MINISTRY OF HEALTH
THE SOCIALIST REPUBLIC OF VIET NAM

PREPARATOR SURVEY (BASIC DESIGN) REPORT
ON
THE PROJECT FOR IMPROVEMNT OF EQUIPMENT
IN THE NATIONAL HOSPITAL FOR
OBSTETRICS AND GYNECOLOGY
IN
THE SOCIALIST REPUBLIC OF VIET NAM

SEPTEMBER, 2009

JAPAN INTERNATIONAL COOPERATION AGENCY

INTERNATIONAL TOTAL ENGINEERING CORPORATION

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PREFACE

In response to a request from the Government of the Socialist Republic of Viet Nam, the Government of Japan decided to conduct a preparatory survey (basic design) on the Project for Improvement of Equipment in the National Hospital for Obstetrics and Gynecology in the Socialist Republic of Viet Nam and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Viet Nam a survey team from 16 March to 10 April 2009.

The team held discussions with the officials concerned of the Government of the Socialist Republic of Viet Nam, and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to Viet Nam in order to discuss a draft basic design, and as this result, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Socialist Republic of Viet Nam for their close cooperation extended to the teams.

September, 2009

Yoshihisa Ueda
Vice President
Japan International Cooperation Agency

September, 2009

Letter of Transmittal

We are pleased to submit to you the preparatory survey (basic design) report on the Project for Improvement of Equipment in the National Hospital for Obstetrics and Gynecology in the Socialist Republic of Viet Nam.

This survey was conducted by International Total Engineering Corporation, under a contract to JICA, during the period from February, 2009 to September, 2009. In conducting the survey, we have examined the feasibility and rationale of the project with due consideration to the present situation of the Socialist Republic of Viet Nam and formulated the most appropriate preparatory survey (basic design) for the project under Japan's Grant Aid scheme.

Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,

Shigehito Akagi
Project Manager,
Preparatory Survey (basic design) team on the Project for Improvement of Equipment in the National Hospital for Obstetrics and Gynecology in the Socialist Republic of Viet Nam
International Total Engineering Corporation

Summary

Summary

1. Outline of the country

The Socialist Republic of Viet Nam (hereinafter referred to as “Viet Nam”) is situated on the eastern coast of Indochina, sharing borders with the People’s Republic of China in the north and Laos and Cambodia in the west. Its overall territory is 332 thousand square kilometers and the total population was approximately 85.2 million in 2007. The population in capital Hanoi City in the same year was approximately 3.4 million. On May 29, 2008, the National Assembly of Viet Nam voted for Hanoi’s expansion plan, which became effective on following August 1. In accordance with the plan, Hanoi developed into a large city with an area of app. 3,345 square kilometers and a population of app. 6.2 million by incorporating neighboring communities.

Viet Nam drew up in March 2001 a 10-year healthcare sector plan. The plan sets forth an overall goal to “realize human development through reducing morbidity rates and improving average life expectancy, so as to create safe society where all people can benefit from primary care, have access to quality medical care, and develop both physically and mentally.” To achieve this goal, it hammers out eleven measures, including the “development and employment of human resources” aimed to promote education and training activities to healthcare providers and the “enhancement of preventive healthcare and health and sanitation educational activities” to strengthen reproductive health. In the “Hospital Network Development Plan” formulated in 2003, the government launched policies to construct hospital facilities nationwide, in order to provide all the nationals with quality healthcare services in accordance with the needs of individual communities.

To strengthen reproductive health, the National Reproductive Health Strategy (2000-2010) holds up a goal to "improve the maternal and child health level by decreasing the mortality rates of pregnant and parturient women, prenatal babies, and infants, and others.” More specifically, in line with Direction Office for Healthcare Activities (DOHA) and Article 1816 issued by the Ministry of Health (hereinafter referred to as the “MOH”,) upper-level medical institutions have been providing education and training to lower-level medical institutions. Moreover, the country has been carrying out projects to refurbish provincial and county hospitals with assistance provided by the Asian Development Bank (ADB).

2. Background and overview of the Project

The population of 10-19 aged females in Viet Nam accounts for 20.89% of the total Vietnamese female population, according to a United Nations Population Fund (UNFPA) report issued in 2007. This suggests that the number of births and demand for gynecology will continue to rise.

Nevertheless, there are not enough medical facilities for providing gynecological healthcare even today. It is also called for to improve examination levels of lower-level medical institutions, too.

The MOH formulated a “Hospital Network Development Plan” in 2003, in which the ministry launched policies to develop hospital facilities nationwide necessary for making quality healthcare

services that respond to the need in individual communities available. The lack of facilities has been remedied step by step through plans to redevelop provincial and county hospitals under funds of Viet Nam's own budget as well as assistance from ADB.

On the other hand, the medical level at provincial and county hospitals has been elevated by means of technical guidance by upper-level hospitals for lower-level hospitals in accordance with DOHA and Article 1816.

National Hospital for Obstetrics and Gynecology (NHOG) is positioned as the top referral hospital in obstetrics and gynecology, and strives to live up with its role by providing prenatal diagnosis, fertility treatment, and other advanced medicine. At the same time, it has inevitably to handle low-risk deliveries in response to the need for obstetrics in Hanoi City and its suburbs. However, NHOG's facility scale is not sufficient for satisfying patients' need for obstetrics and gynecology examinations. Moreover, it cannot provide sufficient services due to the superannuated facilities and equipment.

Under such circumstances, NHOG has embarked on rehabilitating severely-aged Building B and C to accommodate more operation theaters and delivery rooms, while at the same time the Government of Viet Nam requested the Government of Japan to replace the decrepit equipment necessary for obstetrics and gynecology examinations and the education and training equipment vital for raising the medical technology level in obstetrics and gynecology of the country.

3. Outline of the Study and Contents of the Project

In response to the above-described request, the Government of Japan decided to conduct a Preparatory Survey (Basic Design), and accordingly Japan International Cooperation Agency (JICA) dispatched a Preparatory Survey Team to Viet Nam for 26 days from March 16 to April 10, 2009. After coming back to Japan, the Survey Team compiled a Basic Design Report based on analyses of the findings in Viet Nam and dispatched a Draft Basic Design Study Team for 9 days from August 4 to 12, 2009, to explain the contents of the report to and have discussion with the Vietnamese counterparts.

The equipment to be procured under the requested assistance project was designed with consideration given to the positioning of NHOG, the status quo of existing equipment, activities performed in existing and related facilities, technical levels, financial capacity, and so forth, so as to choose equipment that is consistent with NHOG's activities. Moreover, the equipment has been determined in view of coordination with JICA's technical cooperation in the healthcare sector of Viet Nam. The main equipment planned for the Project is as follows.

Overview of equipment to be procured

Department	Name of Planned Equipment	Application	Quantity
Cytogenetics	Staining machine	Automatically deparaffins and strains test samples parafinned at the pathology department.	1
	Automated cover slipper	Automatically encloses a sample on a glass slide by slipping a glass cover onto it, thereby enhancing work efficiency.	1
	Thin layer sample making system	Gathers a larger number of cell debris on a slide, to enhance diagnosis accuracy in uterine cervix cell diagnosis.	1
Hematology	Hematology analyzer	Measures the numbers of red blood cells, leukocytes, hemoglobyns, etc. It is a basic blood tester widely employed in diagnosis.	1
	Polymerase chain reaction machine	More promptly determines the absence/presence of infection due to antigen or antibody response, by genetic amplification.	1
	Deep freezer	Stores test reagents that need to be kept cool and test samples for a long term.	1
Microorganism	Deep freezer	Stores test reagents that need to be kept cool and test samples for a long term.	1
	ELISA system	Determines the absence/presence of infections, such as Hepatitis B and C, STDs, and measles, based on the ELISA method.	1
Biochemical	Automatic bio-chemical analyzer	Analyzes blood and urine samples per component using reagents within a short period of time, thereby contributing to the ascertainment on the metabolism of living body.	1
Infection Control	Autoclave	Sterilizes steel small articles and linens used in the hospital, using high-pressure steam.	1
Biopsy Anatomy	Autopsy table	Used in anatomy necessary for identifying death causes and taking out tissues necessary for pathology.	1
	Refrigerator, mortuary	Stores corpses for relatively short periods.	1
	Cryotome	Cuts a sample exscinded from a patient for pathological tests into thin pieces appropriate for observation. This equipment is particularly targeted at a sample that requires quick tests during an operation, and has a function to freeze to rigidify and cut the sample.	1
	Tissue Embedding Console System	Efficiently prepares a block for pathology tests, in which a sample tissue is embedded firmly by pouring molten paraffin around it and cooling it down.	1
Neonatal	Ventilator, newborn	Used for patients who have a difficulty in spontaneous respiration in the ICU. The device shall be accompanied by the continuous positive airway pressure (CPAP) function that prevents airway obstruction.	5
	Patient monitor, neonatal	Uninterruptedly monitor the bio-information of serious cases in neonatal ICUs.	5
Delivery	Obstetric monitor, maternal monitoring	Monitors the cardiac sound of the fetus, contraction of the uterine, and electrocardiogram, blood pressure, and SpO2 of the mother during labor pains, in dealing with complications and high-risk deliveries.	9
Examination	Ultrasound units, color doppler A	Used in picture diagnosis: diagnoses and examines the growth of a fetus and its heart, abdomen, and other organs as well as blood flows in thyroid glands and other parts near the skin and tomograms on color imagery.	1
	B/W ultrasound units	Used in picture diagnosis: diagnoses and examines the growth of a fetus and its heart, abdomen, and other organs.	4
Surgery	Laparoscope set	Used in low-invasion surgeries without abdominal operation. In the field of gynecology, such operations may typically include treatment of extra-uterine pregnancy and endometriosis, and scission of uterus myoma and other tumors.	1

Department	Name of Planned Equipment	Application	Quantity
	Resectoscope set	Used in low-invasion surgeries without abdominal operation for gynecological operations. Such operations may typically include treatment of endometriosis and scission of uterus myoma and other tumors.	1
	Operation table	Fixes the patient in appropriate position in various operations.	11
	Anesthesia machine	Generally aneasthetize a patient in a surgery. Furthermore, an artificial respirator is used onto a patient who is unable to breath spontaneously in the general anesthesia state during the operation.	9
	Patient monitor	Continuously monitors the bio-information of a patient in operation theatres and recovery rooms.	8
	Patient monitor, CO2 sensor	Monitors the impact of CO2 gas introduced into the patient by means of the aeroperitoneum in a bellybutton surgery. It is equipped with a CO2 sensor for this purpose.	2
ICU	Respirator	Used for patients who have a difficultly in spontaneous respiration in the ICU.	2
	Patient monitor, CO2 sensor	Continuously monitors the bio-information of a patient in the ICU. It is equipped with a CO2 sensor for particularly monitoring the patient's respiratory function.	2
Pathology Obstetrics	Ultrasound units, color doppler B	Used in picture diagnosis. Monitors the growth of the fetus and also blood flows in placenta during eclampsia.	1
Center for Education and Training	Midwifery simulator	Training equipment for mastering delivery procedure in training courses for midwives.	3
Picture Diagnosis	X-ray unit, mammograph	Images breasts being compressed as a part of procedure for diagnosing lesion of tumors and cancers in tissues.	1
	X-ray unit, mobile	Urgently and simply X-rays a patient who has a difficulty in changing his/her position in operation theatres and the ICU.	1
	X-ray unit, fluoroscopy	Used in hysterosalpingography and other fluoroscopic tests in the field of gynecology.	1
	X-ray unit, general	X-rays the thorax, abdomen, and limbs for general purposes.	1
Hospital	Ambulance	Transfer emergency cases and serious cases with a sudden change in the condition to other medical facilities in a safe manner.	1

4. Implementation schedule and cost estimation

Assuming that this project is to be carried out under Japan's grant-aid assistance scheme, the total implementation period will require approximately 14.5 months, consisting of app. 6.0 months for detailed design and app. 8.5 months for equipment procurement.

Cost to be borne by Viet Nam 14,980.60 US dollars (app. 1.44 million yen)

5. Project evaluation

Approximately 6.2 million residents in Hanoi City will directly benefit from NHOG's strengthened functions. Moreover, residents in northern areas will have the following indirect effects through an improved referral system across neighboring areas of Hanoi City as well as northern areas, as the top referral institution, NHOG, will have be furnished with refurbished examination equipment under the Project.

1) The medical equipment to be procured under the Project will increase the numbers of deliveries, gynecological operations, and mammography tests.

2) The education and training equipment to be procured under the Project will augment the number of technical training courses to be provided by NHOG to co-medicals at hospitals positioned at lower levels in the referral system. The number of exercises will also increase, improving in turn technical levels as well as safety levels in medical institutions in provinces.

The requested project is deemed appropriate to be carried out under Japan's grant-aid assistance scheme due to the following reasons.

1) Approximately 6.2 million residents in Hanoi City will directly benefit from NHOG's strengthened functions. Moreover, residents in northern areas will indirectly benefit through a supplemented referral system covering neighboring areas of Hanoi City as well as northern areas, as the top referral institution, NHOG, will be furnished with refurbished examination equipment.
2) NHOG assumes a significant role in improving the technical level of gynecological examination in Viet Nam, through provision of education and training to provincial hospitals that are positioned at lower levels in the referral system. Thus, it will be able to support the improvement in medical services and the construction of referral system alongside through expanding the capacity of medical staff at lower-level medical institutions.
3) The equipment to be provided under the Project will expectedly be made use of effectively, since the planned medical and training equipment has been designed based on the current management structure and mostly includes replacements of the existing equipment and others being at levels commensurate with their technical level today whereas no large-scale equipment that requires installation in new BC Building is considered.

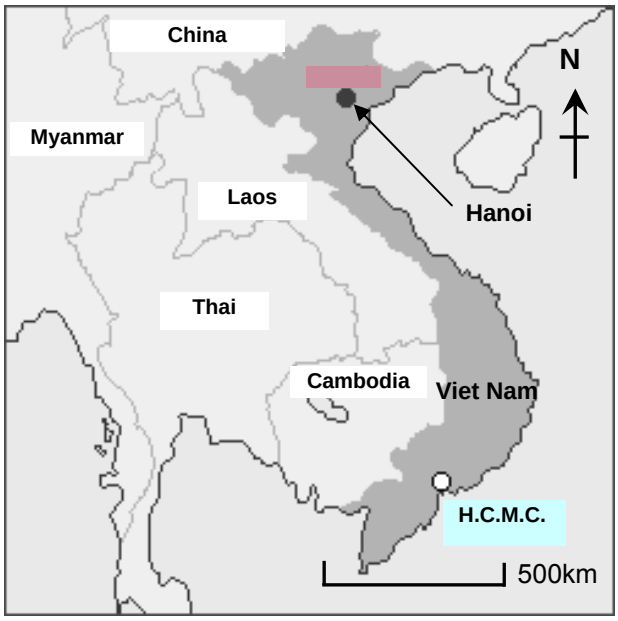
The Vietnamese side is expected to fulfill the following tasks in order to optimize and sustain the effects of the equipment to be procured under the Project.

1) Complete on schedule the construction of new BC Building, which is being carried out under Viet Nam's own funds. Relocate the relevant departments to the new building smoothly after the completion and immediately start examination activities.
2) Improve the service quality when the refurbished equipment and facilities satisfy patients' demand.
3) Build the capacity of co-medicals and refurbish the facilities at lower-level hospitals so

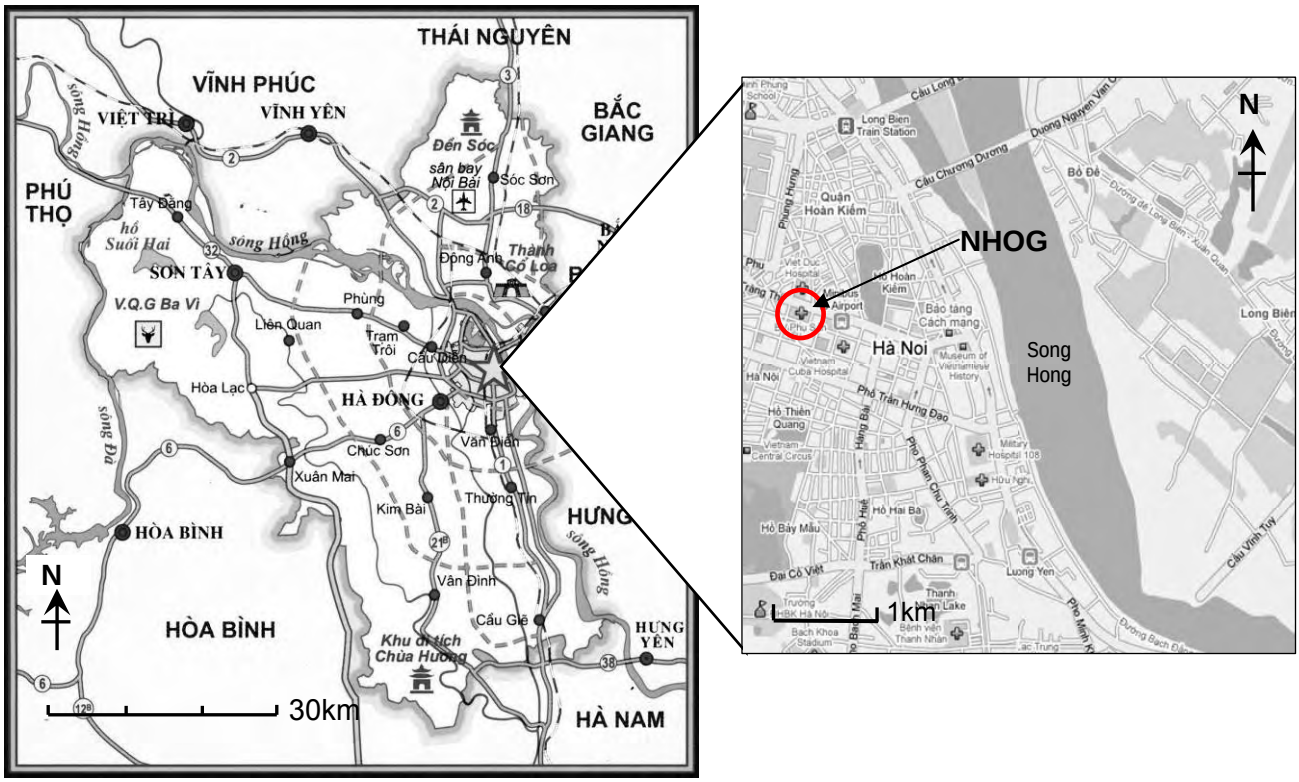
as to establish a gynecological referral system by realizing safe deliveries in provinces and preventing concentration of deliveries on hospitals in large cities.

[Appendix]

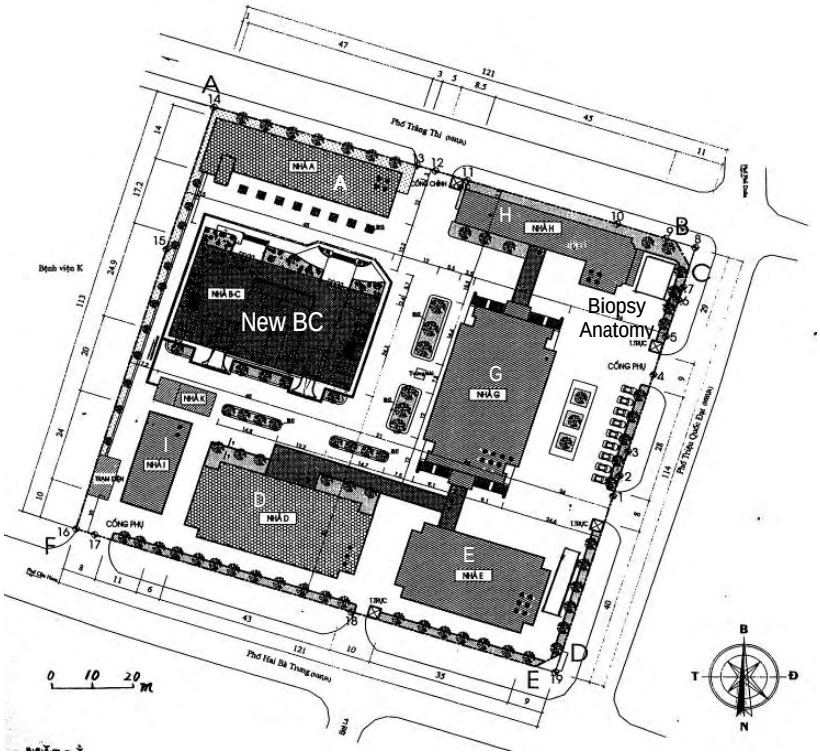
Location Map



The Socialist Republic of Viet Nam



Hanoi



National Hospital for Obstetrics and Gynecology (NHOG)

List of Figures & Tables

ABBREVIATIONS

Abbreviation	Original Name
ADB	Asian Development Bank
BHN	Basic Human Needs
BS	British Standard
CPAP	Continuous Positive Airway Pressure
CPRGS	Comprehensive Poverty Reduction and Growth Strategy
DIN	Deutsche Industrie Normen
DOHA	Direction Office for Healthcare Activities
E/N	Exchange of Notes
ELISA	Enzyme Linked Immunosorbent Assy
FISH	Fluorescent In Situ Hybridization
G/A	Grant Agreement
GDP	Gross Domestic Product
HB	Hepatitis B
HIV/AIDS	Human Immunodeficiency Virus / Acquired
ICU	Intensive Care Unit
JICA	Japan International Cooperation Agency
JIS	Japan Industrial Standard
MOH	Ministry of Health
NHOG	National Hospital for Obstetrics and Gynecology
ODA	Official Development Assistance
PAP	Papanicolaou
UL	Underwriters Laboratories
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
VND	Viet Nam Dong
WHO	World Health Organizaton

Chapter 1. Background of the Project

Chapter 1 Background of the Project

1-1 Background and outline of the Project

The population of 10-19 aged females in the Socialist Republic of Viet Nam (hereinafter referred to as "Viet Nam") accounts for 20.89% of the total Vietnamese female population, according to a United Nations Population Fund (UNFPA) report issued in 2007. This suggests that the number of births and demand for gynecology will continue to rise.

