for environmental management is needed.

Since the investment on such facility construction and/or procurement of equipment is planned to be financed by the GoV, relevant training are also to be conducted by the Vietnamese side. Therefore the Phase II Project will not cover training courses on waste management.

Meanwhile, reinforcement of infection control, which relates closely to waste water treatment and solid waste treatment, is to be an important component of the Phase II Project, as shown before.

6.2 Identification of Project component

The project components, consisting of procurement of equipment and provision of training course were identified for each target hospital, taking into consideration the lessons learnt from

the Phase I Project.

6.2.1 Selection of equipments to be procured

Selection of equipments was made through the following procedures. First, the requirements of equipments prepared by 10 hospitals were examined from a viewpoint of compatibility with the basic policy of hospital improvement shown in Section 5. Second, equipment was evaluated based on the following criteria:

- Purpose of Use / Need,
- Frequency of use supposed,
- Availability of staff with required skills and experience,
- Training plan for doctors/staffs for utilizing of the equipment,
- Operation and maintenance cost,

(1) Major common equipment

Name of equipment	Note
Ventilator	Essential equipment for ICU, emergency dept. and post operation room
Patient monitor	Essential equipment for ICU, emergency dept. and post operation room
Black and white ultrasound apparatus	Essential equipment for ICU, emergency dept. and obstetric dept.
X-ray mammography	Essential equipment for obstetric dept.
Anesthesia apparatus	Essential equipment for operating theater
Infant incubator	Essential equipment for NICU
Automatic biochemistry analyzer	Essential equipment for biochemistry dept.
Automatic blood cell counter	Essential equipment for hematology dept.
ELISA system	Equipment for microbiology for identification of HIV
Washing machine	Essential equipment for infection control dept.
Autoclave	Essential equipment for infection control dept.

(2) Major special equipment

Name of equipment	Name of hospital(s)	Note
Phacoemulsification system	Son Tay Inter-District General Hospital, Nghe An Provincial Pediatric Hospital, Lam Dong Provincial General Hospital, Tay Ninh Provincial General Hospital, Ninh Thuan Provincial General Hospital	Equipment for treatment of cataract
Lithotripter system	Bac Giang Provincial General Hospital, Son Tay Inter-District General Hospital, Binh Dinh Provincial General Hospital	Equipment for treatment of renal calculus The number of calculus disease patients are increasing in Vietnam, because of bad quality of drinking water
CT scanner	Nghe An Provincial Pediatric Hospital, Lam Dong Provincial General Hospital, Ninh Thuan Provincial General Hospital	Main object of procurement is for using diagnosis of traffic accidents patients
MRI	Tay Ninh Provincial General Hospital	Main object of procurement is for using diagnosis of spiral, brain cancer
PET-CT	C Da Nang Central General Hospital, Binh Dinh Provincial General Hospital	Equipment is for oncology department; and this equipment is selected based on MOH policy (Improvement of oncology dept.)

Gamma knife	C Da Nang Central General Hospital	Equipment is for oncology department; and this equipment is selected based on MOH policy (Improvement of oncology dept.)
CRRT	C Da Nang Central General Hospital, Binh Dinh Provincial General Hospital, Lam Dong Provincial General Hospital	Continuous Renal Replacement Therapy (CRRT) Equipment for treatment of renal disease The number of renal disease patients are increasing in Vietnam
ERCP	C Da Nang Central General Hospital, Lam Dong Provincial General Hospital, Ninh Thuan Provincial General Hospital	Endoscopic Retrograde Cholangio Pancreatography (ERCP) Equipment for diagnosis of liver, cholangio and pancreas disease patients
Cobalt machine	Lam Dong Provincial General Hospital	Equipment for using radiation treatment of oncology, and this equipment was selected based on MOH policy (Improvement of oncology dept.)

6.2.2 Identification of training courses to be conducted

The scope of training was planned mainly on the basis of MOH policy and the assessment of capability and needs of hospitals, also taking into account the hospital's plan for improvement.

This methodology was adopted based on lessons learnt from the Phase I Project, in which the longer and the more number of trainees should have been done. In fact, limited scope of training was implemented in Phase I Project, as only the hospital's request was considered. Shortly, approach to design a training course was modified from bottom-up to top-down.

The training courses planned comprise the followings:

Training courses for improvement of medical care

- To strengthen basic technologies in central diagnosis areas such as Pathology, Microbiology, Hematology, endoscopy and image diagnosis,
- To strengthen Technologies for emergency care service, such as ICU, NICU, use of ventilator and hemodialysis,
- To establish and/or strengthen infection control,
- To acquire techniques for using newly procured medical equipments, such as laparoscopy, PET CT, Gamma knife, Nuclear, cardio-vascular and stent placement,
- To overcome weakness specific to the hospitals found out by the Consultants, including general surgery, plaster surgery, ophthalmology, ENT, odonto-stomatology, infertility and so on.

Training course for improvement of hospital management and others

- To improve hospital management comprising the 2 courses shown below.
 - i) Training of hospital management staff at hospitals with advanced management system.

After learning the importance of functional management system, trainees are expected to take initiatives in restructuring their own hospitals. Training will cover financial management, human resource management, clinical management including the committee discussion and decision making system for infection control, patients

amenity and ethics, etc.

ii) Training for safe utilization and maintenance of medical equipment

- To acquire knowledge and practical techniques on information technology including LAN, particularly for connecting multiple departments for smooth accounting and comprehensive patient record keeping

39 training courses were planned under the project. Most of them are to be conducted in Vietnam, utilizing the local resources such as central hospitals, and medical universities. Some courses such as hospital management, infection control, radio therapy, pathology, etc. are to be conducted in other country including Japan.

(1) Major common training course

Training course	Training place
ICU	Vietnam (Training institute ⁴ , on-site training at target hospital)
Pathology	Vietnam (Training institute, on-site training at target hospital), Japan
Microbiology	Vietnam (Training institute)
Ventilation	Vietnam (Training institute, on-site training at target hospital)
Infection control	Vietnam (Training institute, on-site training at target hospital), Japan
Infectious disease	Vietnam (Training institute)
Hospital management	Vietnam (Training institute, on-site training at target hospital), Japan
IT	Vietnam (Training institute, on-site training at target hospital)
Maintenance of medical equipment	Vietnam (Training institute, on-site training at target hospital)

(2) Major special training course

Training course	Name of hospital(s)	Training place
Cancer surgery	Bac Giang Provincial General Hospital, C Da Nang Central General Hospital, Tay Ninh Provincial General Hospital, Ninh Thuan Provincial General Hospital	Vietnam (Training institute)
Cancer diagnosis and treatment	Bac Giang Provincial General Hospital, C Da Nang Central General Hospital, Tay Ninh Provincial General Hospital, Ninh Thuan Provincial General Hospital	Vietnam (Training institute)
Radio therapy	Bac Giang Provincial General Hospital, C Da Nang Central General Hospital, Binh Dinh Provincial General Hospital, Lam Dong Provincial General Hospital, Ninh Thuan Provincial General Hospital	Vietnam (Training institute, on-site training at target hospital), Japan
Cardiovascular diagnosis and treatment	Son Tay Inter-District General Hospital, C Da Nang Central General Hospital, Binh Dinh Provincial General Hospital, Tay Ninh Provincial General Hospital	Vietnam (Training institute)
Nutrition	Thai Binh Provincial Pediatric Hospital, Nghe An Provincial Pediatric Hospital	Vietnam (Training institute, on-site training at target hospital)
PET, gamma knife	C Da Nang Central General Hospital, Binh Dinh Provincial General Hospital	Vietnam (Training institute)
Neurosurgery	C Da Nang Central General Hospital	Vietnam (Training institute)
Pregnancies monitoring	Nam Dinh Provincial Obstetric Hospital	Vietnam (Training institute, on-site training at target hospital)

⁴ Training institutes includes the central hospitals, medical universities, upper level hospitals, etc.