Nevertheless, there are not enough medical facilities for providing gynecological healthcare even today. It is also called for to improve examination levels of lower-level medical institutions, too.

The Ministry of Health (hereinafter referred to as "MOH") formulated a "Hospital Network Development Plan" in 2003, in which the ministry launched policies to develop hospital facilities nationwide necessary for making quality healthcare services that respond to the need in individual communities available. The lack of facilities has been remedied step by step through plans to redevelop provincial and county hospitals under funds of Viet Nam's own budget as well as assistance from Asian Development Bank (ADB).

On the other hand, the medical level at provincial and county hospitals has been elevated by means of technical guidance by upper-level hospitals for lower-level hospitals in accordance with the Direction Office for Healthcare Activities (DOHA) and Article 1816.

National Hospital for Obstetrics and Gynecology (hereinafter referred to as "NHOG") is positioned as the top referral hospital in obstetrics and gynecology, and strives to live up with its role by providing prenatal diagnosis, fertility treatment, and other advanced medicine. At the same time, it has inevitably to handle low-risk deliveries in response to the need for obstetrics in Hanoi City and its suburbs. However, NHOG's facility scale is not sufficient for satisfying patients' need for obstetrics and gynecology examinations. Moreover, it cannot provide sufficient services due to the superannuated facilities and equipment.

Under such circumstances, NHOG has embarked on rehabilitating severely-aged Building BC to accommodate more operation theaters and delivery rooms, while at the same time the Government of Viet Nam requested the Government of Japan to replace the decrepit equipment necessary for obstetrics and gynecology examinations and the education and training equipment vital for raising the medical technology level in obstetrics and gynecology of the country.

This Project will improve NHOG's examination functions as the top referral hospital, and satisfy demand for gynecology that continues to rise. Moreover, the referral system will be firmly established by improvement of the technical level of medical staff in the lower-level hospitals.

1-2 Natural Conditions

Hanoi where NHOG is situated is in the subtropical climate zone, hot and humid in summer and relatively cool in winter.

Table 1-1 Annual Temperature in Hanoi

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Average high temperature (ºC)	19.3	19.9	22.8	27.0	31.5	32.6	32.9	31.9	30.9	28.6	25.2	21.8
Average low temperature (℃)	13.7	15.0	18.1	21.4	24.3	25.8	26.1	25.7	24.7	21.9	18.5	15.3
Precipitation (mm)	18.6	26.2	43.8	90.1	188.5	239.9	288.2	318.0	265.4	130.7	43.4	23.4
Number of days with rain	8.4	11.3	15.0	13.3	14.2	14.7	15.7	16.7	13.7	9.0	6.5	6.0

Source: World Meteorological Organization

1-3 Social and Environmental Issues

The government of Viet Nam has established national environmental standards for waste and medical waste and wastewater (developer and chemicals) are required to be collected or treated.

Waste from the NHOG is classified before collected by a waste treatment service operator in Hanoi.

- General waste (yellow plastic bag)
- Medical waste (can be infectious: light blue plastic bag)
- Syringe (safety box)
- Plastic for infusion, etc.

Medical wastewater is treated in accordance with the standards in the treatment tank that was installed on the hospital premises in 2007. NHOG shall treat equipment to be provided in the Project properly in accordance with relevant standards.

The Administration Department of the hospital is responsible for waste disposal. Waste from the hospital is treated in accordance with the governmental decision 149/2004 on July 27, 2004, and the document issued by Hanoi People's Committee on 27/2005 on November 30. 2005.

Medical wastewater is collected to the wastewater treatment tank on the premises and chemically and microbially treated before released to the city sewer.

Such solid medical waste as injection needles, gauze and placenta are collected regularly at a designated place in the hospital, collected by a city contractor daily and incinerated in accordance with the above mentioned regulations.

Chapter 2. Contents of the Project

Chapter 2 Contents of the Project

2-1 Basic Concept of the Project

2-1-1 Objectives of the Project and its Overall Goals

Viet Nam drew up in March 2001 a 10-year healthcare sector plan. The plan sets forth an overall goal to “realize human development through reducing morbidity rates and improving average life expectancy, so as to create safe society where all people can benefit from primary care, have access to quality medical care, and develop both physically and mentally.” To achieve this goal, it hammers out eleven measures, including the “development and employment of human resources” aimed to promote education and training activities to healthcare providers and the “enhancement of preventive healthcare and health and sanitation educational activities” to strengthen reproductive health. In the “Hospital Network Development Plan” formulated in 2003, the government launched policies to construct hospital facilities nationwide, in order to provide all the nationals with quality healthcare services in accordance with the needs of individual communities.

To strengthen reproductive health, the National Reproductive Health Strategy (2000-2010) holds up a goal to "improve the maternal and child health level by decreasing the mortality rates of pregnant and parturient women, prenatal babies, and infants, and others.” More specifically, in line with the DOHA and Article 1816 issued by the MOH upper-level medical institutions have been providing education and training to lower-level medical institutions. Moreover, the country has been carrying out projects to refurbish provincial and county hospitals with assistance provided by the ADB.

The Project for Equipment Supply in National Hospital for Obstetrics and Gynecology aims to upgrade the education and training function as where as examination function of the NHOG the top referral hospital for obstetrics and gynecology in Viet Nam, so that NHOG will be able to provide appropriate education to provincial hospitals and render examination services at an expected level.

2-1-2 Outline of the Project

NHOG, the subject of the Project, is positioned as the top referral hospital for obstetrics and gynecology in Viet Nam. It performs approximately 6,000 gynecological surgeries and more than 15,000 high risk deliveries, including Caesarean sections, and has at least 2,000 premature births every year. In addition, the hospital deals with approximately 4,000 low-risk deliveries annually.

In 2008, 4,385 normal deliveries and 6,150 vacuum extractions and forceps deliveries were performed on 11 tables and 8,731 caesarean sections and 6,277 other gynecological surgeries on 8 tables. Patients’ demand is on the constant rise having reached 193,356 tests and 164,287 treatments. Some beds in hospital buildings have to accommodate 2 or 3 patients each. The size of NHOG’s facilities, such as delivery rooms, operation theatres, and beds, has almost come to saturation. Furthermore, many equipment pieces, including delivery tables and

delivery monitors, were introduced in the 1990s and the superannuated facilities and equipment hamper appropriate medical services. In the meantime, NHOG assumes a significant role in improving the technical level of gynecological examination in Viet Nam, through provision of education and training to provincial hospitals that are positioned at lower levels in the referral system. However, it has not been successful in bringing sufficient effects as it possesses only one delivery simulator as training equipment.

Under such circumstances, NHOG has embarked on rehabilitating severely aged Buildings BC where operation theaters, delivery rooms, and newborn babies room were located, targeting at the completion in October 2011, in order to increase the number of operation theaters and delivery rooms. At the same time, the Government of Viet Nam requested the Government of Japan to replace the decrepit equipment and complement the lacking equipment necessary for obstetrics and gynecology examinations as well as education and training materials and equipment vital for raising the medical technology level in obstetrics and gynecology.

The Project will provide necessary equipment with an aim to reinforce NHOG's examination and education and training capacities. It is expected, therefore, to enable the hospital to respond to the increasing demand for obstetrics and gynecology healthcare and provide more extensive technical instructions to lower-level medical institutions. Incidentally, the equipment to be supplied under the Project is expected to contribute to capacity building of healthcare providers in the country, through collaboration with "The Project for Improvement of the Quality of Human Resources in the Medical Services System" currently being planned under Japan's technical cooperation scheme. In consideration of the above mentioned situation, the requested assistance project will procure medical equipment and necessary supplies indispensable for obstetrics and gynecology examinations as well as education and training.

2-2 Basic Design of the Requested Japanese Assistance

2-2-1 Design Policy

(1) Basic Policy

An equipment plan shall be formulated in view of a variety of issues including the position of the NHOG, existing equipment conditions, activities of existing facility and its affiliates, technical standards, and capability of cost bearing. The equipment to be provided in the plan shall be consistent with the NHOG's activities. Linkage with JICA's technical cooperation in healthcare shall be also taken into consideration.

1) Facility

The Project is for the NHOG that is an existing hospital. The equipment shall be provided for the departments below. The neonatal, delivery, surgery, ICU, and pathology obstetrics departments are planned to be moved to the new BC building to be constructed by the Government of Viet Nam.

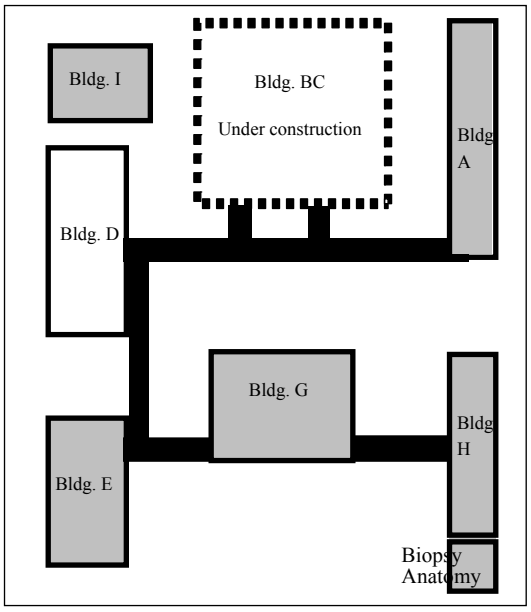
Table 2-1 Departments planned to be moved to the new BC building

Departments remained in the existing building	Departments planned to be moved to the new BC building
Cytogenetics, Hematology, Micro organism, Bio chemistry, Infection Control, Biopsy Anatomy, Center for Education and Training, Imaging diagnosis, Hospital	Neonatal, Delivery, Surgery, ICU, Pathology Obstetrics

The equipment requested for the Center for Assisted Reproduction Technology shall be excluded from the plan because it does not meet the ODA policy that aims to satisfy the basic human needs (BHN).

* Colored cells of right table, there are shown of intended department of the project, and rooms which planned of the equipment are indicated by boldface.
Also colored buildings are shown there have the intended department of the project, below figure.

Building A	
1F	Examination (Emergency reception, **Medical care**, HIV consultation)
2F	**Examination (Gynecological medical care)**
3F	**Laboratory (Hematology, Bio chemistry)**
4F	**Laboratory (Cytogenetics, Micro organism)**
Building D	
1F	Gynecology
2F	Gynecology
3F	Center for assisted reproduction technology
Building E	
1F	Outpatient, **Center for education and training (2 training rooms)**
4F	Equipment, Personnel, Conference rooms
5F	**Center for education and training (administration, ETC)**
6F	**Center for education and training** (Auditorium, **1 training room**)
Building G	
1F	**Examination (obstetrical medical care)**, Registration, waiting room
2F	**Neonatal**
3F	**Delivery**
4F	**Surgery**



5F	**Pathology obstetrics (Obstetrics 1)**
6F	General obstetrics (Obstetrics 2), Infectious diseases obstetrics (Obstetrics 3), **ICU**
Building H	
1F	**Imaging diagnosis (Radiology)**
2F	**Imaging diagnosis (Ultrasound), delivery room for mother with infectious diseases**
3F	Prenatal diagnosis center
Building I	
1F	Infection control (Linen washing, Drying)
2F	**Infection control** (Washing, Assembly, **Sterilization**)
Annex	
1F	**Biopsy anatomy (Anatomy room, Workroom, Morgue)**
2F	Biopsy anatomy (Office)

Figure 2-1 Hospital building layout

2) Equipment

The Project shall cover examination instruments and equipments that directly benefit patients in obstetrics and gynecology and shall not cover those for research and those related to such an ethical issue as life manipulation.

Equipment for which space is secured that can be used in the existing buildings shall be selected.

Socialization refers to distribution of part of the revenues from the use of medical equipment to the distributor in return with in the distributor delivered it free of charge. (What percentage of revenuers is provided to the distributor differs from contract to contract.) The hospital is responsible for the maintenance, reagents and consumables. The NHOG and some other hospitals in Viet Nam have adopted the socialization system. Although it requires no initial investment, they need to pay part of the revenues from patients to the distributors and thus it benefits the hospitals little on a self-paying basis. The socialization has an advantage of enabling the introduction of equipment with no initial cost, while it sometimes does not benefit the financially independent hospital very much because the hospital does not necessarily secure profits depending on the numbers of patients or examinations.

The existing contract is respected in relation to the equipment used in socialization in order to promote its self-sustaining development. However, equipment that has become decrepit and the contract may be terminated or equipment with insufficient treatment capacity or function shall be provided in the Project. This is expected to result in a profit increase of NHOG.

The equipment for departments that will move to the new BC building shall be mobile and such equipment as the formula system will be excluded from the plan because it requires installation work.

(2) Policy on Natural Environmental Conditions

Hanoi where the NHOG is located is situated in the subtropical climate zone. It is hot and humid in summer

and relatively cool and dry in winter. Thus, such equipment as analyzers used for hematology and biochemistry testing shall be placed in air-conditioned rooms, as they require temperature and humidity control.

(3) Policy on Socioeconomic Conditions

Many pregnant women in Viet Nam strongly hope for safest delivery because of the two-children policy of the country. Thus, they tend not to choose relatively poorly-equipped county hospitals for caesarean operation. As a result, they tend to concentrate in well-equipped Gynecology Department of Hanoi City Hospital and the NHOG. Many pregnant women also wish to deliver their baby on lucky days on the Chinese calendar and, as a result, they choose to have caesarean operation. The weight of fetus is on the rise because of better eating habit in accordance with recent economic development. This is another major reason for the mothers to choose to have caesarean operation.

In 2008, 25 percent of pregnant women had caesarean operation in Hanoi, then 45 percent of pregnant women had the cesarean operation at the NHOG, respectively. Because the extremely high ratio is likely to continue in the country, equipment to meet such need shall be planned.

(4) Procurement Policy

① Appropriate Country of Origin of Procured Equipment

Medical equipments and devices that are widely used in Viet Nam are mainly made in Japan, Europe or the United States. Equipment that requires replacement parts, consumables or equipment that requires maintenance service by the manufacturer will be chosen among those made by manufacturers that have distributors in Viet Nam. Equipment from third countries will be also taken into consideration.

② Transportation Method

a, Equipment from Japan

- Maritime Transportation

Medical equipment from Japan shall be shipped from the Yokohama Port in containers and landed at a major Vietnamese port of Hai Phong. Liners are in service between the two ports and the travel requires about one month.

- Land Transportation

After the customs clearance, equipment shall be transported about 100 kilometers from the Hai Phong Port to the hospital via Route 5. The land transportation including the customs clearance requires about half a month.

b, Locally Procured Equipment

Distributors are located in major cities of Hanoi and Ho Chi Minh.

Because distributors usually deliver the equipment directly to the hospital, it shall be done so in the Project.

(5) Policy on Operation and Maintenance

As for the operation and maintenance capacity of the NHOG, about 86 percent of all problems related to medical equipment are handled by two engineers and five technicians of the hospital. The remaining 14 percent of the problems are handled externally. The hospital does not have any significant operation and maintenance

problem. It manages to generate funds for repairing general electric and building facilities plumbing installation and maintenance of automobiles and motorcycles. It outsources periodical inspections of elevators and radiation equipment.

The plan shall be made in such a manner so that the equipment for replacement of existing one will not change the current operation and maintenance conditions and the equipment that is newly introduced will not increase the maintenance cost and human resources significantly.

(6) Policy on Grade, Specifications and Quantity of Equipment

① Specifications and Grade

The grade of the equipment will be carefully selected to make it suitable for the medical service the hospital provides, existing equipment, and experiences and skills of the medical staff. The staff will be able to use the equipment after receiving instructions and training at installation. Equipment that requires additional short- or long-term training shall be excluded.

Replacement parts shall be planned at a minimum level for the maintenance in view of the characteristics of the equipment. Consumables and reagents shall be planned in consideration of the quantity consumed and their expiration dates.

② Quantity

Based on the existing equipment and the size, function, experience and medical service of the hospital, a necessary quantity shall be planned. The maximum quantity of the equipment that will be transferred to the new BC building shall be the quantity that can be arranged and used in the existing building.

(7) Policy on Overall Process

In the Project, all the planned equipments are required to be arranged in the existing buildings to be used. Thus, all rooms need to be prepared before their arrival, if there is any room shortage under the current condition. The Project will be reexamined if it is impossible to prepare all rooms before the arrival.

The construction of the new BC building by the NHOG is slated to be completed in October 2011. Because the planned equipment is first being used in the existing buildings, the construction work does not affect the Project. However, because the NHOG needs to transfer some of the planned equipment to the new BC building while performing their medical service, it needs to make a plan of transfer and budgeting carefully by the Viet Nam side.

2-2-2 Basic Plan

(1) Overall Plan

This Project shall provide medical equipments for the following existing departments and they shall meet their functions and activities.

- Cytogenetics
- Hematology
- Micro organism
- Bio chemistry
- Infection Control
- Biopsy Anatomy
- Neonatal
- Delivery
- Examination
- Surgery
- ICU
- Pathology Obstetrics
- Center for Education and Training
- Imaging Diagnosis
- Hospital

(2) Examination of Requested Equipments

Based on the policy above, we carefully examined the need and relevance of the requested equipment and made decisions as explained below. The examination result for each individual item is shown in Appendix 6.

1) Classification

Table 2-2 Classification of Requested Equipments

Classification	Contents
Replacement	Equipment to be replaced with existing one
New	Newly provided equipment the hospital has never used
Addition	Equipment of the same type as the existing one to be added to secure sufficient quantity

2) Selection Criteria

Table 2-3 Selection Criteria

Point of consideration	Outline of examination	
①Purpose	○	Equipment that matches the current medical service of the department and equipment required for education and training
	△	Equipment that can be replaced with simpler one and equipment that needs to be examined individually separate from the request
	×	Equipment that does not match the activities of the department, equipment that may raise such an ethical issue as life manipulation and research equipment, office supplies, general electric appliances and other general commodities
②Need	○	Equipment that is judged essential for activities of the department
	×	Equipment that is not so necessary for activities with little benefit, equipment for which existing ones can serve
③Technical level	○	Equipment that matches the current technical level
	×	Equipment that requires advanced skills to handle, equipment for which technical advancement is hard to be achieved
④Operation system	○	Equipment for which operators are allocated or expected to be allocated
	×	Equipment for which operators are not likely to be allocated
⑤Maintenance system	○	Equipment that is easily handled at the current hospital or by the existing staff, equipment for which the manufacturer has maintenance system or equipment for which consumables and replacements are easily available
	×	Equipment that is hard to maintain and likely to cause maintenance problems after introduction, equipment for which consumables and replacements are hard to find locally

⑥Operation and maintenance cost	○	Equipment that requires very little operation and maintenance cost, equipment for replacement of existing equipment which will not cause budgeting problem
	×	Equipment that may raise operation and maintenance cost and thus causes budgeting problems if they are newly provided or added
⑦Overall judgment	○	Equipment judged relevant and included in the plan
	×	Equipment not to be included in the plan

(3) Summary of Examination of Major Equipments

The following describes the examination result of main equipments of each department. The figures in the parenthesis after the name of items are the request number.

① Cytogenetics Department

Because the automatic karyotypic analyzer (No.1), FISH system (No.3) and testing devices related to them for genetic testing may be used for life manipulation directly or indirectly, they are excluded from the plan. Because the automatic karyotypic analyzer has already been introduced at the prenatal testing center, we recommend its shared use among more than one department in the hospital for efficient use of equipment.