7. Cost estimation for Phase II Project

The project cost includes; procurement of equipment, training and capacity building, consulting services, price escalation, physical contingency, taxes and duties, interest during construction and other charges.

As for procurement of equipment, the cost estimate includes the costs for manufacturing, transportation to project sites at ten target hospitals, installation, start-up and training for operation and maintenance for particular equipment which require such training, and spare parts for 2 years operation.

The total project cost is as shown below.

No	Item	Foreign Currency (a)	Local Currency (b)	
		JPY	VND	Equivalent JPY
1	Equipment procurement	6,594,000,000		
2	Training	65,000,000	72,000,000,000	331,920,000
3	Price escalation for 1-2 above	448,000,000	32,104,000,000	147,999,440
4	Consulting service	209,375,000	13,327,000,000	61,437,470
5	Price escalation for 4 above	12,000,000	5,083,000,000	23,432,630
Sub Total		7,328,375,000	122,514,000,000	564,789,540
6	Physical contingency	366,418,750	6,125,700,000	28,239,477
Grand Total		7,694,793,750	128,639,700,000	593,029,017
Grand Total: (a)+(b)				¥8,287,822,767

Note: Exchange rate: 85.5 JPY/1USD, 0.00461 JPY/1VND

Price Escalation: FC (1.8%), LC (10.5%)

Physical Contingency: 5%

8. Financial and Economic Analysis of Phase II Project

Viability of the Phase II Project is analyzed financially and economically. The first part of this section provides a financial analysis of the project. This is followed by an economic analysis which focuses on reduction in opportunity cost among patients and their family, excluding other potential benefits which are difficult to evaluate in monetary terms.

Financial Internal Rate of Return (FIRR) and Net Present Value (NPV)

Investments in ten selected hospitals, consisting largely of procurement of medical equipment and training of medical staff, are expected to produce a total FIRR of 13.5%. A thirty-year NPV estimate of project investments is VnD814 billion or US\$43.9 million. The value of future returns from the project is worth that much now, and given the proposed costs, the proposed

investment presents a viable option financially.

Table 10 shows the FIRR for the ten target hospitals. Because the government expenditure is relatively small at the Binh Dinh Provincial General Hospital and the Bac Giang Provincial General Hospital, FIRRs for these 2 hospitals are 2.8% and 5.5% respectively, which are lower than Vietnamese commercial bank's long-term loan rate of 12.0%. However, these are higher than planned loan interest rate of 1.3% for the loan.

Table 13: FIRR and NPV for the Ten Target Hospitals (Unit: %, billion VND)

	Bac Giang PGH	Son Tay IDGH	Thai Binh PPH	Nam Dinh POH	Nghe An PPH
FIRR	5.5	20.0	36.0	7.5	30.1
NPV	-88	144	261	-26	373
	C Da Nang CGH	Binh Dinh PGH	Lam Dong PGH	Tay Ninh PGH	Ninh Thuan PGH
FIRR	14.7	2.8	13.9	19.1	13.8
NPV	164	-343	82	152	94

Economic Internal Rate of Return (EIRR)

As a result of cost benefit analysis, the total EIRR of the project is calculated to be 6.1%. This figure is not very high compared to the opportunity cost for the social capital, as it is usually 10% to 15% in developing countries. However, as mentioned previously, considering the benefits taken in this analysis is only a fraction of all the economical and social benefits, this project is deemed to be economically viable. In addition, it also implicates the effects of the management of selected hospitals are not only to be limited to the improved referral system, but also to lead to improved medical services at national level and better quality of life for the population.

Table 11 shows the EIRRs for the ten target hospitals. As for nine hospitals excluding C Da Nang Central General Hospital, positive EIRRs are calculated with a large distribution. As for C Da Nang Central General Hospital, the relatively small numbers of both inpatients and referrals to upper level hospitals may lead the EIRR into negative in this analysis where some selected benefits are taken into account.