Approximately 38,200 PAP smear tests are performed annually or 150 tests daily. The thin Pre PAP test system (No.16) will be introduced to improve the accuracy of the test and efficiency of sample preparation. The name of the equipment shall be changed to the thin layer sample making system. Although it is new at the hospital, it can be used if instructions and training are provided when it is installed. Because the auto PAP system (No. 12) has never been introduced in Viet Nam and neither the manufacturer nor the distributor provides sufficient maintenance service, it is excluded from the plan.

The devices requested by the department include those for both cytopathology and histopathology. The paraffin procedure machine (No.18), cryostat microtome (No. 17) and histocenter (No. 19) are devices usually used in histopathology and thus they shall be examined in the Biopsy and Anatomy Department.

The fluorescence microscope (No. 20) is excluded from the plan because it is related to FISH chromosomal testing system. The automatic slide stainer (No. 21) is excluded because it overlaps with staining machine (No.13).

② Hematology Department

The following three apparatuses are requested: ELISA system (No.22), hematology analyzer (No.23) and polymerase chain reaction machine (No.24). In the discussion after signing the minutes of preparatory survey (basic design), it was decided that the ELISA system would be examined in the Microorganism Department. There are currently two hematology analyzers and one ELISA system provided in the socialization program.

The existing hematology analyzer has the capacity to handle 60 samples per hour and thus 120 samples can be processed in an hour with two units. In 2008, there were 790 samples per day, which would require 6.6 hours to complete the test. The older unit shall be replaced.

With the existing ELISA system, the plate washer, shaker, and reader are used individually manually to handle 123 HIV tests and 183 HB tests daily.

The polymerase chain reaction machine will be provided for the diagnosis of various viruses as well as definitive diagnosis of HIV viruses. Although the apparatus is introduced for the first time in the department, it

has already been introduced in the prenatal testing center in the hospital. Because the users can provide instructions and advice and instructions and training are also provided at installation, no usage-related problem will occur.

③ Micro organism Department

In the discussion after signing the minutes of preparatory survey (basic design),, it was found out that the requested equipments in the department were requested as those in the cytogenetics department. We then confirmed that the devices requested for the Microorganism Department are CO 2 incubator (No.6), shaker (No. 7), deep freezer (No. 9), and ELISA system (No.22).

The ELISA system will be provided mainly for the examination of such sexually transmitted diseases as cyto-megalovirus and chlamydia**.** The existing CO2 incubator will be replaced with a new one because it is old. The shaker and deep freezer will be newly provided. Because CO 2 incubator, shaker and deep freezer are general-purpose equipments, they do not require any special skills or training.

④ Bio chemistry Department

The major requested items are automatic bio-chemical analyzer (No.25), automatic immunator (No. 26) and automatic urine analyzer (No. 27). The existing automatic bio-chemical analyzer and immunator were provided in the socialization program. The former has the capacity of 600 tests per hour. There are 984 tests conducted per day, which requires 1.64 hours. Although it still has remaining capacity, it will be replaced with a new one because the existing one is old.

There are 215 female hormone tests and 171 tumor marker tests conducted per day. Currently three automated immuno-analyzers are available for these tests because of the differences in light-emitting methods. Each unit has the capacity of 80 to 120 tests, 200 tests and 86 tests per hour. Because there is remaining capacity and they are relatively new, the automated immunator is removed from the plan.

The existing urine analyzer has the capacity of 500 samples per hour. It takes 2.1 hours to handle 1,030 tests per day and the existing unit is sufficient enough to handle the situation.

They requested six deep freezers (No.29). Although they made the request probably to freeze samples, they do not need to be frozen in biochemistry, the request is rejected.

In the discussion after signing the minutes of preparatory survey (basic design),, one of the two microscopes (No.31) is requested to be the transmission electron microscope. However, because it is for scholarly study hardly used in biochemistry, and it requires advanced skills to prepare samples, it is excluded from the plan.

In the discussion after signing the minutes of preparatory survey (basic design),, the vertical autoclave (No. 30) was confirmed to be changed to be a requested item in infection control.

⑤ Infection Control Department

The vertical autoclave (No.30) requested in the Biochemistry Department is moved into the requested item list in the Infection Control Department as the steam sterilizer. Of four existing sterilizers, one old unit will be replaced.

Based on the assumption that 700 packages (30 x 10 x 5cm = 1.5L per package), 150 steel sterilization cases for small items (35 x 27.5 x 12cm = 11.55L per case) and 150 clothes sterilization cases (40cm in diameter x

37cm = 46.472L per case) are sterilized daily, a total volume of 9,753 liters will be sterilized with four steam units with the total capacity of 1,460 liters, with an average of 6.68 cycles each unit per day. When one cycle requires 1.5 hours, each unit is run for about 10 hours daily.

The sterilizer that will be replaced with a new one has the capacity of 300 liters. The annual average increase rate of the total cases of normal delivery, vacuum extraction, forceps delivery, premature birth, stillbirth, caesarean operation, and gynecological operation is 11.5 percent. Based on the assumption that the volume of sterilization increases proportionately in accordance with the increase of such treatments and operations and that the volume of two years after the introduction of the equipment is used for calculation, large sterilizers with the capacity of 450 liters are planned.

⑥ Biopsy Anatomy Department

The department began operation in the new building next to H Building. Because there is no autopsy table (No.34) or mortuary refrigerator (No. 35), the remains are kept in formalin when they need to be kept as fatal cases or when stillborn babies require autopsy. Because an autopsy needs to be performed to investigate the cause of death, the autopsy table and mortuary refrigerator will be provided in the plan.

The paraffin procedure machine (No.33), microtome (No.36) and microscope multi viewer(No.37) will be provided in the plan, because they are basic devices for the pathology of the biopsy tissue. However, one paraffin procedure machine will be excluded from the plan and one unit will be provided for replacement because one unit moved from the Cytogenetics Department overlaps with the machine (No.18) in this department. The cryostat microtome (No.16) and histocenter (No.19) will be newly provided under the new name of cryotome and tissue embedding console system, respectively. The immunohisto chemical stainer(No.32) will be excluded from the plan because it requires advanced skills and there is no clear information on the operation system, technical level or the number of cases.

⑦ Neonatal Department

The new BC Building is planned to be equipped with a total of 30 beds, 22 beds for premature babies and 8 beds for isolated patients. Although main equipment is planned to be provided for 30 beds, the capacity and the number of existing devices of the existing facility are taken into consideration. The new BC building is planned to have 30 infant incubators (No.45) and 30 syringe pumps (No.40). Although 24 infant incubators are being used currently, most of them are old and thus requested 12 incubators will be provided for replacement. Because existing 16 syringe pumps are old, requested 15 pumps will be provided. Even when they are all provided as requested, they are not enough to replace all of the old devices and do not satisfy the planned quantity for the new BC Building and thus the old devices will continue to be used to offset the shortfall.

Ventilators for newborn babies (No.41) and patient monitor for neonatal (No. 42) are planned at the rate of one unit per 5 beds for premature babies and beds for isolated patients. Because there are some existing ones, five ventilators and five monitors will be provided. Six infusion pumps (No.39) are also planned at the rate of one unit for five beds.

Because most of existing CPAP machine (No.43) are relatively new, they are considered to be enough and thus excluded from the plan.

A total of 18 phototherapy units (No.44) are required for prevention of jaundice for the current number of

patients (In 2008, 368+2372=2740 patients, 2740÷356＝15.01, 15×1.2＝18). A total of 10 units will be newly provided, some to replace old units and others for addition. The new and additional devices in the department can be placed on the 2nd floor of existing G Building.

The automatic powder/milk preparation system (No. 54) is a comprehensive system including the processes of washing, sterilization, dispensing, storage and heating and thus it requires plumbing and other utility work. We consider that it should be planned for new BC Building and thus exclude it from the plan. The newborn bathtub (No.52) is also excluded from the plan based on the idea that it should be also planned as part of the plumbing installation rather than as one individual equipment.

The anesthetic machine for neonatal (No.55) is also excluded from the plan because no surgery is performed on newborns currently and it is not confirmed that there is a plan to perform such operations and surgeons or other human resources for such operations are secured after the department moves to new BC Building.

In the discussion after signing the minutes of preparatory survey (basic design),, the ventilators (No.38) were decided to be changed to the requested devices in the Surgery Department to those for adults. However, because the purpose and need in the Surgery Department are unclear, they are excluded from the plan.

⑧ Delivery Department

Although 25 delivery tables (No.70) were requested, there are a total of 10 tables in six rooms in the current Delivery Department and 14 tables are planned in five rooms in the Delivery Department in the new BC Building. In addition, there are two tables for patients with infectious diseases on the 2nd floor in H Building. After the completion of the new BC Building, the tables for patients with infectious diseases will remain on the 2nd floor in H Building and there is a plan to increase the tables to 4 there. Thus, a total of 18 delivery tables--10 tables to replace existing tables, four additional tables in the new BC Building and four tables for the patients with infectious diseases in H Building—are planned as maximum. It is currently being confirmed that they can be accommodated in the existing building by, for example, converting the staff room of the existing department into a delivery room. Because all the existing delivery tables are old, they are planned to be replaced with new ones. A total of 17 tables, replacement and addition, are planned and one multi-function delivery table (No.71) is also planned to handle sudden condition changes during delivery.

The maximum numbers of the examination lamp (No.69), IV stand (No.64) and instrument trolley (No.65) are for 18 delivery tables. Because all the existing devices are old, 18 lamps will be provided to replace the old lamps and the maximum requested quantities of five IV stands and eight instrument trolleys are planned. Even when the maximum requested number of IV stands are provided, they are not enough to replace all the old stands and fall short of the planned quantity based on the number of delivery tables in the new BC Building. Old stands will continue to be used to offset the shortfall.

Approximately 33.2 deliveries are estimated in 2010 daily based on the increase ratio from 2004 to 2008. When the increase ratio is estimated to be 20 percent after 2010, there will be about 40 cases daily (33.2×1.2＝39.84) in 2011. Thus 40 instrument sets for normal delivery (No.56), 40 cord control sets (No.73) and 40 instrument sets for post-partum (No.74) are planned. Based on the figure of stillbirths in 2008, which is 344, one stillbirth is assumed to occur per day. In consideration of backups, 4 instrument sets for still birth (No.76) are planned.

The number of the obstetric monitors (No.80) is limited to be 18, one each for 18 delivery tables in the new

BC Building. Half of them, or nine, are planned to be general monitors and the rest are planned to be the ones capable of monitoring biological information of the mother. Because five of the existing general monitors are still usable, four monitors will be provided for replacement. Nine obstetric monitors capable of monitoring biological information of the mother are planned to be newly provided. Thus, because the patient monitor (No.78) has the same function as the half of the obstetric monitors (No.80) is the same, No. 78 is excluded from the plan.

Based on the assumed ratio of vacuum extraction being 56.2% in 2010, based on its ratio to forceps delivery, a total of 11 vacuum extractors (No.79) are needed ($18 \times 0.572 = 10.30$) including one additional. In consideration of existing ones, six units are planned to be added.

Of requested equipments, the computer with printer (No.58) and microwave (No.60) are excluded from the plan, because they are office equipment and general electric appliance, respectively. Because the medicine box (No.61),instrument box (No.62) and clothes box (No.63) are relatively reasonably priced, the hospital will be able to acquire them by themselves.

⑨ Examination Department

In the list of request equipments, there are two types of ultrasound unit, No.98 and No.108. In the discussion after signing the minutes of preparatory survey (basic design),, it was confirmed that No.98 is the ultrasound unit and No. 108 is the Doppler for fetuses. As for the five requested ultrasound units, color Doppler A (No. 98), one color unit is planned to be added to the one existing color unit. Four are planned to replace the four existing old B/W ultrasound units.

Two colposcopes (No.104) are planned to replace the existing old units. One electrosurgical unit (NO. 103) will replace an old one and one unit will be added in accordance with the number of the colposcope.

The laser cauterizing machine (No.99) will be excluded from the plan because the electrosurgical unit can be used alternatively.

As for the biopsy forceps (No.81), 50 sets are planned based on the assumption that there will be 11,233 biopsies with a daily average of 43.2, which is obtained based on the 9,550 cases in 2008. As requested, 10 Pozzi forceps (No.82) are planned to be used at the emergency room and gynecologic treatment room. The speculum (No.87) shall be used for treatment and diagnosis in the department. Although we will provide 200 units as requested, we plan to provide 80 small, 80 medium and 40 large speculums.

Although trays (No.89, 90, 91) and cycle boxes (No.92, 93) were requested in different sizes, they are listed under one item by stating the details in specifications. The kidney tray (No.94), alcohol cotton box (No.95), and urine container (No.96) are excluded from the request list because they are relatively cheap and thus the hospital will be able to obtain them by themselves. The Karman syringe (No.101, 102) and hysterography instrument set (No.109) are excluded because they are disposables. The computer (No.113) is also excluded because it is office equipment.

The mammograph (No.112) is examined in the Imaging Diagnosis Department.

⑩ Surgery Department

In the existing building, regular seven operation rooms and one room for infection are being used on the 4th floor of G Building and on the 2nd floor of H Building, respectively. A total of 14 rooms for those purposes are

being planned in the new BC Building. Because three rooms can be converted into operation rooms in the existing G Building, the equipment will be planned for the maximum of 11 rooms for the two purposes.

Eight operation tables (No.119) are planned for replacement and three more are planned for addition. It was found out that the hospital has difficulty in acquiring ceiling-type operation lamp for the new BC Building because the NHOG is not capable of secure the budget. We plan to provide 10 mobile operation lamps (No. 120), because the endoscopic surgery accounts for a majority of surgeries and thus they do not have to be on at all times.

The maximum of 11 electrosurgical units (No.121), 11 anesthesia machines (No.122), 11 laryngoscopes (No,123) are needed for the operation tables. In consideration of the existing usable equipments, 10 electrosurgical units, nine anesthesia machines and two laryngoscopes are planned.

We decided to examine the need for the patient monitor (No.128) that was originally requested for the ICU. Although we plan to provide a total of 10 units: 7 to replace existing old units and 3 for addition. Two units shall be equipped with a CO2 sensor.

The cystoscope set (No.118) is excluded from the plan because it is hardly used in obstetrics and gynecology.

Oxygen is planned to be provided in the central piping system in the new BC Building. Because the oxygen condenser (No.115) will be used only in existing buildings and oxygen tanks can be also used, the condenser is excluded from the plan.

⑪ Intensive Care Unit

There are three beds being used in the ICU, although 10 beds are called for. The new BC Building is planned to have 12 beds in two rooms. Because the three ICU beds (No.127) are regular beds, eight beds are planned for replacement and addition under the assumption that more ICU rooms are secured or rooms are enlarged. Because the ratio of patients who require respiratory management or monitoring in obstetrics and gynecology is believed to be lower than the ordinary ICU, one unit is considered to be required per four beds. In consideration of the existing units, one respirator (No.130) is planned for replacement and a total of two patient monitors originally named biological information monitor Pet CO2 (No.131) are planned for replacement and addition.

The maximum quantity of syringe pump (No.132) is eight, the number of ICU beds. One is planned for replacement and seven are planned for addition. Because one electrocardiography (No.133) is sufficient enough to cover the whole department, one is planned.

Oxygen is planned to be provided in the central piping system in the new BC building. Because the oxygen supplying center (No.129) will be used only in existing buildings and oxygen tanks can be also used, the condenser is excluded from the plan. The air sterilizer machine (No.134) is also excluded because it should be examined in the specifications of the air conditioning system of new BC Building.

The liquid warmer (No.135) is also excluded because the purpose of its use is not clear.

⑫ Pathology Obstetrics Department

The fetal monitor (No.136) which in the ward of the pathology obstetrics department is renamed Japanese name of the equipment. One unit is planned to replace an old one. One ultrasound unit, color doppler B instead of the ultrasound unit, 2D (No.137) will replace one old unit.

⑬ Center for Education and Training

Training was offered in 25 courses in seven categories at the NHOG in 2008, attended by a total of 543 people. The training offered locally in 36 courses in five categories in the year was attended by a total of 1,111 people. In 2009, approximately 2,000 people are expected to attend some of the 67 courses in 22 categories including the courses jointly offered with other projects. Another 1,000 people are also expected to attend about 20 courses provided locally. The attendees are local medical practitioners and employees of healthcare institutions. The programs vary from ultrasonic diagnosis, obstetric and gynecological symptoms and treatment, delivery techniques, laparoscopy, obstetric and gynecological tests to newborn care. Midwifery simulators (No.138), baby dolls (No.140, 141, 142) and intravenous injection arm simulators (No.144) are main planned equipments for the training.

As a result of the discussion after signing the minutes of preparatory survey (basic design),, the full-body female anatomic model is planned for the midwifery simulator (No.138). The maternity model (No.139) is planned for the obstetric and gynecologic simulator. Although a total of 90 baby dolls—30 male (No.140), 30 female (No.141) and 30 premature (No.142)--were requested, five of each type will be provided based on the assumption that four trainee will share one body in each course with the capacity of 20. Because the specifications of intravenous injection arm simulators (No.144) and blood collection and intravenous injection simulators (No.148) overlap, they will be consolidated and five of the former simulator (No.144) are planned.

The urethral catheterization simulator for male (No.146) is excluded from the plan because it is not needed so much. The projector (No.154) and screen (No.155) are planned to be installed in three training rooms into which the motorcycle parking lot on the 1st floor of E Building is renovated.

⑭ Imaging Diagnosis Department

A new mammograph (No.112) is planned for the removed one after it failed. It is planned to be installed in the room next to the old mammograph room. Although it is a new unit, there will be no difficulty using it because there used to be a unit and some radiological technicians are able to manipulate it.

One digital fluoroscopic equipment (No.158) shall be added to be installed in the old mammography room. General X-ray unit (No.159) shall be also added to be installed in a room that is currently used as patient resting room.

The existing mobile X-ray unit (No.156) was introduced in 1995. Because it has become old, it will be replaced with a new unit. One X-ray film viewer (No.157) in the control booth 2 will be replaced with new unit and two will be newly added to the mammograph room and new general x-ray room.

⑮ Assisted Reproduction Technology

The equipment requested for the Center for Assisted Reproduction Technology shall be excluded from the plan because its use constitutes life manipulation and reproductive medicine and thus it does not meet the ODA policy that aims to satisfy the BHN.

⑯ Hospital

One ambulance (No.172) is requested. A total of 120 patients in obstetrics and gynecology, 140 newborns and 520 other patients were transported from the NHOG to other hospitals in 2008, with a daily average of 2

incidents. However, because the existing two ambulances are old with the total kilometrage of over 70,000 each, one requested ambulance is planned to be provided.

(4) Equipment Plan

An equipment list (Appendix 7) and an outline of major equipment (Appendix 8) that are planned after the examination of requested equipment in the Project are produced as attachments.

2-2-3 Basic Design Drawing

Installation floor plans are shown below.