Table 14: EIRR for the Ten Target Hospitals (Unit: %)

	Bac Giang PGH	Son Tay IDGH	Thai Binh PPH	Nam Dinh POH	Nghe An PPH
EIRR	12.6	22.3	27.8	1.4	4.7
	C Da Nang CGH	Binh Dinh PGH	Lam Dong PGH	Tay Ninh PGH	Ninh Thuan PGH
EIRR	-16.8	0.5	19.1	5.8	10.5

9. Implementation plan

9.1 Project implementation scheme

The project implementation will involve Ministry of Health, Department of Health and People's Committee of the ten provinces, ten target hospitals and Consultants, and each hospital improvement under the Phase II Project will be implemented in accordance with the framework designated by the Decree on Issuance of Regulation on Management and Utilization of Official Development Assistance, No.131, for the project implementation with the ODA funds. When the function of each institution is defined for the implementation of the project, following factors of each institution and lessons learnt from the Phase I Project should be taken into account.

9.1.1 Ministry of Health

MOH will be responsible for coordinating with the Ministry of Finance, which will sign the Loan Agreement with JICA, and will be responsible for allocating the budget for repayment of the loan.

In the Phase I Project, CPMU was established under the Department of Planning and Finance of MOH with the function of overall project monitoring and contracting with the Consultants. Equipment procurement by ICB and LCB and medical staff training was contracted by each 3 hospital. However, the equipment procurement procedures were not familiar to each hospital, so that CPMU assisted each hospital by giving advices and suggestions, although the CPMU's capability in administrative work for project implementation with the is not sufficient, mainly due to lack of skilled administrative staffs with experience of JICA ODA Loan. Information sharing mechanism was also weak for timely and mutual communication on the latest situation of the hospitals and project progress.

In the Phase II Project implementation, therefore, it is recommended that the CPMU should be reinforced with more qualified staff in addition to the core staff experienced in Phase I Project. Based on the experiences gained through Phase I Project, CPMU is recommended to monitor the project progress and manage the equipment procurement through ICB. The staffing of CPMU is temporarily recommended as below, and further discussions should be done in MOH for smooth implementation of the Project in accordance with the JICA Guidelines and based on the experiences of Phase I Project.

Table 15: Recommended Staffing of CPMU (temporary)

Phase II Project			No. in Phase I Project
Position	No.	Duty	
Director	1	To assume overall management and make final decisions	1
Vice Director	1	To assist the Director	1
Accounting staff	3	To check the statement for payments	2
Medical equipment specialist	2	To check the equipment specifications	-
Procurement specialist	2	To supervise and advice on equipment procurement	-
Training specialist:	1	To supervise and monitor the trainings	1
Monitoring and evaluation specialist	2	To monitor and evaluate the project progress based on the progress report submitted by HPIU and Consultants	1
Secretary	1	To support the CPMU staff in administration	1

For the equipment procurement through ICB, CPMU shall establish a Procurement Committee with the chairperson of CPMU Director and representatives of target hospitals. CPMU will avail the technical service of Consultants in equipment procurement. CPMU shall also act as a window for submitting official documents including technical report, request for concurrence and disbursement for payment, to the other Ministries and JICA.

9.1.2 Department of Health of each province

Involvement of Department of Health (DOH) at each province is important so as to assist the hospitals at ten provinces. DOH has an authority to approve the mid-and-long term improvement plan of hospital, and requests to the Provincial People's Committee the counterpart fund for the project implementation and operational fund for the hospital operation. Besides, efforts of DOH to Peoples' Committee for allocating the necessary budget for HCFP and other insurance coverage expansion are encouraged. They shall commit themselves together with Provincial Peoples' Committee to secure the budget for hospital operation to cover the expenses which will not be compensated by insurance payment and hospital fee. Supporting the province with PPC, they are evaluating the performance of each hospital every year.

9.1.3 Provincial People's Committee

Provincial People's Committee has the authority to approve the long-term and annual plans of provincial hospitals in principle. Therefore involvement of Provincial People's Committee is important for the operation of hospital in terms of allocation of necessary project counterpart fund and hospitals operational budget. The priority setting on the health sector by Provincial Peoples' Committee will affect the budget allocation to the hospital and to the health insurance coverage.

9.1.4 Ten target hospitals

Ten target hospitals should be the substantial body for project implementation with necessary technical and administrative staff. The team of hospital project implementation unit (HPIU) will be assisted by Consultants.

In Phase I Project, hospitals employed short-term experts from outside, in the fields of medical equipment, financing, building and local government administration. HPIUs in the Phase II are recommended to formulate the team including the experts well in advance of starting the project.

The HPIU shall implement the project by contracting with the local equipment suppliers through the LCB, domestic training institutions and other necessary services required for the project implementation. HPIU shall prepare and send the monthly progress report to CPMU, so that CPMU be able to compile all reports and submit them to other Ministries and JICA.

9.2 Overall project implementation plan

The plans for procurement of consulting service, equipment and training service for the Phase II project are described below.

9.2.1 Equipment procurement plan

The equipment will be procured through International Competitive Bidding (ICB) and Local Competitive Bidding (LCB) in accordance with the JICA Procurement Guidelines. It is recommended that the ICB shall be managed by CPMU and LCB shall be managed by each HPIU. CPMU together with HPIU and Consultants will review the equipment list and packaging plan, when the field survey by Consultants be completed. Any necessary adjustment on the equipment list and packaging plan can be made, if necessary, to meet any changes of requirements, through the discussions among CPMU, HPIU and the Consultants.

9.2.2 Training service procurement plan

The training comprises of domestic and overseas training including Japan. The domestic training will benefit to the larger impact with the minimal cost, for those technology available at the domestic training institutions. Highly advanced technologies, those applications in Vietnam is still limited to specialized treatments, and many of modern practices of basic techniques are only available at institutions abroad including Japan.

For the domestic training, it is recommended to conclude separate contracts between each hospital and the training institutions based on the number of trainees and duration of training courses planned by each hospital. Hospitals should be responsible for monitoring the progress of training. The overseas training including Japan should be covered by the consulting service contract with the international consultants, as the contracting for overseas training requires

knowledge and experience of international transactions. The training abroad shall be monitored by the consultants.

9.2.3 Consulting service procurement plan

The consulting service will be provided in principle by the international consultants in association with the local consultants.

Table 16: Overall Schedule (draft)

Year	1	2	3	4	5
Loan Agreement	▲				
Consultant Selection (10 months)	■				
Consulting Service Contract		▲			
Review of F/S and Detailed Design (5 months)		■			
Tender Document Preparation (5 months)		■			
Bidding Bid Evaluation, Equipment Procurement Contract (one year after Consultant Selection for first package)			■	■	■
Equipment Delivery and Installation (2years)				■	■
Preparation of Training (6 months)		■			
Training in Vietnam (3 years)			■	■	■
Training in Japan (4 months)			■	■	■
Mid-Term Review				■	

9.3 Monitoring and evaluation of the project

9.3.1 Indicators for measuring efficiency of operation

The objective of Phase II Project is to reinforce the provincial hospital to fulfill the local needs for health service in the region, thereby contributing to the optimization of regional health system.