（1） Item No. 14

Equipment name: Automatic bio-chemical analyzer

Area: Floor 3/Bldg A

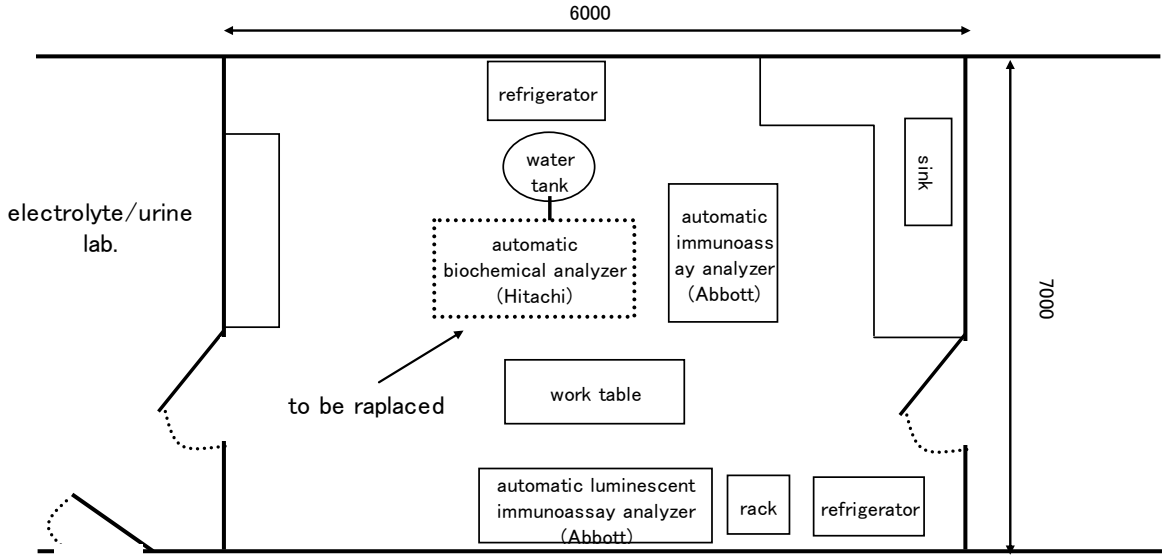


Figure 2-2 Layout plan of Automatic bio-chemical analyzer

（2） Item No. 17

Equipment name: Autoclave

Area: Floor 2/Bldg I

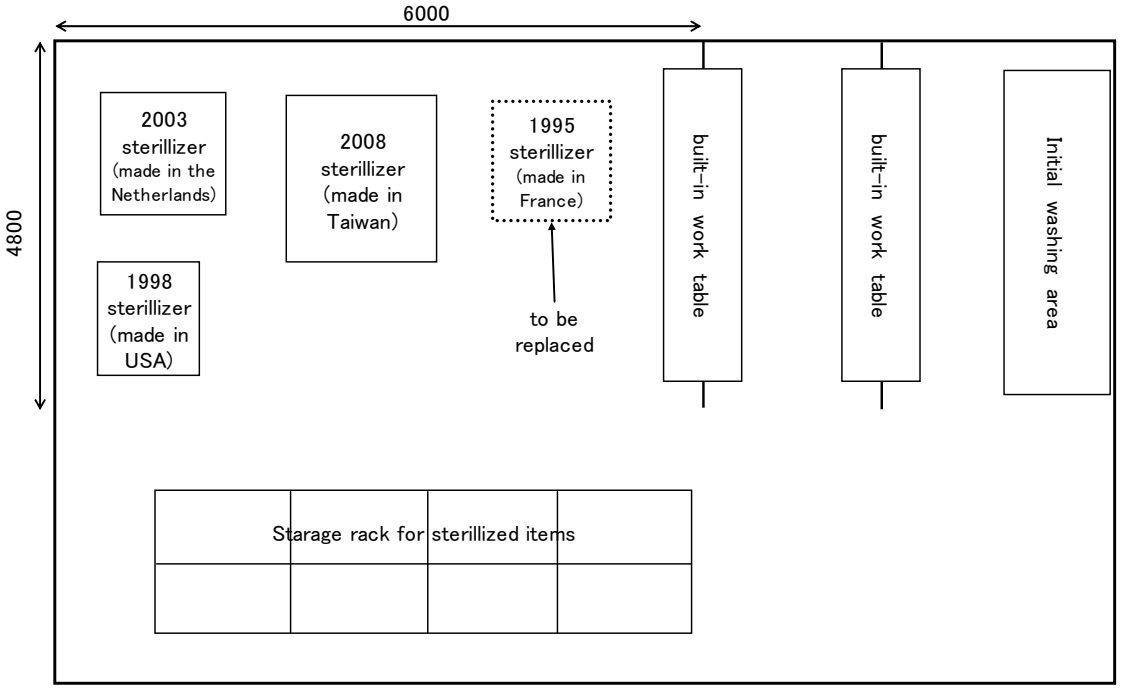


Figure 2-3 Layout plan of Autoclave

（3） Item No. 20 and 21

Equipment name: Autopsy table / Refrigerator, mortuary

Area: new building next to Bldg. H

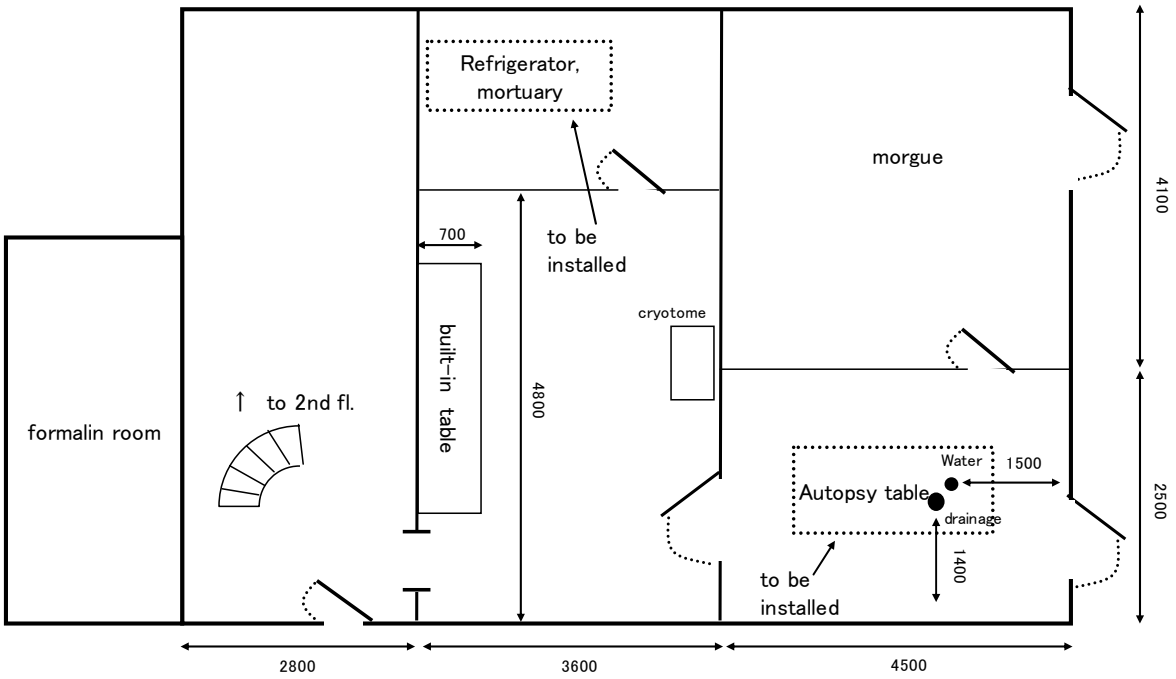


Figure 2-3 Layout plan of Autopsy table and Refrigerator,mortuary

（4） Item No. 105, 108 and 109

Equipment name: X-ray unit, mammograph （105）/X-ray unit, fluoroscopy （108）/X-ray unit, general （109）

Area: Floor 1/Bldg H

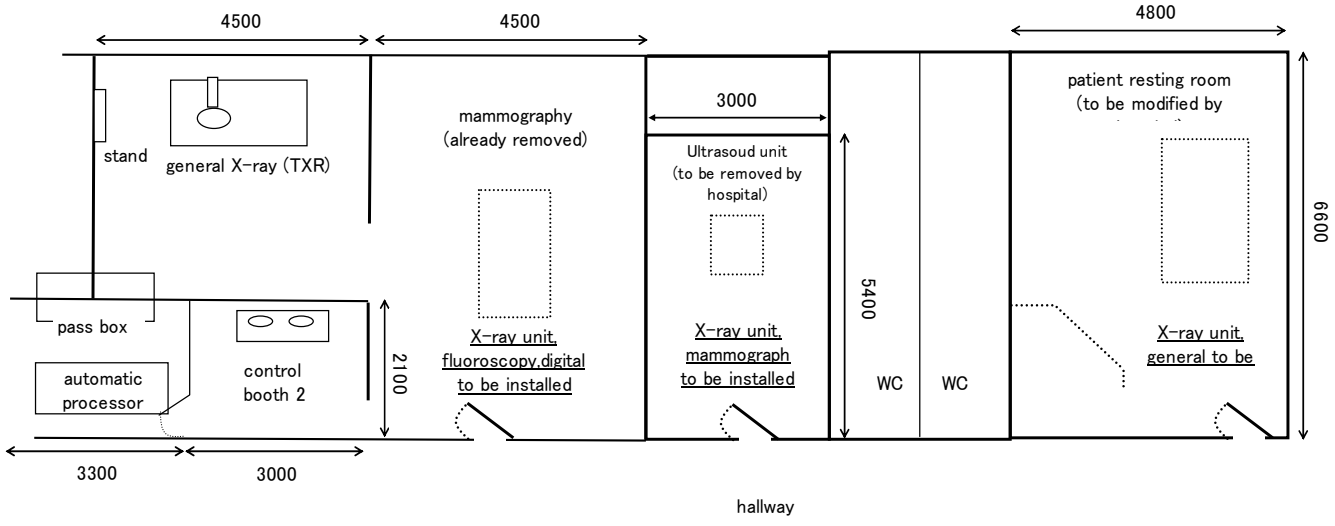


Figure 2-5 Layout plan of X-ray units Mammograph, Fluoroscopy,digital and General

2-2-4 Implementation Plan

2-2-4-1 Implementation Policy

This Project will be implemented based on the framework of grant aid assistance by the Japanese government. In other words, the Project will be officially launched after the approval by Japanese and Vietnamese governments and the exchanges of E/N and G/A that follow it. Then, a Japanese consultant company will undertake the execution design (development of design document), based on the contract exchanged with Viet Nam side. A Japanese equipment provider selected by a bid will deliver and install equipment.

The consultant and implementation organization of Viet Nam will review the construction plan at the execution design phase, and discuss for smooth implementation of constructions burdened separately by Japan and Viet Nam, according to the schedule shown in this report.

(1) Structure for Project Implementation

This Project is put under the control of the Ministry of Health of Viet Nam and implemented by NHOG.

(2) Consultant

After the exchange of E/N and G/A between Japanese and Vietnamese governments, the Japanese consultant company exchanges consultation agreement with Vietnamese implementation organization according to the procedure set for grant aid assistance. The consultant shall implement the following works based on the agreement.

- Execution design: Develop execution design document (specification and other technical materials)
- Bid: Selection of equipment provider and operation assistance related to procurement contract
- Procurement supervision: Supervision of procurement and installation of equipment, as well as supervision of instruction for operation and maintenance

Execution design includes the process to decide the details of procurement plan based on the basic design survey and the development of bidding material consisting of specification, bidding instruction and written agreement (proposal) necessary for the selection of Japanese equipment provider.

As for bidding, operations for implementation include a bid announcement, receipt of bid participation requests, qualification assessment, distribution of bid document, receipt of sealed proposal, evaluation of bid result and so on. Operation assistance includes giving advice on procurement agreement between implementation organization of Viet Nam and the provider and report etc. to the Japanese government.

Supervision on procurement includes confirmation of appropriate contract execution by the provider by confirming consistency with the procurement agreement. In addition, implement the following operations from the standpoint of an uninterested third party, for the promotion of the Project.

1） Instruction, advice and coordination on equipment procurement

Review milestone, plan etc. of procurement and provide instruction, advice and coordination to the provider.

2）Inspection and approval of installation drawing etc.

Carry out inspection and instruction on installation drawing and other documents submitted by the provider and give approval.

3）Confirmation and approval of equipment

Check if equipment prepared to be delivered by the provider are in line with the contract document and give approval for the application.

4）Inspection

Take part in the inspection of equipment at the production site as necessary, for the checkout of quality and performance.

5）Report on the progress status of installation work

Grasp the status of construction progress and the site, and report progress status of the installation work to the two country sides.

6）Training of equipment operation

Some of the equipment provided under the Project requires maintenance knowledge. On-site training on the operation, failure recovery and repair technique for such equipment needs to be provided for parties concerned in Viet Nam during installation, coordination and test operation phase. The consultant shall provide instruction and advice on the training plan.

(3) Provider of equipment and materials

The provider of equipment selected in the bidding process exchanges agreement with the Viet Nam side. The provider shall procure, deliver and install vehicles, equipment and materials based on the agreement and give instruction to the Viet Nam side on the operation and maintenance of provided equipment. The provider shall establish a system to continuously provide spare parts and consumable supplies (to be charged separately) and give relevant instructions after the delivery.

2-2-4-2 Implementation Conditions

(1) Procurement of equipment

1) Control milestone for installation

Installation of equipment and provision of operation instruction etc. have to take place while the medical facility is in operation. Therefore, precise and careful milestone control is necessary by close contact between Viet Nam side and the consultant for the implementation.

2) Necessity of engineers

For effective operation of equipment over time, it is necessary to dispatch an engineer to give instruction on proper operation and maintenance for healthcare professionals, after installation and test run of equipment. In the Project, an engineer will be dispatched from a equipment production company or its local agent to give instructions on installation, coordination, operation and maintenance.

2-2-4-3 Scope of Works

(1) Japan side

- Procurement and air or sea transport to the unloading site of the equipment subject to the cooperation
- Land transport from the unloading site to the delivery spot
- Installation, test run and adjustment of the equipment subject to the cooperation
- Explanation and instruction on the operation and maintenance of the equipment subject to the cooperation

(2) Viet Nam side

- After completion of the new facility, promptly relocate designated equipment and materials from the old facility to the new BC building
- Relocation and removal of existing equipment and preparation for installation of new ones
- Secure a carrying-in route of equipment
- Provision of temporary storage of equipment in the site
- Water supply (with valves), drainage (with end caps), power supply (with receptacles, circuit breakers), gas supply for medical purpose, reinforcement of facility foundation and other preparations for equipment installation

2-2-4-4 Consultant Supervision

(1) Policy of procurement supervision

According to the measure set for grant aid assistance by the Japanese government, the consultant shall organize a fixed project team for smooth implementation of execution design, in consideration of the main purpose of the basic design. Policy for procurement supervision is as shown below.

- Closely communicate with representatives of related organizations of the two countries for the completion of equipment procurement without delay.
- Give proper instructions and advice timely for the provider and their parties concerned from the standpoint of an impartial party.
- Give proper instructions and advice for the maintenance of equipment after delivery.
- The consultant shall observe delivery of equipment to confirm its completion and execution of the contract, to finalize the work with the approval from Viet Nam side.

(2) Procurement supervision plan

Consultant shall supervise implementation of the duty described above via procurement supervising engineer and inspection engineer. In addition, consultant shall dispatch engineers to the Project site as necessary for inspection, instruction and adjustment, depending on the progress status of the work and also dispatch engineers to Japan for communication and other backup activities for the Project. Also, the consultant shall report the progress status of the Project, payment arrangement and other necessary information to the related parties of the Japanese government.

2-2-4-5 Quality Control Plan

All the vehicles, equipment and materials to be procured for the Project are to be selected from the ones readily available in the market and with the history of provision to a medical facility in the past. In addition, select equipment and materials should satisfy either JIS, BS, UL, DIN or other equivalent quality standards. If the use of consumable supplies or reagents is required for any equipment, versatile ones should be selected that allow the use of consumable supplies or reagents available in Viet Nam.

2-2-4-6 Procurement Plan

(1) Procurement plan of equipment

In principle, equipment for procurement shall be either made in Japan or Viet Nam. However, if there is certain equipment made in other country and considered desirable for superiority in price or maintenance or for reason that the equipment is widely used in Viet Nam, procurement of such equipment can be considered after getting approval from the two countries. Other than that, certainty in delivery date and cost performance is considered important elements for procurement of equipment.

Following is a list of equipment to be provided in the Project with the possibility of procurement at a third county.

Table 2-4 Equipment with the possibility of procurement at a third country

Item No.	Name of Planned Equipment
1	Water bath
2	Hotplate
3	Staining machine
4	Automated cover slipper
5	Centrifuge, conical tube
6	Thin layer sample making system
7	Hematology analyzer
8	Polymerase chain reaction machine
9	Deep freezer
10	CO2 Incubator
11	Shaker
12	Deep freezer
13	ELISA system
14	Automatic bio-chemical analyzer
15	Centrifuge, RIA tube
16	Microscope
17	Autoclave
18	Paraffin procedure machine
19	Autopsy table
20	Refrigerator, mortuary
21	Microtome
22	Microscope, multi viewer

Table 2-4　Equipment with the possibility of procurement at a third country

Item No.	Name of Planned Equipment
23	Cryotome
24	Tissue Embedding Console System
27	Ventilator, newborn
28	Patient monitor, neonatal
29	Phototherapy unit
30	Infant incubator
35	Oxygen hood
36	Laryngoscope for newborn
44	Examination lamp
45	Delivery table
46	Delivery table, multi function
51	Obstetric monitor
52	Obstetric monitor, maternal monitoring
64	Hysteroscope set
65	Electrosurgical unit, LEEP
66	Colposcope
67	Sphygmomanometer, electric
68	Examination table, gynecology
71	Laparoscope set
72	Resectoscope set
73	Operation table
74	Operation lamp, mobile
75	Electrosurgical unit
76	Anesthesia machine
77	Laryngoscope
80	Patient monitor
81	ICU Bed
82	Respirator
83	Patient monitor, CO2 sensor
85	Electrocardiography
86	Fetal monitor
88	Midwifery simulator
89	Obstetric and gynecologic simulator
90	Baby doll, male (Bathing & Nursing)
91	Baby doll, female (Bathing & Nursing)
92	Baby doll, premature (Bathing & Nursing)
93	Breast examination simulator
94	Blood collection and intravenous injection arm simulator
95	Urethral catheterization simulator, female
96	Blood pressure measurement trainer
97	Female anatomic model
98	Pelvis model with fetal head
99	Development of fetus model
100	Torso dual sex

Table 2-4　Equipment with the possibility of procurement at a third country

Item No.	Name of Planned Equipment
101	Urinary system model
102	Projector
104	X-ray unit, mammograph

(2)　Transportation plan

a,　Equipment procured in Japan

•Sea transportation

A container of medical equipment will leave Yokohama port and unloaded at Hai Phong, the major port of Viet Nam. Regular liner service is available between the two ports and it takes about 1.0 month for one way trip.

•Land transportation

After custom clearance, the equipment will be transported on a truck from Hai Phong port to the Project site, which is about 100km apart on National Route 5. It takes about 0.3 month for the transport including custom clearance.

b,　Equipment procured locally

Agent dealing with equipment is located in central cities, Hanoi or Ho Chi Minh. Since it is general for an agent to directly transport equipment to a project site for delivery, equipment of the Project will also be transported to the Project site for delivery.

2-2-4-7　Operation Guide Plan

For proper use and maintenance of medical equipment, the provider shall carry out the following trainings in times of delivery, equip with technical material for maintenance and manual for operation/maintenance, and if possible, provide a list of contact points such as agent or manufacturers for making inquiry.

・Operation method (outline of equipment, operation procedure and confirmation items etc.)
・Method of regular maintenance (cleaning, adjustment and minor trouble shooting etc.)

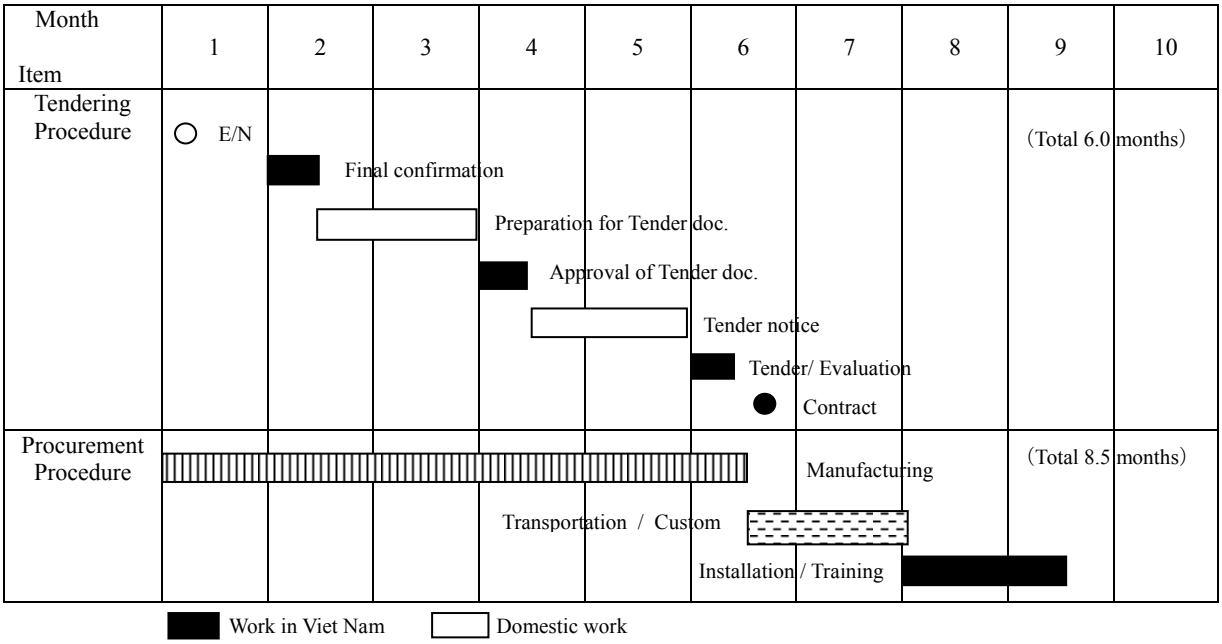
2-2-4-8　Soft Component (Technical Assistance) Plan

Soft component (Technical Assistance) is not included in the Project.

2-2-4-9　Implementation Schedule

After the Exchange of Notes (E/N) between Japan and Viet Nam on the requested assistance Project implementation, equipment will be procured according to the following schedule.

Table 2-5　Schedule for work implementation



2-3 Obligations of the Recipient Country

In the course of implementing the Project, the implementing agency of the recipient country will undertake the following tasks.