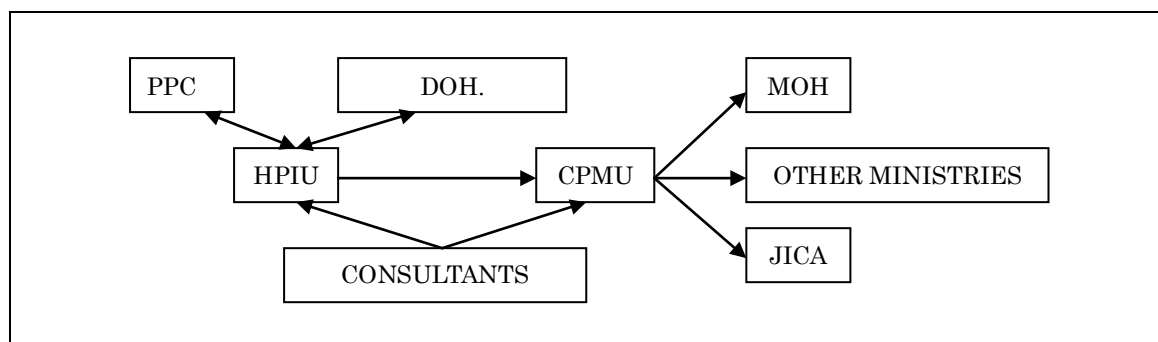
Therefore the evaluation indicators should be set to measure the direct results of project inputs/activities. Recommended evaluation criteria are;(i) the service of operation and intensive/emergency care is improved, (ii) sterilization service is improved, (iii) financial sustainability is improved, and (iv) equipment maintenance capability is strengthened.

Table 17: Project Design of the Phase II Project

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
(Overall Goal) Improve the medical service at provincial hospitals	- Reduce average hospital mortality by 10% - Reduce average length of stay by 20% - Reduce average number of patients to be referred to higher level hospital by 20%	- MOH service statistics - Hospital statistics	Hospital budget is continuously increased
(Output) 1. The service of operation and intensive/ emergency care is improved.	- Decrease average number of cases of “non-identified cause of death”, by 10%	- Hospital statistics	Drastic change of disease structure does not occur.
2. Sterilization service is improved.	- Reduce the average number of case of “nosocomial infection” by 10%	- Hospital statistics	Emerging infectious disease will not affect.
3. Financial sustainability is improved.	- Increase of annual hospital income in terms of insurance payment and hospitals fee by 20%	- Hospital statistics	Economic condition in the provinces will not deteriorate
4. Equipment maintenance capability is strengthened.	- Necessary maintenance manuals and records are maintained at maintenance department and clinical department	- Hospital statistics	Policies of MOH, DOH and PPC will not change.

9.3.2 Mechanism of project monitoring, assessment and reporting

HPIU as the core project implementing body will monitor the project implementation, with the assistance of Consultants, and prepare and submit the monthly report to CPMU. When initiating the project implementation, HPIU shall review the project components in terms of possibility of satisfying the local needs for the service, and identify the baseline values of indicators for project achievements. Such data will be collected and assessed for the changes if necessary on the project components, in the mid-term review and evaluation at the end of the project.



10. Recommendation

Below is the recommendation of Consultants addressed to MOH, Provincial DOH, PPC and/or the target hospitals, as well as to ODA policy of JICA to Vietnam, where the text describes. Some of the recommendations are within the reachable range which can be initiated promptly even before the launch of the Project. Some needs a mid-and-long term planning, even including the adjustment of the plan. Consultants expect MOH, DOH, PPC and the hospitals give the careful attention to the recommendations and even to start the discussions for further improvement of healthcare services in Vietnam.

10.1 Recommendation for improvement of hospital management

The recommendation for hospital management improvement is on the (1) establishment of future vision and (2) hospital management systems. The economical and health situation of Vietnam has been changing dramatically. In such situation, the improvement of provincial hospitals must be considered from not only their current situation of the region but also the concrete image of the hospital. The improvement plan should always be built on the ground of hospital management including finance, human resources, ethics and future plan.

10.1.1 Establishment of future vision of hospital

Each hospital should establish its future vision, based on the analysis of current situation and future demand forecast, through the discussion with MOH, DOH and PPC. Such vision should be shared among the hospital staff. Currently, most provincial, district and regional hospitals seem, however, to try to upgrade their technical level without clear future vision., though each hospital ought to have functions that are expected to have at present, in accordance with the localities and the policies of MOH, DOH and PPC.

For example, hospitals tend to rely on sophisticated equipment to raise their technical capacity, and not to prioritize the service fundamentally essential for the level up of hospitals such as infectious disease and emergency service..

Socio-economic development in regions and aging of population also make it necessary to diversify medical services at provincial level. Such local characteristics, together with the policies of government and PPC, should be taken into account for elaboration of the mid-and-long term vision of the hospital.

While this recommendation is addressed to all concerned parties about hospital management, it is expected that the hospital itself should formulate a draft mid-and-long term vision and finalize it through discussions with MOH, DOH and PPC.

10.1.2 Establishment of hospital management systems

Based on the mid-and-long term vision of the hospitals, functional management systems should be developed so as to bridge the gap between the current situation and the future vision.

For instance, nosocomial infection control is one of the common issues among hospitals. Some hospitals have established the committees in order to tackle this issue but many are not effectively functioning, due to lack of regular practice of periodical monitoring, supervision on nosocomial infection control and proper guidance on the use of strong medicine such as antibiotic.

New medical technologies are often introduced to the hospital with the initiative of leading medical doctors from their own interest. Before introducing new technologies, the negative effects on patients and violation of patients' fundamental rights should be carefully examined and discussed by the ethical committee or other suitable body. However, many of the hospitals have not established effective ethical committee that should have representatives from third parties. The enhancement of MOH guidance on establishment of this committee is expected.

One of other important issues is the improvement of amenity for patients and their families. Again, most hospitals do not established effective committee to discuss this issue. It is effective and efficient to establish a committee including nurses in addition to doctors.

For all of these committees for hospital management, active participation and guidance of MOH is crucial, in parallel with the PPC's support for securing sufficient budget for operation and management of committees.

In the short term, it is recommended that the ten target hospitals should establish functional committees for hospital management. Training courses related to hospital management planned in Phase II Project will give the knowledge and experiences to the ten target hospitals, so that they are expected to initiate the required activities immediately after the training and to improve their service with new equipment technologies under the Phase II Project.

10.1.3 Financial management by each hospital

Hospitals generally rely on three funding sources; government budget including from PPC, health insurance and user fees. Among these three sources, standard unit price is set for health insurance and user fees, and the hospital efforts are hardly influencing to the income of insurance and user fee. However, it is important to estimate hospital expenses and possible income, based on the mid-and-long term vision mentioned above. Particularly, the local characteristics such as the share of minority population and the poverty, and the economic growth rate are factors to be statistically counted in the future hospital income projection.

Along with the projection of future expenses and income, the past financial conditions should be analyzed to study how to compensate the expenses to be accrued in the future.

Through the years, hospitals heavily rely on government budget including the one from PPC

as the hospital's efforts are not reflected in their financial improvement. Therefore there should be a system for income retention within the hospitals. Hospitals also should endeavor to improve their capabilities, and the hospital's efforts should be evaluated on the basis of attainment of the target. With this system, the hospitals are encouraged to improve the service and financial conditions. On the contrary, it could be possible to give impose a penalty in case of failure in achieving the target. MOH's support for developing the systems is essential.

10.2 Recommendation for introduction of information technology in hospital

At present the introduction of IT systems and LAN in the hospital is strongly encouraged by MOH. Introduction of such IT technologies will require the experienced engineers and technicians for hardware and software maintenance. It is recommended to train those staff at each of the hospitals using the computers available, and to start using the MOH software, "Medisoft". Any financial support to the hospital for IT development by MOH or PPC is also suggested.

10.3 Recommendation for improvement of environmental management

The needs for investment on facility and equipment for environment management varies by hospital. The development and/or improvement of such facility and equipment will be implemented with the budget of the GoV. It is recommended that the training should be implemented in line with, the facility and equipment improvement. Particularly, training courses for the staff of infection control department should be enhanced because most of them have a limited chance to receive training only once or twice a year and such training does not cost much.