(1) Transportation and installation of the equipment to be provided

- Relocate the equipment to be deployed in the new BC building from the existing buildings to the new BC building and reinstall it properly immediately after the construction is completed.
- Remove and transfer the existing equipment and arrange installation space prior to the installation of the procured equipment.
- Secure access for delivering the equipment.
- Provide temporary storage for the equipment at the site.
- Provide utilities necessary for the equipment installation: water supply (with valves,) drainage (with end caps,) power supply (receptacles and circuit breakers), medical gases, reinforcement of infrastructure at the site, and so forth.

(2) Facilities and operation

- Appropriately assign users of the procured equipment at the Project site.
- Secure budget needed for maintaining the provided equipment.

(3) Miscellaneous

- Bear the payment commissions needed based upon the banking arrangement.
- Ensure prompt unloading and customs clearance of the products purchased under the grant aid.
- Exempt Japanese nationals from customs duties, value added taxes, and other levies to be imposed in Viet Nam with respect to the supply of the products and services under the verified contracts.
- Accord Japanese nationals such facilities as may be necessary for their entry into Viet Nam and stay therein for the performance of their services to be provided under the verified contracts.
- Provide all necessary measures including licenses and permissions for implementing the Project.
- Bear all expenses not included in the grant aid but needed for carrying out the Project.

2-4 Project Operation Plan

2-4-1 Operation Plan

As already described, the responsible agency for the Project is the MOH of Viet Nam and the implementing agency is NHOG. The Bureau of Maternal and Child Health, the Bureau of Medical Treatment, and the Bureau of Research and Training within the ministry are individually responsible for managing NHOG. The hospital has eight administrative departments, fourteen medical departments, nine support departments, and four centers with the Board of Directors at the top. The number of regular employees is approximately 760, including 270 medical staff except nurses, 270 nurses, and 220 administrative staff members. In addition, there are many medical personnel dispatched from other organizations.

The purpose of the requested cooperation assistance is to provide necessary equipment to the departments that will remain in the existing buildings—namely, cytogenetics, hematology, biochemical, infection control, biopsy anatomy, examination, the center for education and training, imaging diagnosis, and hospital general functions—and to those departments that will be relocated to the new BC building in the future—namely, neonatal, delivery, surgery, ICU, and pathology obstetrics. The equipment to be supplied under the Project is designed to have necessary specifications and be available in necessary quantities, with consideration given to NHOG's size and functions and the conditions of existing equipment, in line with the contents and past records of examinations. Thus, it is deemed that the provided equipment will be fully utilized under the current operation structure. As for the equipment to be introduced in the new buildings, the necessary specifications and the quantities are well calculated based on the size and functions of the new buildings and also the planned contents of examinations. Also, the quantities have been planned on the conditions that temporary storage space is secured in the existing buildings and that it can be put in use immediately after the procurement. Therefore, it is deemed that the equipment to be supplied in the Project will be maximally made use of immediately after the hand-over to the old buildings and the relocation to the new buildings.

2-4-2 Maintenance Plan

The Equipment Department, one of the eight administrative departments of NHOG, is responsible for maintaining all medical equipment across the hospital. Administration Department is responsible for the maintenance of ambulances and other facility-related equipment.

The work of the Equipment Department is carried out by two engineers, and five technicians. The Equipment Department keeps maintenance manuals of each type of equipment. The engineers and technicians perform simple repair, inspection, and parts replacement of test devices, radiological equipment, and surgical apparatus based on these documents. In case where repairing requires more technical knowledge, they will request repair service of the reference manufacturer or distributor based on the maintenance contracts.

To repair a piece of equipment, the user who has found a problem fills out a prescribed form, and submits it

to the Equipment Department. The department, upon receiving the request, will dispatch a staff member for determining whether it should be repaired by the staff or the manufacturer. In 2008, there will were about 500 requests for repairing medical equipment, of which 430 cases were taken care of by the staff of NHOG.

The work of the Administration Department is carried out by one engineer, two technicians, and five other staff members. Especially, ambulances are maintained by the staff of the Administration Department, to the extent that routine cleaning, oil change, and visual inspection are concerned. It is required to undergo safety inspections two and half years after the procurement of a new ambulance, and afterward, to take prescribed checks by a private, licensed maintenance shop annually.

2-5 Project Cost Estimation

2-5-1 Initial Cost Estimation

(1) Cost to be borne by Viet Nam 14,980.60 US dollars (app. 1.44 million yen)

Table 2-6 Costs to be borne by Viet Nam

Item	Estimated cost
Commissions for banking arrangement	USD 6,507.60 (app. 0.63 million yen)
Construction of new B/C buildings	Already budgeted, the works have commenced
Three-phase power supply works in the existing facilities (radiological equipment, mortuary refrigerators, sterilizers)	USD 6,017.05 (app. 0.58 million yen)
Removal of existing fixed equipment (sterilizers)	USD 640.00 (app.0.06 million yen)
Removal of existing wall and construction of new walls (according to the layout of mortuary refrigerators)	USD 1815.95 (app.0.17 million yen)
Total	USD 14,980.60 (app.1.44 million yen)

USD1=96.08 yen

(2) Calculation conditions

(i) Estimated as of: April 2009

(ii) Exchange rate: (TTS six-month average)

- US dollar USD 1.00 = 96.08 yen
- Euro € 1.00 = 126.06 yen

(iii) Period of procurement: The time required for detailed designing and equipment procurement is as given in the implementing schedule.

(iv) Miscellaneous: Calculation will be carried out based on the grant aid assistance scheme of the Government of Japan.

2-5-2 Operation and Maintenance Cost

(1) Prediction for NHOG revenue and expenditure

NHOG's revenue and expenditure as of 2010, the target year for the delivery of equipment, are estimated as follows.

1) Revenue

NHOG’s revenues in 2009 and beyond are estimated based on the average of the growth rates from 2003 to 2006 and from 2007 to 2008 (22.64%). The revenue conspicuously jumped by 54.7% from 2006 to 2007, because it was an auspicious year for birth; therefore, this figure has been excluded as an

extraordinary phenomenon.

In passing, although the operation theaters, delivery rooms, assisted reproduction technology center, etc. become larger when the new BC building is completed at the end of 2011, a resulting revenue increase is not considered.

2) Expenditure

Until 2006, the contents of the expenditure needed to be approved by the MOH. Since 2007, hospitals have been able to determine the contents of expenditure on their own. Because the expenditure items before and after 2007 differ, though slightly, the expense of each item is predicted based on an average ratio of each item in 2007 and 2008. Furthermore, NHOG borrows from banks for their construction project and has to repay for the 10 years from 2009. The reimbursement is added as a new expenditure item. In summary, the amount of each item is derived by i) subtracting the reimbursement for the construction project from the total revenue and ii) multiplying that amount by the ratio of the item.

Table 2-7 Prediction for NHOG revenue and expenditure (2009-2011) (Unit: 1,000VND)
(VND1,000=USD0.0561)

Revenue	2008	Factor	2009	2010	2011
Total revenue	**195,806,971**	**122.64%**	**240,146,445**	**294,526,363**	**361,220,331**
Amount after subtracting the loan repayment			**212,146,445**	**266,526,363**	**333,220,331**
Expenditure	2008				
Salary	8,89 0,788	4.28%	9,079,868	11,407,328	14,261,830
Technical renting	2,672,339	1.00%	2,121,464	2,665,264	3,332,203
Supplements/bonus	7,302,027	3.68%	7,806,989	9,808,170	12,262,508
Social affair	2,062,769	1.01%	2,142,679	2,691,916	3,365,525
Other personal reimbursement	24,259,180	10.41%	22,084,445	27,745,394	34,688,236
Public services	4,625,331	2.32%	4,921,798	6,183,412	7,730,712
Stationery/office equipment	305,376	0.16%	339,434	426,442	533,153
Communications	437,764	0.20%	424,293	533,053	666,441
Conferences/workshop	245,795	0.13%	275,790	346,484	433,186
DSA for provincial trips: allowances	171,488	0.10%	212,146	266,526	333,220
Renting fee	562,919	0.37%	784,942	986,148	1,232,915
Overseas trips	28,424	0.01%	21,215	26,653	33,322
Routine repair for goods	**713,457**	0.69%	**1,463,810**	**1,839,032**	**2,299,220**
Large repair	**3,530,000**	1.11%	**2,354,826**	**2,958,443**	**3,698,746**
Technical improvement	**92,255,106**	44.76%	**94,956,749**	**119,297,200**	**149,149,420**
Equipment purchase	12,010,478	5.22%	11,074,044	13,912,676	17,394,101
Other expenses	50,534,770	23.69%	50,257,493	63,140,095	78,939,896
Computer system	0	0.05%	106,073	133,263	166,610
Construction	1,054,300	0.35%	742,513	932,842	1,166,271
Equipment	668,100	0.34%	721,298	906,190	1,132,949
Infrastructure	277,000	0.12%	254,576	319,832	399,864
Loan repayment	**0**		**28,000,000**	**28,000,000**	**28,000,000**
Expenditure total	**212,608,907**	**100.00%**	**240,146,445**	**294,526,363**	**361,220,331**

(2) Prediction for maintenance costs

The operation and maintenance cost in the NHOG budget terms corresponds to the combined amount of routine repair for goods, large repair, and technical improvements in Table 2-7 above. The maintenance cost in 2010 is estimated at approximately 124 billion dong.

As shown in Appendix 9, maintenance costs to be incurred from the use of the equipment to be supplied in the Project are estimated at about 66.37 billion dong per year, of which 21.99 billion is earmarked for the maintenance of the replaced equipment, i.e., 21.95 billion for consumables and 40 million for maintenance contracts. These costs needed in association with the equipment to be replaced account for roughly 22.8% of the 96.5 billion dong in 2008. As NHOG shoulders maintenance costs for the existing equipment even now, it is deemed that there is no significant difference in the maintenance costs before and after the replacement.

On the other hand, the expenses for consumables and others associated with the introduction of new and additional equipment are calculated as about 44.33 billion dong. Combined with approximately 50 million dong for servicing contracts with the distributors, a total of approximately 44.38 billion dong will be needed for the maintenance of the new and additional equipment. This is equivalent to around 35.8% of the estimated amount for 2010 of about 124 billion dong

Of the 43.67 billion for the new and additional equipment, 40.78 billion dong (app. 93.4%) is to be spent on expendables and test reagents in relation to the apparatus for new tests, such as the thin layer sample making system, polymerase chain reaction machine, and the ELISA system. Basically, these expenses will be covered by the test fees collected from the patients, so that a net increase will be 3.60 billion dong—the remainder of subtracting 40.78 billion dong from 44.38 billion—which corresponds to approximately 2.9% of the 124 billion dong. Thus, it is deemed that this level of maintenance cost is manageable within the operation budget of the hospital, without causing a deficit in the budget.

2-6 Other Relevant Issues

Equipment to be provided in the Project is planned to be allocated to the existing facility. Building BC is slated to be completed about one year after the delivery of the equipment and five departments of neonatal, delivery, surgery, ICU and pathology obstetrics plan to move to the new building. Thus, the allocation plan of the equipment to be provided for these departments needs to be fully understood at the time of delivery. Although the Vietnamese government is responsible for the relocation, the plan should be also understood.

Chapter 3. Project Evaluation and Recommendations

Chapter 3 Project Evaluation and Recommendations

3-1 Project effects

NHOG, the subject of the Project, is positioned as the top referral hospital for obstetrics and gynecology in Viet Nam. It performs approximately 6,000 gynecological surgeries and more than 15,000 high-risk deliveries, including caesarean sections, and has at least 2,000 premature births every year. In addition, the hospital deals with approximately 4,000 low-risk deliveries annually. The year-on-year growth rates in the past five years have been a 5 to 10% rise on average and the number of premature births has increased at a rate of 20% or higher. The number of tests and examinations for outpatients is roughly 19,000 and that of outpatient treatments 16,000 more or less. The growth in the number of tests and treatments compared with the previous year has been approximately 15% on average for the five-year period.

In 2008, 4,385 normal deliveries and 6,150 vacuum extractions and forceps deliveries were performed on 11 tables and 8,731 caesarean sections and 6,277 other gynecological surgeries on 8 tables. Patients' demand is on the constant rise having reached 193,356 tests and 164,287 treatments. Some beds in hospital buildings have to accommodate 2 or 3 patients each. The size of NHOG's facilities, such as delivery rooms, operation theatres, and beds, has almost come to saturation. Furthermore, many equipment pieces, including delivery tables and delivery monitors, were introduced in the 1990s and the superannuated facilities and equipment hamper appropriate medical services. In the meantime, NHOG assumes a significant role in improving the technical level of gynecological examination in Viet Nam, through provision of education and training to provincial hospitals that are positioned at lower levels in the referral system. However, it has not been successful in bringing sufficient effects as it possesses only one delivery simulator as training equipment.

The table below summarizes the effects to solve the above-mentioned problems and the degree of improvement from the current status to be brought about by the implementation of the requested assistance Project.

Table 3-1 Project effects and the degree of improvement from the current situation

Current status / issues to be addressed	Countermeasures to be introduced by the requested Project	Direct effects and degree of improvement	Indirect effects and degree of improvement
Though NHOG is a hospital positioned at the top of the referral system, it is unable to provide sufficient services with its superannuated facilities and equipment.	Provide equipments for cytogenetic testing, hematology testing, biochemistry testing, infection control, microorganism testing, neonatal, delivery, examination, surgery, ICU, pathology obstetrics, picture	The numbers of deliveries, gynecological operations, and mammography tests per year will increase.	NHOG's improved examination functions will satisfy patients' demand.

	diagnosis and hospital.		
The deficiency in training equipment makes it difficult to allocate sufficient time to hands-on training in education and training sessions for lower-level hospitals.	Provide equipments for center for education and training	The number of training courses will increase. The number of exercises using models will increase. The technical level of co-medicals in the lower-level hospitals will improve.	The referral system will be firmly established with provincial hospitals performing safe deliveries.

3-2 Recommendations

3-2-1 Challenge that should be Addressed by the Recipient Country and Recommendations

The Viet Namese side is expected to fulfill the following tasks in order to sustain the effects of the equipment to be procured under the Project over a long term.

(1) Complete on schedule the construction of new BC Building, which is being carried out under Viet Nam's own funds. Relocate the relevant departments to the new building smoothly after the completion and immediately start examination activities.

(2) Improve the service quality when the refurbished equipment and facilities satisfy patients' demand.

(3) Build the capacity of co-medicals and refurbish the facilities at lower-level hospitals so as to establish a gynecological referral system by realizing safe deliveries in provinces and preventing concentration of deliveries on hospitals in large cities.

3-2-2 Technical Assistance and Collaboration with Other Donors

The Government of Japan is planning a new technical cooperation Project which aims at capacity development of co-medicals in Viet Nam. In this Project, a possibility of using the training equipment to be procured under the requested Project in gynecological training is being studied as a possibility for NHOG to indirectly take part. Thus, NHOG is expected to contribute to the improvement of the overall medical level of Viet Nam.

[Appendix]

1. Member List of the Study Team
2. Study Schedule
3. List of Parties Concerned in the Recipient Country
4. Minutes of Discussions (Basic Design)
5. Minutes of Discussions (Explanation of the Draft Report)
6. Examination of the Requested Equipment
7. Equipment List
8. Outline of Major Equipment
9. Operation and Maintenance Cost for the Equipment
10. References

1. Member List of the Study Team

Appendix-1

Member List of the Study Team

1. Basic Design Study

No.	Name	Position	Organization
1	Mr. Keiich TAKEMOTO MScH	Team Leader	Director Health Human Resources Division Health Human Resources and infectious Disease Control Group Human Development Department JICA
2	Minoru AKIYAMA MD	Technical Advisor	JICA Expert Policy Advisor to the Ministry of Health (Viet Nam)
3	Ms. Haruka SHINDO	Project Coordinator	Health Human Resources Division Health Human Resources and infectious Disease Control Group Human Development Department JICA
4	Mr. Shigehito AKAGI	Project Manager/ Equipment Planner I	International Total Engineering Corporation (ITEC)
5	Mr. Hironori NAKAJIMA	Equipment Planner II/ Facilities Planner	International Total Engineering Corporation (ITEC)
6	Mr. Katsuro YAJIMA	Equipment Planner III/ 研修計画	International Total Engineering Corporation (ITEC)
7	Ms Tomomi TAKENAKA	Procurement/ Cost Planner	International Total Engineering Corporation (ITEC)

2. Explanation on Draft Report

No.	Name	Position	Organization
1	Mr. Keiich TAKEMOTO	Team Leader	Director Health Human Resources Division Health Human Resources and infectious Disease Control Group Human Development Department JICA
2	Dr. Minoru AKIYAMA	Technical Advisor	JICA Expert Policy Advisor to the Ministry of Health (Viet Nam)
3	Ms Haruka SHINDO	Project Coordinator	Health Human Resources Division Health Human Resources and infectious Disease Control Group Human Development Department JICA
4	Mr. Shigehito AKAGI	Project Manager/ Equipment Planner I	International Total Engineering Corporation (ITEC)
5	Mr. Katsuro YAJIMA	Equipment Planner II/ Facilities Planner	International Total Engineering Corporation (ITEC)

2. Study Schedule

Study Schedule (Basic Design Study)

Day	Date		Official Members			Consultant Member			
			Team Leader Mr. Keiich Takemoto	Technical Advisor Minoru Akiyama MD.	Project Coordinator Ms. Haruka Shindo	Project Manager/ Equipment Planner I Mr. Shigehito Akagi	Equipment Planner II/ Facility Planner Mr. Hironori Nakajima	Equipment Planner III/ Training Planner Mr. Katsuro Yajima	Procurement/ Cost Planner Ms Tomomi Takenaka
	15-Mar	Sun							
1	16-Mar	Mon				NRT-HAN (1810-2225)			
2	17-Mar	Tue				Courtesy call and meeting at JICA office, Discussion with NHOG (Explanation of IR, Confirmation of Study Schedule, Submission of QTR)			
3	18-Mar	Wed				Survey on NHOG			
4	19-Mar	Thu				Survey on NHOG			
5	20-Mar	Fri				Discussion with NHOG (Activities, staff, budget)	Survey on NHOG (Facilities, training program)		Survey on equipment local agents
6	21-Mar	Sat				Discussion with NHOG			
7	22-Mar	Sun	NRT-HAN Report from consultant		NRT-HAN Report from consultant	Compiling interim report Team Meeting			
8	23-Mar	Mon	Courtesy call and meeting at JICA office and EOJ				Courtesy call and meeting at JICA office and NHOG		
9	24-Mar	Tue	Courtesy call and meeting at MOH, Survey on NHOG				Survey on NHOG		
10	25-Mar	Wed	Survey on NHOG				Survey on NHOG		
11	26-Mar	Thu	Discussion with MOH regarding the Minutes of Discussions				Survey on NHOG		
12	27-Mar	Fri	Singing on the Minutes of Discussion,Report to JICA and EOJ HAN-NRT		HAN-NRT				
13	28-Mar	Sat	Arrival NRT		Arrival NRT	Team Meeting			
14	29-Mar	Sun				Team Meeting			
15	30-Mar	Mon				Survey on NHOG			
16	31-Mar	Tue				Survey on other facilities (Bach Mai Hospital, National Hospital of Pediatrics)			
17	1-Apr	Wed				Discussion with NHOG (Activities)	Discussion with NHOG (Technical specifications)	Discussion with NHOG HAN-NRT (2330-0655+1)	Survey on equipment local agents
18	2-Apr	Thu				Survey on other facilities (Hanoi city mother and children hospital, Reproductive health center)		Arrival NRT	Survey on equipment local agents
19	3-Apr	Fri				Discussion with MOH (Upper-level plan, etc.), Discussion with NHOG (Technical specifications)			HAN-NRT (2330-0655+1)
20	4-Apr	Sat				Team Meeting			Arrival NRT
21	5-Apr	Sun				Team Meeting			
22	6-Apr	Mon				Discussion with NHOG (data collection)	Additional discussion with NHOG		
23	7-Apr	Tue				Discussion with NHOG (data collection)	Additional discussion with NHOG		
24	8-Apr	Wed				Discussion with NHOG (data collection)	Additional discussion with NHOG		
25	9-Apr	Thu				Discussion with NHOG (data collection)	Additional discussion with NHOG		
26	10-Apr	Fri				Report to JICA office HAN-NRT (2330-0655+1)			
27	11-Apr	Sat				Arrival NRT			

NRT = Tokyo International Airport
HAN = Hanoi

MOH = Ministry of Health
NHOG = National Hospital for Obstetrics and Gynecology
EOJ = Embassy of Japan
JICA = Japan International Cooperation Agency

IR = Inception Report
QTR = Questionnaire

Study Schedule (Explanation of the Draft Report)

Day	Date		Official Members			Consultant Member	
			Team Leader Mr. Keiich Takemoto	Technical Advisor Minoru Akiyama MD.	Project Coordinator Ms. Haruka Shindo	Project Manager/ Equipment Planner I Mr. Shigehito Akagi	Equipment Planner II/ Facility Planner Mr. Katsuro Yajima
1	4-Aug	Tue				NRT-HAN (1100-1510)	
2	5-Aug	Wed				Courtesy call and meeting at JICA office, Discussion with NHOG (Explanation of Draft Report, Confirmation of Study Schedule)	
3	6-Aug	Thu				Explanation of Draft report	Confirmation of equipment specification
4	7-Aug	Fri				Explanation of Draft report	Confirmation of equipment specification
5	8-Aug	Sat				Additional survey on NHOG	
6	9-Aug	Sun	NRT-HAN Report from consultant		NRT-HAN Report from consultant	Compiling interim report Team Meeting	
7	10-Aug	Mon	Courtesy call and meeting at JICA office and MOH, Disccusion with NHOG				
8	11-Aug	Tue	Discussion with NHOG for Minutes of Discussions				
9	12-Aug	Wed	Singing on the Minutes of Discussion,Report to JICA and EOJ			HAN-NRT (2330-0655+1)	
10	13-Aug	Thu	HAN-PHN		JICA office HAN-KIX	Arrival NRT	
11	14-Aug	Fri			KIX-HND		

3. List of Parties Concerned in the Recipient Country

Name	Position	Section
Ministory of Health (MOH)		
Dr. TRAN THI GIANG HUONG	Director General	International Cooperation Dept.
Dr. NGUYEN THI MINH CHAU	Deputy Director General	International Cooperation Dept.
Dr. NGUYEN VANTIEN	Vice Director	Medical Service Administration Dept.
Dr. NGUYEN DUC TIEC	Vice Director	Professional and Legislative Division
Mrs. NGUYEN VAN TUN	Deputy Director	Medical Service Administration
Dr. NGUYEN DUCVIAH	Senior Officer	Mother & Child Health Dept.
Mr. NGUYEN VAN QUANG	Expert	Planning and Finance Dept.
Mrs. PHAN THI HAI	Expert	Medical Service Administration
Dr. PHAN THI HAI	Expert of MSA	
Ms. VU HA THU	Official incharge of Japan & Korea	International Cooperation Dept.

Name	Position	Section
Ministry of Planning and Investment (MIP)		
Mr. NGUYEN XUAN TIEN	Deputy Director General	Foreign Economic Relationship Dept.

Name	Position	Section
National Hospital for Obstetrics and Gynecology (NHOG)		
Dr. NGUYEN VIET TIEN	Director	NHOG
Dr. VU BA QUYET	Deputy Director	NHOG
Mrs. PHAN PHUONG LAN	Deputy Director	Center for Education & Training
Dr. TRAN QUOC VIET	Deputy Director. Head of Department	Imaging Diagnosis Dept.
Dr. LE DINH CUONG	Head of Department	Equipment Dept.
Dr. LE HOAI CHUONG	Head of Department	General Planning Department
Dr. LE QUANG VINH	Head of Department	Pathology Dept.
Dr. LE THIEN THAI	Head of Department	Delivery Dept.
Dr. NGUYEN HUONG DUONG	Head of Department	Infection Control Dept.
Dr. NGUYEN THANH HA	Head of Department	Neonatal Dept.
Dr. NGUYEN THU HUONH	Head of Department	Genetic Dept.
Dr. NGUYEN VU THUY	Head of Department	Micro-organism Dept.
Dr. THU THUY CUNG	Head of Department	Examination Dept.
Dr. TRAN DINH TU	Head of Department	Personnel Dept.
Dr. TRAN THI THANH HA	Head of Department	Pharmaceutical Dept.
Dr. TRAN THI THU HA	Head of Department	Hematology Dept.
Dr. TRAN THI VAN ANH	Head of Department	Bio-chemistry Dept.
Mr. DOAN HONG HAI	Head of Department	Administrative Dept.
Mr. LE DINH CUONG	Head of Department	Equipment Dept.
Mrs. BUI THI THANH	Head of Department	Financial Dept.
Dr. HOANG	Head of DOHA	Center for Prenatal Diagnosis
Dr. NGUYEN THANH TAM	Deputy head of Dept.	Personnel Dept.
Ms HANG	Anesthesiologist	Operating Theater
Ms NGUYEN BICH HA	Head of Nurse	Examination Dept.
Ms NGUYEN HYI VINH	Head of Nurse	Delivery Dept.
Ms PHUC	Head of Nurse	Pathology Obstetric Dept.
Ms NGUYEN THU HUYEN	Secretary	NHOG
Mr. BUI THANH VAN	Staff	Micro-organism Dept.
Mr. PHAM HOAI SON	Staff	General Planning Dept.
Mr. NGUYEN NGOC TIEP	Engineer	Administrative Dept.
Mr. TRINH THI KIM LY	Staff	Research Dept.
Mr. ANH	Technician	Center for Prenatal Diagnosis
Mr. TRAN XUAN DUONG	Construction Consultant	
Dr. LE ANH TUAN	Deputy Director	NHOG
Dr. NGUYEN HOANG NGOC	Deputy head of Dept.	Surgery Dept.
Mr. NGUYEN THI THANH	Staff	Surgery Dept.
Dr. VU VAN DU	Deputy head of Dept.	Medical technical Dept.
Dr. PHAM CHI MAI	Deputy head of Dept.	Imaging Diagnosis Dept.
Ms TRAN THI PHUC	Head of Nurse	Pathology Obstetric Dept.

Name	Position	Section
Bach Mai Hospital		
Dr. NGUYEN VIET HUNG	Chief of Dept.	Obstetrics & Gynecology Dept.
Mr. BUI XUAN VINH	Head of Dept.	Medical Equipment Dept.

Name	Position	Section
Hanoi city Hospital of Obstetrics & Gynecology		
Dr. NGUYEN DUY ANH	Vice Director	Hanoi City Hospital of Obstetrics & Gynecology
Dr. TO MINH HUDOY	Vice Director	Hanoi City Hospital of Obstetrics & Gynecology

Name	Position	Section
Hanoi Reproductive Health Care Center		
Dr. VU THANH HUONG	Vice Director	Hanoi Reproductive Health Care Center

Name	Position	Section
National Hospital of Pediatrics (NHP)		
Dr. TRAN PHAN DUONG	Deputy Director	National Hospital of Pediatrics
Mr. HAN	Staff	Equipment Dept.

Name	Position
Embasy of Japan	
Mr. ATSUNORI NISHINO	Second Secretary

Name	Position
JICA Vietnam Office	
Mr. MOTONORI TSUNO	Chief Representative
Mr. YASUHIRO TOJO	Senior Representative
Mr. SHINJI YANAGAWA	Deputy Resident Representative
Ms. CHU XUAN HOA	Local staff

4. Minutes of Discussions (Basic Design)

MINUTES OF DISCUSSIONS ON PREPARATORY SURVEY ON THE PROJECT FOR EQUIPMENT SUPPLY IN THE NATIONAL HOSPITAL FOR OBSTETRICS AND GYNECOLOGY IN THE SOCIALIST REPUBLIC OF VIET NAM

In response to the request from the Government of the Socialist Republic of Viet Nam (hereinafter referred to as "Viet Nam"), the Government of Japan decided to conduct a Preparatory Survey (Basic Design) on the Project for Equipment Supply in the National Hospital for Obstetrics and Gynecology in the Socialist Republic of Viet Nam (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Viet Nam the Preparatory Survey Team (hereinafter referred to as "the Team"), which is headed by Mr. Keiichi TAKEMOTO, Director, Health Human Resources Division, Health Human Resources and Infectious Disease Control Group, Human Development Department, JICA, and is scheduled to stay in the country from March 16 to April 10, 2009.

The Team held discussions with the officials concerned of the Government of Viet Nam and conducted a field survey.

In the course of discussions and field survey, both parties have confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Preparatory Survey Report.

Hanoi, March 27, 2009

Mr. Keiichi TAKEMOTO
Leader
Preparatory Survey Team
Japan International Cooperation Agency
Japan

Dr. Nguyen Viet Tien
Director
National Hospital for Obstetrics and Gynecology
Ministry of Health
Socialist Republic of Viet Nam

Dr. Tran Thi Giang Huong
Director General
International Cooperation Department
Ministry of Health
Socialist Republic of Viet Nam

Mr. Nguyen Xuan Tien
Deputy Director General
Foreign Economic Relations Department
Ministry of Planning and Investment
Socialist Republic of Viet Nam

ATTACHMENT

1. Objectives of the Project

The objectives of the Project are

1) to improve the diagnosis and treatment service in the National Hospital for Obstetrics and Gynecology(hereinafter referred to as "NHOG") , and
2) to strengthen the training, monitoring and supervision to Provincial Hospitals and Reproductive Health Care Centers by NHOG.

2. Project Site

The Project Site is the NHOG in Hanoi City.

3. Responsible and Implementing Agency

3-1. The Responsible Agency is the Ministry of Health, the Government of Viet Nam.

3-2. The Implementing Agency is the NHOG, the Ministry of Health, the Government of Viet Nam.

4. Items Requested by the Government of Viet Nam

After discussions with the Team, the following items were finally requested by the Viet Nam side. (Details of items are listed in Annex-1.) JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

5. Japan's Grant Aid Scheme

5-1. The Viet Nam side understands the Japan's Grant Aid Scheme explained by the Team, as described in Annex-2.

5-2. The Viet Nam side will take the necessary measures, as described in Annex-3, for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented.

6. Schedule of the Survey

6-1. The consultant members of the Team will proceed to further studies in Viet Nam until April 10, 2009.

6-2. JICA will prepare a draft report in English and dispatch a draft report explanation mission to Viet Nam. JICA will complete the final Preparatory Survey (Basic Design) Report and send it to the Government of Viet Nam. These timings will be decided hereafter.

7. Other Relevant Issues

7-1. Modification on the title of the Project

Both sides agreed to consider the modification on the title of the Project, which is more suitable for the actual contents of the Project.

7-2. Construction of new building

Concerning the equipment supply for the new building to be constructed by the Government of Viet Nam on their responsibility, the Government of Japan shall decide on this matter, based on the report by the Team on the necessity of the equipment and the construction schedule of the new building.

The Viet Nam side explained the construction schedule, confirming that the new building will be completed by October 2011.

The new building will include assisted reproductive technology center, obstetrics 1, obstetrics 2, surgery, neonatal, delivery, ICU, emergency room(belong to examination department), and other support service section and car parking area.

7-3. Component of requested equipment and its priority

1) Both sides agreed to prioritize the equipment for which the NHOG can accomplish its role as a top referral hospital.

2) The equipment listed in Annex-1 are requested by the departments and centers of the NHOG below mentioned.

<the departments and centers which are going to move to the new building>

- neonatal department
- delivery department
- surgery department
- pathology obstetrics (1) department
- ICU
- assisted reproductive technology center

<the departments and centers which will remain in the existing buildings>

- cyto-genetics department
- hematology department
- bio-chemistry department
- biopsy anatomy department
- examination department
- education and training center
- imaging diagnosis department

7-4. The collaboration between the previous/ongoing Technical Cooperation Projects by JICA and the Project

Both sides agreed that the Project will be implemented in collaboration with previous and ongoing JICA's Technical Cooperation Projects in the health sector. Both sides agreed that by this collaboration, JICA's cooperation in the health sector will contribute to the effective implementation of the Viet Nam National Strategy in reproductive health care in the period 2001 - 2010.

7-5. Budget for operation and maintenance of the equipment

NHOG promised to allocate to the Project necessary budget for operation and maintenance cost such as water and electricity charges for facilities, repairs, spare parts, reagents, consumables and periodical maintenance contracts after handing over the Project.

Annex-1: Requested Equipment
Annex-2: Japan's Grant Aid Scheme
Annex-3: Major Undertakings by each Government

Project for Equipment Supply in National Hospital for Obstetric and Gynecology

Requested Equipment

Department	Function	No.	Name of Equipment	Q'ty	Priority
Cytogenetics Department	Genetic reader	1	Automatic karyotyping system	1	B
	Essential lab equipment -ELE	2	Bioclean bench	1	B
	Triple test reader	3	FISH system	1	B
	ELE	4	Slide warmer	1	B
	ELE	5	Centrifuge	2	B
	ELE	6	CO2 Incubator	2	B
	ELE	7	Shaker	2	B
	Sample keeping	8	Refrigerator	1	B
	Sample keeping	9	Deep freezer	4	B
	Cytopathology	10	Water bath	3	A
	Cytopathology	11	Hotplate	1	A
	Cytopathology	12	Auto PAP system	1	A
	Cytopathology	13	Staining machine	1	A
	Cytopathology	14	Automated Cover slipper	1	A
	Cytopathology	15	Centrifuge	1	A
	Cytopathology	16	Thin Pre PAP test system	1	B
	Histopathology	17	Cryotome	1	B
	Histopathology	18	Tissue processor	1	B
	Histopathology	19	Tissue Embedding Console System	1	B
	Cytopathology	20	Microscope, fluorescence	1	A
	Cytopathology	21	Automatic slide Stainer	1	B
Hematology Department	Double test	22	ELISA system	1	A
	ELE	23	Hematology Analyzer	1	A
	HIV confirm test	24	Polymerase Chain Reaction machine	1	A
Bio-chemistry Department	ELE	25	Automatic bio-chemical analyzer	1	A
	ELE	26	Automatic immunator	1	A
	ELE	27	Automatic urine analyzer	1	A

Project for Equipment Supply in National Hospital for Obstetric and Gynecology

Requested Equipment

Department	Function	No.	Name of Equipment	Q'ty	Priority
	ELE	28	Centrifuge	1	A
	ELE	29	Deep freezer	6	B
	ELE	30	Autoclave, vertical	1	A
	ELE	31	Microscope	2	A
Biopsy Anatomy Department	Histopathology	32	Immunohisto chemical stainer	1	A
	Histopathology	33	Paraffin procedure machine	1	A
	Histopathology	34	Autopsy table	1	A
	Histopathology	35	Refrigerator, mortuary	1	B
	Histopathology	36	Microtome	1	A
	Histopathology	37	Microscope, multi viewer	1	A
Neonatal Department	Resuscitation	38	Ventilator	2	B'
	Emergency	39	Infusion pump	8	A'
	Newborn Care-NC	40	Syringe pump	15	A'
	Resuscitation	41	Ventilator, newborn	5	A'
	Resuscitation	42	Patient monitor, neonatal	5	A'
	Resuscitation	43	CPAP machine	20	B'
	Jaundice treatment	44	Phototherapy unit	10	B'
	NC	45	Infant incubator	12	A'
	NC	46	Suction unit for infant	10	B'
	NC	47	Ambu set for infant	5	A'
	Emergency	48	Oxygen mask for infant	30	B'
	Transporting	49	IV stand	10	A'
	Transporting	50	Infant trolley	5	A'
	NC	51	Oxygen hood	20	A'
	Bathing	52	Newborn bath tub	10	B'
	Anesthetic	53	Laryngoscope for infant and newborn	20	A'
	nursing	54	Automatic powder/milk preparation system	1	B'

Project for Equipment Supply in National Hospital for Obstetric and Gynecology

Requested Equipment

Department	Function	No.	Name of Equipment	Q'ty	Priority
	Intensive care	55	Anaesthetic machine, neonatal	1	A'
Delivery Department	Midwifery	56	Instrument set for normal delivery	50	A'
	Diagnosis	57	Doppler, fatus	5	A'
	Management	58	Computer with printer	3	B'
	General care	59	Syringe pump	15	A'
	Nutrition care	60	Microwave	5	B'
	General care	61	Medicine box	4	B'
	General care	62	Instrument box	4	B'
	General care	63	Clothes box	2	A'
	Transporting	64	IV stand	5	A'
	Transporting	65	Instrument trolley	8	A'
	Transporting	66	Trolley for monitoring machine	17	A'
	Transporting	67	Wheel chair	10	A'
	Transporting	68	Stretcher	10	A'
	Midwifery	69	Examination lamp	20	A'
	Midwifery	70	Delivery table	25	A'
	Midwifery	71	Delivery table, multi function	1	A'
	Surgical operation	72	Straight forceps (no tooth)	100	C
	Surgical operation	73	Cord control set	100	A'
	Surgical operation	74	Instrument set for post-partum	100	A'
	Surgical operation	75	Delivery forceps	100	A'
	Container	76	Instrument set for still birth	20	A'
	Surgical operation	77	Heart shaped forceps	20	C
	Midwifery	78	Patient monitor	1	A'
	Midwifery	79	Vacuum extractor	12	A'
	Midwifery	80	Obstetric monitor	15	A'
Examination Department	Minor treatment	81	Biopsy forceps	50	A

Project for Equipment Supply in National Hospital for Obstetric and Gynecology

Requested Equipment

Department	Function	No.	Name of Equipment	Q'ty	Priority
	Minor treatment	82	Pozzi forceps	10	A
	Minor treatment	83	Scissors, curbed, small	50	A
	Minor treatment	84	Pincet with tooth	50	A
	Minor treatment	85	Forceps box	10	A
	Minor treatment	86	Allis forceps	5	A
	Minor treatment	87	Speculum	200	A
	Minor treatment	88	Vaginal valve	10	A
	Container	89	Tray, L	10	A
	Container	90	Tray, M	10	A
	Container	91	Tray, S	10	A
	Container	92	Cycle box, L	20	A
	Container	93	Cycle box, M	20	A
	Container	94	Kidney tray	10	B
	Container	95	Alcohol cotton box	20	B
	Container	96	Urine container, flat type	50	B
	Gynecological intervention	97	Luminated cervix machine with camera	1	C
	Diagnosis	98	Ultrasound unit, color doppler A	5	A
	Gynecological intervention	99	Laser cauterizing machine	1	A
	Diagnosis	100	Hysteroscope set	1	A
	Family Planning	101	Karman syringe, 1 valve	20	A
	Family Planning	102	Karman syringe, 2 valve	20	A
	Gynecological intervention	103	Electrosurgical unit	2	A
	Gynecological intervention	104	Colposcope	2	A
	Management	105	Dehumidifier	5	B
	General care	106	Sphygmomanometer, electric	5	A
	Gynecological intervention	107	Examination table, gynecology	5	A
	Diagnosis	108	Ultrasound unit, color doppler B	4	A

Project for Equipment Supply in National Hospital for Obstetric and Gynecology

Requested Equipment

Department	Function	No.	Name of Equipment	Q'ty	Priority
	Gynecological intervention	109	Instrument set, hysterography	1	A
	Diagnosis	110	Bronchoscope set	1	C
	Diagnosis	111	Gastroscope set	1	C
	Diagnosis	112	X-ray unit, mammograph	1	A
	Management	113	Computer with Printer	3	B
Surgery	Surgery	114	Suction unit	5	B'
	Surgery	115	Oxygen consentrator	2	A'
	Surgery	116	Laparoscope set	1	B'
	Surgery	117	Resectoscope set	1	B'
	Surgery	118	Cystoscope set	1	B'
	Surgery	119	Operation table	11	A'
	Surgery	120	Operation lamp、mobile	10	A'
	Surgery	121	Electrosurgical unit	10	A'
	Surgery	122	Anesthesia machine	9	A'
	Surgery	123	Laryngoscope	2	B'
	Surgery	124	Laryngoscope lamp	7	B'
	Transporting	125	Wheel chair	2	B'
	Transporting	126	Stretcher	2	B'
Intensive Care Unit	Intensive care	127	ICU Bed	8	A'
	Intensive care	128	Patient monitor	10	A'
	Intensive care	129	Oxygen supplying center	2	B'
	Intensive care	130	Respirator	8	A'
	Intensive care	131	Monitor Pet CO2	2	A'
	Intensive care	132	Syringe pump	10	A'
	Intensive care	133	Electrocardiography	4	A'
	Intensive care	134	Air sterilizer machine	3	A'
	Intensive care	135	Liquid warmer	2	A'

Project for Equipment Supply in National Hospital for Obstetric and Gynecology

Requested Equipment

Department	Function	No.	Name of Equipment	Q'ty	Priority
Pathology Obtetrics Department	Intensive care	136	Fetal Monitor	1	A'
	Diagnosis	137	Ultrasound unit, 2D	1	A'
Center for Education & Training	Training purpose	138	Midwifery simulator	3	A
	Training purpose	139	Maternity model	3	A
	Training purpose	140	Baby doll, male (Bathing & Nursing)	10	A
	Training purpose	141	Baby doll, female (Bathing & Nursing)	10	A
	Training purpose	142	Baby doll, premature (Bathing & Nursing)	10	A
	Training purpose	143	Breast examination simulator	10	A
	Training purpose	144	Intravenous injection arm simulator	10	A
	Training purpose	145	Catheterization simulator, female	2	A
	Training purpose	146	Catheterization simulator, male	2	A
	Training purpose	147	Blood pressure measurement trainer	2	A
	Training purpose	148	Blood collection simulator, intravenous injection	2	A
	Training purpose	149	Female anatomic model	1	A
	Training purpose	150	Pelvis model with head of embryo	1	A
	Training purpose	151	Development of fetus model	1	A
	Training purpose	152	Torso dual sex	1	A
	Training purpose	153	Urinary system model	1	A
	Training purpose	154	Projector	3	A
	Training purpose	155	Screen	3	B
Imaging Diagnosis Department	Diagnosis	156	X-ray unit, mobile	1	B
	Diagnosis	157	X-ray film viewer	3	A
	Diagnosis	158	X-ray unit, fluoroscopy	1	A
	Diagnosis	159	X-ray unit, general	1	A
Center for Assisted Reproductive Technology center, including Andrology lab	Sterilisation	160	Air sterilizer system	1	B'
	Sterilisation	161	Air shower	1	B'
	embroy culture	162	CO2 Incubators	8	B'

Project for Equipment Supply in National Hospital for Obstetric and Gynecology

Requested Equipment

Department	Function	No.	Name of Equipment	Q'ty	Priority
	infertility treatmer	163	Manipulation system microscope	2	B'
	infertility treatmer	164	Stereo microscope	6	B'
	infertility treatmer	165	Workstation / laminated Hood	6	B'
	Sterilisation	166	Water purifiers	2	B'
	infertility treatmer	167	Up-right microscope	1	B'
	Diagnosis	168	Ultrasound with doppler	2	B'
	Diagnosis	169	Ultrasound 2D	3	B'
	Container	170	Nitrogen liquid container	10	B'
	Embryo containe	171	Embryo-freezing machine	1	B'
Hospital	refferal	172	Ambulance	1	A

* Priority A, B and C for the equipment which will be delivered in the existing building.
  Priority A : 1st priority equipment
  Priority B : 2nd priority equipment
  Priority C : Low priority equipment

* Priority A', B' and C' for the equipment which will be delivered in the new building.
  Priority A' : 1st priority equipment which will be able to be used in the exisiting building .
  Priority B' : 2nd priority equipment which will be able to be used in the existing building or equipment which is difficult to be transfered to new building after installation in the existing building or equipment which requires further justification.
  Priority C' : Low priority equipment

Annex-2

JAPAN'S GRANT AID

The Government of Japan (hereinafter referred to as "the GOJ") is implementing the organizational reforms to improve the quality of ODA operations, and as part of this realignment, a new JICA law was entered into effect on October 1, 2008. Based on the law and the decision of the Government of Japan (hereinafter referred to as "the GOJ"), JICA has become the executing agency of the Grant Aid for General Projects.

Grant Aid is non-reimbursable fund to a recipient country to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

1. Grant Aid Procedures

Japanese Grant Aid is conducted as follows-

- Preparatory Survey (hereinafter referred to as "the Survey")
  - the Survey conducted by JICA
- Appraisal &Approval
  - -Appraisal by The GOJ and JICA, and Approval by the Japanese Cabinet
- Determination of Implementation
  - -The Notes exchanged between the GOJ and a recipient country
- Grant Agreement(hereinafter referred to as "the G/A")
  - -Agreement concluded between JICA and a recipient country
- Implementation -Implementation of the Project on the basis of the G/A

2. Preparatory Survey

(1) Contents of the Survey

The aim of the Survey is to provide a basic document necessary for the appraisal of the Project by JICA and the GOJ. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the implementation of the Project.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, financial, social and economic point of view.
- Confirmation of items agreed on by both parties concerning the basic concept

of the Project.

- Preparation of a basic design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of the Japan's Grant Aid scheme.

JICA requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA uses (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

The Report on the Survey is reviewed by JICA, and after the appropriateness of the Project is confirmed, JICA recommends the GOJ to appraise the implementation of the Project.

3. Japan's Grant Aid Scheme

(1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the E/N will be singed between the GOJ and the Government of the recipient country to make a plead for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

The consultant firm(s) used for the Survey will be recommended by JICA to the recipient country to also work on the Project's implementation after the E/N and the G/A, in order to maintain technical consistency.

(3) Eligible source country

Under the Japanese Grant Aid, in principle, Japanese products and services including

transport or those of the recipient country are to be purchased. When JICA and the Government of the recipient country or its designated authority deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

(4) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by JICA. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

(5) Major undertakings to be taken by the Government of the Recipient Country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as Annex 3.

(6) "Proper Use"

The Government of recipient country is required to maintain and use the facilities constructed and the equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

(7) "Export and Re-export"

The products purchased under the Grant Aid should not be exported or re-exported from the recipient country.

(8) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). JICA will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to JICA under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank.

(10) Social and Environmental Considerations

A recipient country must ensure the social and environmental considerations for the Project and must follow the environmental regulation of the recipient country and JICA socio-environmental guideline.

(End)

Annex 3

Major Undertakings to be taken by Each Government

NO	Items	To be covered by the Grant	To be covered by Recipient side
1	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
2	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
	1) Marine(Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	(●)	(●)
3	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
4	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		●
5	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
6	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the transportation and installation of the equipment		●

(B/A: Banking Arrangement, A/P: Authorization to pay, N/A: Not Applicable)

5. Minutes of Discussions (Explanation of the Draft Report)

MINUTES OF DISCUSSIONS
ON BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF EQUIPMENT IN THE NATIONAL HOSPITAL FOR OBSTETRICS AND GYNECOLOGY IN THE SOCIALIST REPUBLIC OF VIET NAM
(EXPLANATION ON DRAFT REPORT)

In March 2009, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Basic Design Study Team on the Project for Equipment Supply in the National Hospital for Obstetrics and Gynecology (hereinafter referred to as "the Project") in the Socialist Republic of Viet Nam (hereinafter referred to as "Viet Nam"), and through discussions, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the study.

In order to explain and to consult the Viet Nam side on the components of the draft report, JICA sent to Viet Nam the Draft Report Explanation Team (hereinafter referred to as " the Team "), which is headed by Mr. Keiichi TAKEMOTO, Director, Health Human Resources Division, Health Human Resources and Infectious Disease Control Group, Human Development Department, JICA from August 4 to August 13, 2009.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

Hanoi, August 12, 2009

Mr. Keiichi TAKEMOTO
Leader
Draft Report Explanation Team
Japan International Cooperation Agency
Japan

Dr. Nguyen Viet Tien
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Dr. Tran Thi Giang Huong
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Mr. Nguyen Xuan Tien
Deputy Director General
Foreign Economic Relations Department
Ministry of Planning and Investment
Socialist Republic of Viet Nam

ATTACHMENT

1. Components of the Draft Report

The Government of Viet Nam agreed and accepted in principle the components of the draft report explained by the Team.

2. Japan's Grant Aid Scheme

The Viet Nam side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Viet Nam as explained by the Team and described in Annex-1 and Annex-2.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the Government of Viet Nam by November 2009.

4. Confidentiality of the Project

Both sides confirmed that all information related to the Project including detailed specifications of the equipment and other technical information shall not be released to any outside party before the signing of all the Contract(s) for the Project.

5. Other Relevant Issues

1) Modification on the Title of the Project

Both sides agreed to modify the title of the Project to " Project for Improvement of Equipment in the National Hospital for Obstetrics and Gynecology"

2) Installation of the Equipment

All equipment will be installed in the existing buildings. The Viet Nam side promised that the following existing rooms will be modified and prepared for the equipment.

① Recovery Room (4th Floor, G Building) will be modified for 2 Operation Rooms.

② Conference Room (4th Floor, G Building) will be modified for 1 Operation Room.

③ Staff Room (5th Floor, G Building) will be modified for 1 ICU Room with 5 Beds.

3) Construction Schedule of the New Building

The Viet Nam side explained the construction schedule as Annex-3, confirming that the new

building will be completed by October 2011.

4) Relocation of the Equipment to be Used in the New Building

After the completion of the new building, some equipment will be relocated and be reinstalled to the new building from the existing buildings. For those equipment, the Viet Nam side promised to bear all the responsibility and cost for relocation and undertake necessary operations properly and immediately.

5) Additional/Final Request by the Viet Nam side

After discussions with the Team, the final modification of the items described in Annex-4 was requested by the Viet Nam side. The Team will report the contents of the request by the Viet Nam side to the Government of Japan. The final items and their quantities, which are supposed to be decided by the Japanese side, will be reflected in the Basic Design Study Report.

6) Allocation of the Personnel and Budget for Maintenance

The Viet Nam side promised to allocate the necessary personnel and budget for operation and maintenance of the equipment procured in this Project.

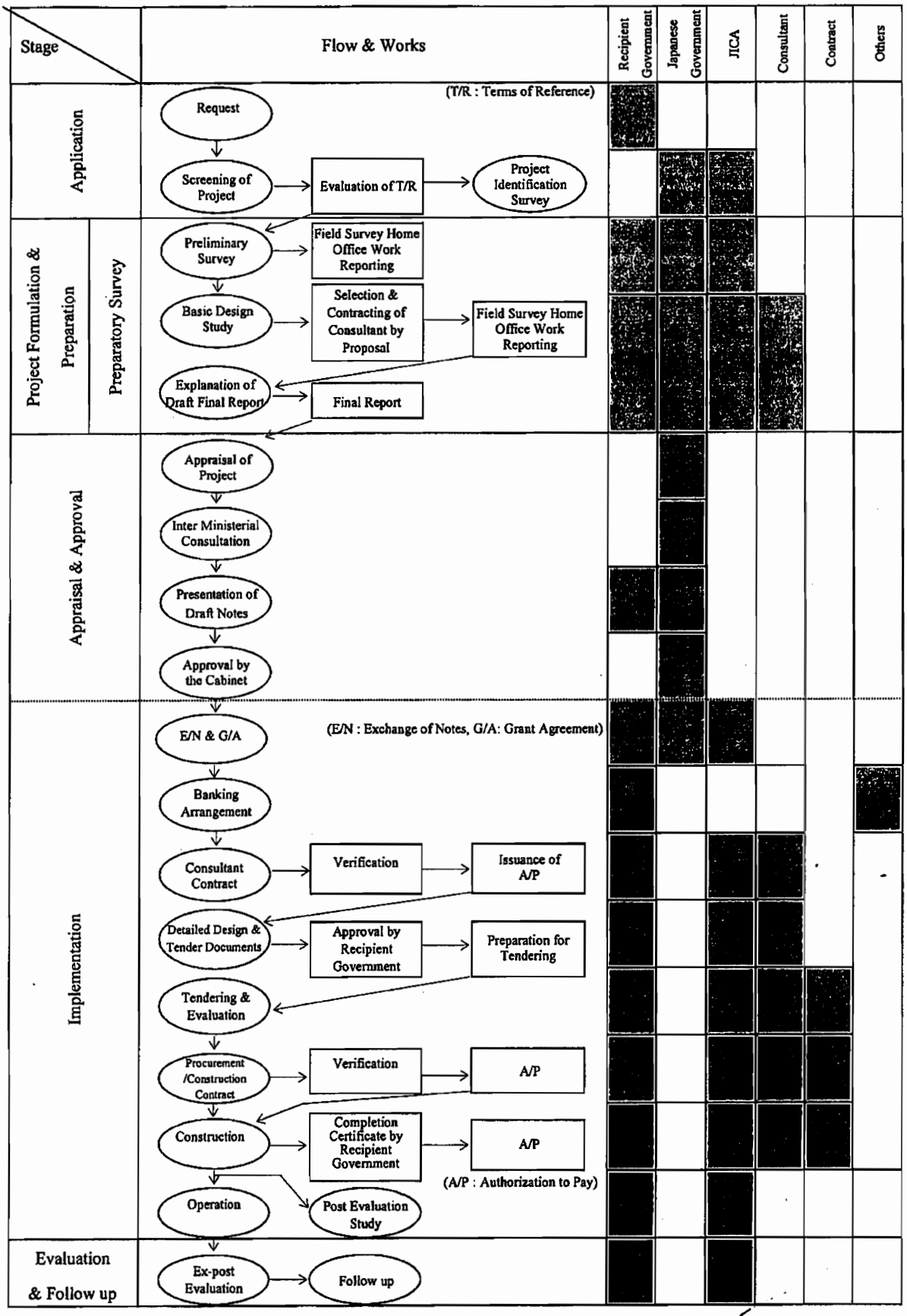
7) Effective Utilization of the Training Equipment

The National Hospital for Obstetrics and Gynecology promised to utilize the training equipment effectively to fulfill its role to provide appropriate education and training to provincial hospitals. The training activities by the hospital shall be implemented in collaboration with JICA's new technical cooperation titled "The Project for Improvement of the Quality of Human Resources in the Medical Service System", main counterpart of which is Ministry of Health.

ANNEX 1 Flow Chart of Japan's Grant Aid Procedures
ANNEX 2 Major Undertakings to be Taken by Each Government
ANNEX 3 Construction Schedule of the New Building
ANNEX 4 Additional / Final Request by the Viet Nam Side
ANNEX 5 Project Cost Estimation (Draft)
ANNEX 6 Cost to be Borne by the Viet Nam Side

Annex 1

Flow chart of Japan's Grant Aid Procedures



Annex 2

Major Undertakings to be taken by Each Government

NO	Items	To be covered by the Grant	To be covered by Recipient
1	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		•
	2) Payment commission		•
2	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
	1) Marine(Air) transportation of the products from Japan to the recipient country	•	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		•
	3) Internal transportation from the port of disembarkation to the project site	•	
3	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		•
4	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		•
5	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		•
6	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the transportation and installation of the equipment		•

(B/A: Banking Arrangement, A/P: Authorization to pay, N/A: Not Applicable)

Plan of implementing the construction BC

National Hospital for Obstetrics and Gynecology

(Budget: loan from The Bank of Investment and Development of Vietnam (IDB)

No	Name of activities	Duration	Start	Finish	Time
					Dec.08 | Jan.09 | Feb.09 | Mar.09 | Apr.09 | May.09 | Jun.09 | Jul.09 | Aug.09 | Sep.09 | Oct.09 | Oct.2011
1	Movement of patients and medical equipment out of two old buildings	30 days	25/12	23/01	
2	Setting up the fence surrouded the constrution area	7 days	27/1	02/02	
3	Technical design for new building	131 days	25/12	04/05	
4	Assessment, approved by the technical design of new building	30 days	05/05	03/06	
5	Selection of construction contractor in accordance with Law on Tender	60 days	04/06	02/08	
6	Clear the old buildings	55 days	11/03	04/05	
7	Preparation area for the construction	55 days	5/8	30/9	
8	duration the construction of the new building	24 months	1/10/09	30/9/11	

Annex 4

Additional/ Final Request by the Viet Nam Side

① Quantity of Equipment

Viet Nam side requested to change the planned quantity of the following equipment because of their necessity.

Department	Item No.	Description	Planned Q'ty	Requested Q'ty
Examination	58	Speculum	20	200
	69	Doppler, fetus	3	4
Surgery	74	Operation Lamp, mobile	3	10

② Specifications of Equipment

Viet Nam side requested to change the specifications of the following equipment because of their purpose.

Department	Item No.	Description	Requested specification
Surgery	80	Patient monitor	Measurement parameter EtCO2 shall be added.
Pathology Obstetrics	87	Ultrasound unit, B/W	Doppler mode function shall be added.
Imaging Diagnosis	107	X-ray unit, fluoroscopy	DSR function shall be added.

Annex-6

Cost to be borne by the Viet Nam side

Item	Estimated cost
Commissions for banking arrangement	USD 6,507.60 (app. 0.63 million yen)
Construction of new B/C buildings	Already budgeted, the works have commenced
Three-phase power supply works in the existing facilities (radiological equipment, mortuary refrigerators, sterilizers)	USD 6,017.05 (app. 0.58 million yen)
Removal of existing fixed equipment (radiological equipment, sterilizers)	USD 640.00 (app.0.06 million yen)
Removal of existing wall and construction of new walls (according to the layout of mortuary refrigerators)	USD 1,815.95 (app.0.17 million yen)
Total	USD 14,980.60 (app.1.44 million yen)

USD1=96.08 yen

6. Examination of the Requested Equipment

Examination of the Requested Equipment

Department	Request No.	Request Name of Equipment	Q'ty	Priority	Classification	Purpose	Need	Tec. Level	Operation system	Maintenance system	Ope. & Mainte. Cost	Judgement	Remarks	Existing Q'ty	Old Existing Q'ty	Old Existing Continuation Q'ty	Old Existing, Renwal Q'ty	Unable to Use Existing	Installation Available Q'ty in Existing bldg.	New BC bldg. Planned Q'ty	Planned Department	(Planned) Item No.	Planned Name of Equipment	Planned Q'ty
Cytogenetics Department	1	Automatic karyotyping system	1	B	New	×	○	○	○	○	○	×	To be eliminated for fear of life manipulation	0	-	-	-	-	-	-				0
	2	Bioclean bench	1	B	Add	×	○	○	○	○	○	×	To be eliminated for fear of life manipulation	2	-	-	-	-	-	-				0
	3	FISH system	1	B	New	×	○	○	○	○	○	×	To be eliminated for fear of life manipulation	0	-	-	-	-	-	-				0
	4	Slide warmer	1	B	New	×	○	○	○	○	○	×	To be eliminated for fear of life manipulation	0	-	-	-	-	-	-				0
	5	Centrifuge	2	B	Add	×	○	○	○	○	○	×	To be eliminated for fear of life manipulation	2	-	-	-	-	-	-				0
	6	CO2 Incubator	2	B	Add	×	○	○	○	○	○	×	To be eliminated for fear of life manipulation, but it is general-purpose equipment, one will be studied in Micro-organism Department	1	-	-	-	-	-	-				0
					Rep	○	○	○	○	○	○	○	Micro-organism Department：Replace the old one	1	1	0	1	0	-	-	Micro-organism Department	10	CO2 Incubator	1
	7	Shaker	2	B	New	×	○	○	○	○	○	×	To be eliminated for fear of life manipulation, but it is general-purpose equipment, one will be studied in Micro-organism Department	0	-	-	-	-	-	-				0
					Rep	○	○	○	○	○	○	○	Micro-organism Department：Replace the old one	1	1	0	1	0	-	-	Micro-organism Department	11	Shaker	1
	8	Refrigerator	1	B	Add	×	×	○	○	○	○	×	Existing item can still be used	2	-	-	-	-	-	-				0
	9	Deep freezer	4	B	New	×	×	○	○	○	○	×	The necessity in this department is low, but they will be studied in Hematology Department and Micro-organism Department	0	-	-	-	-	-	-				0
					Rep	○	○	○	○	○	○	○	Hematology Department: Replace the old one	1	1	0	1	0	-	-	Hematology Department	9	Deep freezer	1
					Rep	○	○	○	○	○	○	○	Micro-organism Department：Replace the dead one	1	-	-	-	1	-	-	Micro-organism Department	12	Deep freezer	1
	10	Water bath	3	A	New	○	○	○	○	○	○	○	Minimal one needed in this department will be planned	0	-	-	-	-	-	-	Cytogenetics Department	1	Water bath	1
	11	Hotplate	1	A	New	○	○	○	○	○	○	○	One needed in this department will be planned	0	-	-	-	-	-	-	Cytogenetics Department	2	Hotplate	1
	12	Auto PAP system	1	A	New	○	○	○	×	×	○	×	To be eliminated because there is no installation performance in Vietnam and manufacturers and dealers are inadequate	0	-	-	-	-	-	-				0
	13	Staining machine	1	A	New	○	○	○	○	○	○	○	To be planned for shortening making samples and accurancy improvement	0	-	-	-	-	-	-	Cytogenetics Department	3	Staining machine	1
	14	Automated Cover slipper	1	A	New	○	○	○	○	○	○	○	To be planned for shortening making samples	0	-	-	-	-	-	-	Cytogenetics Department	4	Automated cover slipper	1
	15	Centrifuge	1	A	Add	○	○	○	○	○	○	○	One needed in this department will be planned	1	0	0	0	0	-	-	Cytogenetics Department	5	Centrifuge	1
	16	Thin Pre PAP test system	1	B	New	○	○	○	○	○	○	○	To be planned for name alternation, shortening making samples and accurancy improvement	0	-	-	-	-	-	-	Cytogenetics Department	6	Thin layer sample making system	1
	17	Cryotome	1	B	Rep	△	○	○	○	○	○	×	To be studied in Biopsy Anatomy Department	-	-	-	-	-	-	-				0
					Rep	○	○	○	○	○	○	○	Biopsy Anatomy Department：Replace the dead existing one	1	0	0	0	1	-	-	Biopsy Anatomy Department	23	Cryotome	1
	18	Tissue processor	1	B	New	△	×	○	○	○	○	×	To be studied in Biopsy Anatomy Department	-	-	-	-	-	-	-				0
					Rep	○	×	○	○	○	○	×	Biopsy Anatomy Department：To be eliminated because of overlapping No. 33	0	-	-	-	-	-	-				0
	19	Tissue Embedding Console System	1	B	New	△	○	○	○	○	○	×	To be studied in Biopsy Anatomy Department	-	-	-	-	-	-	-				0
					New	○	○	○	○	○	○	○	Biopsy Anatomy Department：It will be planned newly	0	-	-	-	-	-	-	Biopsy Anatomy Department	24	Paraffin Embedding Console System	1
	20	Microscope, fluorescence	1	A	New	×	○	○	○	○	○	×	To be eliminated because there are two existing light optics and the purpose of fluorescence optic is related to FISH	0	-	-	-	-	-	-				0
	21	Automatic slide Stainer	1	B	New	○	×	○	○	○	○	×	To be eliminated because of overlapping No. 13	0	-	-	-	-	-	-				0

Examination of the Requested Equipment

Department	Request No.	Request Name of Equipment	Q'ty	Priority	Classification	Purpose	Need	Tec. Level	Operation system	Maintenance system	Ope. & Mainte. Cost	Judgement	Remarks	Existing Q'ty	Old Existing Q'ty	Old Existing Continuation Q'ty	Old Existing, Renwal Q'ty	Unable to Use Existing Installation Available Q'ty in Existing bldg.	New BC bldg. Planned Q'ty	Planned Department	(Planned) Item No.	Planned Name of Equipment	Planned Q'ty
Hematology Department	22	ELISA system	1	A	Rep	△	○	○	○	○	○	×	To be studied in Micro-organism Department	1	-	-	-	-	-				0
					New	○	○	○	○	○	○	○	Micro-organism Department: It will be used for judging toxoplasma, hepatitis B, hapatitis C, chlamydia and etc	0	-	-	-	-	-	Micro-organism Department	13	ELISA system	1
	23	Hematology Analyzer	1	A	Rep	○	○	○	○	○	○	○	To be renewed the old one	2	1	0	1	0	-	Hematology Department	7	Hematology analyzer	1
	24	Polymerase Chain Reaction machine	1	A	New	○	○	○	○	○	○	○	To be used in diagnosing HIV virus definitely	0	-	-	-	-	-	Hematology Department	8	Polymerase chain reaction machine	1
Bio-chemistry Department	25	Automatic bio-chemical analyzer	1	A	Rep	○	○	○	○	○	○	○	To be renewed for old	1	1	0	1	0	-	Bio-chemistry Department	14	Automatic bio-chemical analyzer	1
	26	Automatic immunator	1	A	Rep	○	×	○	○	○	○	×	Existing item can still be used	4	1	1	0	1	-				0
	27	Automatic urine analyzer	1	A	Rep	○	×	○	○	○	○	×	Existing item can still be used	2	0	0	0	1	-				0
	28	Centrifuge	1	A	Rep	○	○	○	○	○	○	○	To be renewed the old one	4	1	0	1	0	-	Bio-chemistry Department	15	Centrifuge,RIA tube	1
	29	Deep freezer	6	B	New	○	×	○	○	○	○	×	There are few frozen keeping of sampls in biochemical examination	0	-	-	-	-	-				0
	30	Autoclave, vertical	1	A	New	△	×	○	○	○	○	×	To be alternated a common model, and will be studied infection control department	0	-	-	-	-	-				0
					Rep	○	○	○	○	○	○	○	Infection control Department: To be renewed old one	4	1	0	1	0	-	Infection Control Department	17	Autoclave	1
	31	Microscope	2	A	New	○	○	○	○	○	○	○	One transmission electron microscope is requested, but it is not necessary in this department, therefore one light optics will be	0	-	-	-	-	-	Bio-chemistry Department	16	Microscope	1
Biopsy Anatomy Department	32	Immunohisto chemical stainer	1	A	New	○	○	×	×	○	○	×	To be eliminated because management system and technical level are unclear, and they have possibilities that they can't manage it.	0	-	-	-	-	-				0
	33	Paraffin procedure machine	1	A	Rep	○	○	○	○	○	○	○	To be renewed for old	1	1	0	1	0	-	Biopsy Anatomy Department	18	Tissue processor	1
	34	Autopsy table	1	A	New	○	○	○	○	○	○	○	To be planned because it is necessary for clarification of neonatal death cause	0	-	-	-	-	-	Biopsy Anatomy Department	19	Autopsy table	1
	35	Refrigerator, mortuary	1	B	New	○	○	○	○	○	○	○	To be planned for prompt dissection, instead of formalin treatment	0	-	-	-	-	-	Biopsy Anatomy Department	20	Refrigerator, mortuary	1
	36	Microtome	1	A	Rep	○	○	○	○	○	○	○	To be renewed for dead one	2	1	1	0	1	-	Biopsy Anatomy Department	21	Microtome	1
	37	Microscope, multi viewer	1	A	New	○	○	○	○	○	○	○	For discussion	0	-	-	-	-	-	Biopsy Anatomy Department	22	Microscope, multi viewer	1
Neonatal Department	38	Ventilator	2	B'	Add	×	×	○	○	○	○	×	As for neonatal one, to be studied in No.41	0	-	-	-	-	-				0
	39	Infusion pump	8	A'	New	○	○	○	○	○	○	○	To be planned one unit by five sickbeds for immature baby and isolation	0	-	-	-	-	6	6	Neonatal Department	25	Infusion pump	6
	40	Syringe pump	15	A'	Rep	○	○	○	○	○	○	○	To be planned one unit by one sickbed for immature baby and isolation, and adjusted existing equipment Q'ty	16	16	15	1	0	30	30	Neonatal Department	26	Syringe pump	15
	41	Ventilator, newborn	5	A'	Add	○	○	○	○	○	○	○	To be planned one unit by five sickbeds for immature baby and isolation, and adjusted existing equipment Q'ty	2	1	0	1	0	6	6	Neonatal Department	27	Ventilator, newborn	5
	42	Patient monitor, neonatal	5	A'	New	○	○	○	○	○	○	○	To be planned one unit by five sickbeds for immature baby and isolation, and adjusted existing equipment Q'ty	0	-	-	-	-	6	6	Neonatal Department	28	Patient monitor, neonatal	5
	43	CPAP machine	20	B'	Rep Add	○	×	○	○	○	○	×	Existing item can still be used	11	-	-	-	-	11	11				0
	44	Phototherapy unit	10	B'	Rep Add	○	○	○	○	○	○	○	To be planned demand Q'ty from preventing choloplania and number of patient, and adjusted existing equipment Q'ty	13	5	0	5	0	18	18	Neonatal Department	29	Phototherapy unit	10
	45	Infant incubator	12	A'	Rep	○	○	○	○	○	○	○	To be planned one unit by one sickbed for immature baby and isolation, and adjusted existing equipment Q'ty	42	24	12	12	18	30	30	Neonatal Department	30	Infant incubator	12

Department	Request No.	Request Name of Equipment	Q'ty	Priority	Classification	Purpose	Need	Tec. Level	Operation system	Maintenance system	Ope. & Mainte. Cost	Judgement	Remarks	Existing Q'ty	Old Existing Q'ty	Old Existing Continuation Q'ty	Old Existing, Renwal Q'ty	Unable to Use Existing	Installation Available Q'ty in Existing bldg.	New BC bldg. Planned Q'ty	Planned Department	(Planned) Item No.	Planned Name of Equipment	Planned Q'ty
	46	Suction unit for infant	10	B'	Rep Add	○	○	○	○	○	○	○	To be planned one unit by ten sickbeds, and adjusted existing equipment Q'ty	6	4	0	4	0	9	9	Neonatal Department	31	Suction unit for infant	7
	47	Ambu set for infant	5	A'	Rep Add	○	○	○	○	○	○	○	To be planned one unit by ten sickbeds, and adjusted existing equipment Q'ty	5	2	0	2	0	9	9	Neonatal Department	32	Ambu set for infant	5
	48	Oxygen mask for infant	30	B'	Add	○	×	○	○	○	○	×	To be eliminated because they are comsumable goods	-	-	-	-	-	-	-				0
	49	IV stand	10	A'	Add	○	○	○	○	○	○	○	To be planned one unit by one sickbed for immature baby and isolation, and adjusted existing equipment Q'ty	8	-	-	0	0	30	30	Neonatal Department	33	IV stand	10
	50	Infant trolley	5	A'	New	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of obstetric delivery table Q'ty	0	-	-	-	-	14	14	Neonatal Department	34	Infant trolley	5
	51	Oxygen hood	20	A'	Add	○	○	○	○	○	○	○	To be planned one unit by two sickbeds for immature baby, and adjusted existing equipment	4	0	0	0	0	11	11	Neonatal Department	35	Oxygen hood	7
	52	Newborn bath tub	10	B'	New	○	×	○	○	○	○	×	Bathing is available in existing facilities To be checked up as the facilities in new BC	-	-	-	-	-	-	-				0
	53	Laryngoscope for infant and newborn	20	A'	Rep	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of number of nurse (nurse unit)	5	5	0	5	0	9	9	Neonatal Department	36	Laryngoscope for newborn	9
	54	Automatic powder/milk pAddaration system	1	B'	New	×	×	○	○	○	○	×	To be eliminated because it should be checked up as the facilities in new BC bldg., and it can't be installed in existing bldg.	0	-	-	-	-	-	1				0
	55	Anaesthetic machine, neonatal	1	A'	New	×	×	○	×	○	○	×	To be eliminated because neonatal operations are performed in other hospitals in medical system now	0	-	-	-	-	-	-				0
Delivery Department	56	Instrument set for normal delivery	50	A'	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of ordinary delivery number and suction and forcept delivery per day	30	30	0	30	0	40	40	Delivery Department	37	Instrument set for normal delivery	40
	57	Doppler, fatus	5	A'	New	○	○	○	○	○	○	○	To be planned one-sixth of number of beds for birth pangs	0	-	-	-	-	2	2	Delivery Department	38	Doppler, fetus	2
	58	Computer with printer	3	B'	New	×	×	○	○	○	○	×	To be eliminated because they are units for office management	-	-	-	-	-	-	-				0
	59	Syringe pump	15	A'	Add	○	○	○	○	○	○	○	To be planned half of number of delivery tables for stimulation plan and affected patients	1	1	0	1	0	9	9	Delivery Department	39	Syringe pump	9
	60	Microwave	5	B'	New	×	×	○	○	○	○	×	To be eliminated because they are common home electric appliances	-	-	-	-	-	-	-				0
	61	Medicine box	4	B'	Add	○	×	○	○	○	○	×	To be procured by hospital because they are moderate price	-	-	-	-	-	-	-				0
	62	Instrument box	4	B'	Add	○	×	○	○	○	○	×	To be procured by hospital because they are moderate price	-	-	-	-	-	-	-				0
	63	Clothes box	2	A'	Add	○	×	○	○	○	○	×	To be procured by hospital because they are moderate price	-	-	-	-	-	-	-				0
	64	IV stand	5	A'	Rep	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of number of delivery tables	11	11	9	2	0	14	14	Delivery Department	40	IV stand	5
	65	Instrument trolley	8	A'	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of number of delivery tables	9	3	0	3	0	14	14	Delivery Department	41	Instrument trolley	8
	66	Trolley for monitoring machine	17	A'	New	×	×	○	○	○	○	×	Monitors procured in this project are with cart, and the carts for existing equipments are not to be procured	-	-	-	-	-	-	-				0
	67	Wheel chair	10	A'	Rep Add	○	○	○	○	○	○	○	To be planned one unit by five delivery tables, and adjusted existing equipment Q'ty	2	2	0	2	0	4	4	Delivery Department	42	Wheel chair	4
	68	Stretcher	10	A'	Rep Add	○	○	○	○	○	○	○	To be planned one unit by five delivery tables, and adjusted existing equipment Q'ty	2	2	0	2	0	4	4	Delivery Department	43	Stretcher	4
	69	Examination lamp	20	A'	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of number of delivery tables	9	9	0	9	0	14	14	Delivery Department	44	Examination lamp	18
	70	Delivery table	25	A'	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of 18 delivery tables, because 14 are remained in new bldg. and 4 for infection are remained in existing bldg.	12	12	0	12	0	13	13	Delivery Department	45	Delivery table	17
	71	Delivery table, multi function	1	A'	New	○	○	○	○	○	○	○	To be planned a minimum of one unit for emergency case during delivery	0	-	-	-	-	1	1	Delivery Department	46	Delivery table, multi function	1
	72	Straight forceps (no tooth)	100	C	Can	-	-	-	-	-	-	-	Concel the request	-	-	-	-	-	-	-				-

Examination of the Requested Equipment

Department	Request No.	Request Name of Equipment	Q'ty	Priority	Classification	Purpose	Need	Tec. Level	Operation system	Maintenance system	Ope. & Mainte. Cost	Judgement	Remarks	Existing Q'ty	Old Existing Q'ty	Old Existing Continuation Q'ty	Old Existing, Renwal Q'ty	Unable to Use Existing	Installation Available Q'ty in Existing bldg.	New BC bldg. Planned Q'ty	Planned Department	(Planned) Item No.	Planned Name of Equipment	Planned Q'ty
	73	Cord control set	100	A'	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of ordinary delivery number and suction and forcept delivery per day	30	30	0	30	0	40	40	Delivery Department	47	Cord control set	40
	74	Instrument set for post-partum	100	A'	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of ordinary delivery number and suction and forcept delivery per day	30	30	0	30	0	40	40	Delivery Department	48	Instrument set for post-partum	40
	75	Delivery forceps	100	A'	Rep Add	○	×	○	○	○	○	×	The compositions of No.56 include all of the compositions of this equipment	-	-	-	-	-	-	-				0
	76	Instrument set for still birth	20	A'	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty in light of number of fetal death						4	4	Delivery Department	49	Instrument set for still birth	4
	77	Heart shaped forceps	20	C	Can	-	-	-	-	-	-	-	Concel the request	-	-	-	-	-	-	-				-
	78	Patient monitor	1	A'	Add	△	○	○	○	○	○	×	In No. 80 Obstetric monitor, the equipment which can monitor biological information is adopted, so these equipments are to be eliminated	1	-	-	-	-	-	-				0
	79	Vacuum extractor	12	A'	Add	○	○	○	○	○	○	○	To be adjusted Q'ty in light of growth rate of suction and forcept delivery number per day	3	0	0	0	0	9	9	Delivery Department	50	Vacuum extractor	6
	80	Obstetric monitor	15	A'	Rep	○	○	○	○	○	○	○	Total of the monitors up to a ceiling of delivery table. To be adjusted exsiting Q'ty changeing the half of them to ordinary specification. To be renewed	13	8	0	4	0	9	9	Delivery Department	51	Obstetric monitor	4
					New	○	○	○	○	○	○	○	To be planned newly nine units as the equipments whose specifications are available to monitor maternal biological information.	0	-	-	4	0	9	9	Delivery Department	52	Obstetric monitor, maternal monitoring	9
Examination Department	81	Biopsy forceps	50	A	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty in light of tissue examination number	25	25	0	25	-	-	-	Examination Department	53	Biopsy forceps set	50
	82	Pozzi forceps	10	A	Rep	○	○	○	○	○	○	○	To be adjusted Q'ty in light of number of gynecology treatment room (one emergency treatment room and one treatment room)	10	10	0	10	-	-	-	Examination Department	54	Pozzi forceps set	10
	83	Scissors, curbed, small	50	A	Rep	○	○	○	○	○	○	○		-	-	-	-	-	-	-	Examination Department	55	Treatment set	50
	84	Pincet with tooth	50	A	Rep	○	○	○	○	○	○	○		-	-	-	-	-	-	-	Examination Department	56	Pincette with tooth	50
	85	Forceps box	10	A	Rep	○	×	○	○	○	○	×	To be attached cases in the specifications, if they are necessary	-	-	-	-	-	-	-				0
	86	Allis forceps	5	A	Rep	○	○	○	○	○	○	○	To be renewed because of they are old	5	5	0	5	-	-	-	Examination Department	57	Allis forceps	5
	87	Speculum	200	A	Rep	○	○	○	○	○	○	○	To be planned each size, S:80, M:80, L:40, total Q'ty 200 pcs.	-	-	-	-	-	-	-	Examination Department	58	Speculum	200
	88	Vaginal valve	10	A	Rep	○	○	○	○	○	○	○	To be renewed because of they are old	10	10	0	10	-	-	-	Examination Department	59	Vaginal valve	10
	89	Tray, L	10	A	Rep	○	○	○	○	○	○	○	No.90 and 91 are included	-	-	-	-	-	-	-	Examination Department	60	Tray set	10
	90	Tray, M	10	A	Rep	○	○	○	○	○	○	×	To be included in No.89	-	-	-	-	-	-	-				0
	91	Tray, S	10	A	Rep	○	○	○	○	○	○	×	To be included in No.89	-	-	-	-	-	-	-				0
	92	Cycle box, L	20	A	Rep	○	○	○	○	○	○	○	No.93 is included	-	-	-	-	-	-	-	Examination Department	61	Cycle box set	20
	93	Cycle box, M	20	A	Rep	○	○	○	○	○	○	×	To be included in No.92	-	-	-	-	-	-	-				0
	94	Kidney tray	10	B	Rep	○	×	○	○	○	○	×	To be procured by hospital because they are moderate price	-	-	-	-	-	-	-				0
	95	Alcohol cotton box	20	B	Rep	○	×	○	○	○	○	×	To be procured by hospital because they are moderate price	-	-	-	-	-	-	-				0
	96	Urine container, flat type	50	B	Rep	×	×	○	○	○	○	×	They are inessential in clinic	-	-	-	-	-	-	-				0
	97	Luminated cervix machine with camera	1	C	Can	-	-	-	-	-	-	-	Concel the request	-	-	-	-	-	-	-				-

Department	Request No.	Request Name of Equipment	Q'ty	Priority	Classification	Purpose	Need	Tec. Level	Operation system	Maintenance system	Ope. & Mainte. Cost	Judgement	Remarks	Existing Q'ty	Old Existing Q'ty	Old Existing Continuation Q'ty	Old Existing, Renwal Q'ty	Unable to Use Existing Installation Available Q'ty in Existing bldg.	New BC bldg. Planned Q'ty	Planned Department	(Planned) Item No.	Planned Name of Equipment	Planned Q'ty
	98	Ultrasound unit, color doppler A	5	A	Add	○	○	○	○	○	○	○	For requirement of five color dopplers, one color doppler is added, four dopplers are renewed as B/W.	1	0	0	0	0	-	-	Examination Department	62	Ultrasound unit, color doppler A	1
					Rep	○	○	○	○	○	○	○		6	6	2	4	0	-	-	Examination Department	63	Ultrasound unit, B/W	4
	99	Laser cauterizing machine	1	A	New	×	×	○	○	○	○	×	Fungible with electric cautery (high-frequency wave)	0	-	-	-	-	-	-				0
	100	Hysteroscope set	1	A	Rep	○	○	○	○	○	○	○	To be renewed because it is old	1	1	0	1	0	-	-	Examination Department	64	Hysteroscope set	1
	101	Karman syringe, 1 valve	20	A	Add	○	×	○	○	○	○	×	To be eliminated because they are disposable products	-	-	-	-	-	-	-				0
	102	Karman syringe, 2 valve	20	A	Add	○	×	○	○	○	○	×	To be eliminated because they are disposable products	-	-	-	-	-	-	-				0
	103	Electrosurgical unit	2	A	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of colposcope Q'ty	1	1	0	1	0	-	-	Examination Department	65	Electrosurgical unit, LEEP	2
	104	Colposcope	2	A	Rep	○	○	○	○	○	○	○	To be renewed two units because of they are old	2	2	0	2	0	-	-	Examination Department	66	Colposcope	2
	105	Dehumidifier	5	B	New	×	×	○	○	○	○	×	To be eliminated because they are units for office management	-	-	-	-	-	-	-				0
	106	Sphygmomanometer, electric	5	A	Rep	○	○	○	○	○	○	○	To be renewed one for emergency room, treatment room and VCT room each, two for hystero examination rooms	5	5	0	5	0	-	-	Examination Department	67	Sphygmomanometer, electric	5
	107	Examination table, gynecology	5	A	Rep	○	○	○	○	○	○	○	To be renewed two for emergency rooms and hystero examination rooms each, one for treatment room	5	5	0	5	0	-	-	Examination Department	68	Examination table, gynecology	5
	108	Ultrasound unit, color doppler B	4	A	Rep	○	○	○	○	○	○	○	To be changed specifications and descriptions, and to be planned in obstetric clinic in Bldg. G and emargency treatment room in Bldg. A.	3	3	0	3	0	-	-	Examination Department	69	Doppler, fetus	4
	109	Instrument set, hysterography	1	A	Add	○	×	○	○	○	○	×	To be eliminated because they are disposable products	-	-	-	-	-	-	-				0
	110	Bronchoscope set	1	C	Can	-	-	-	-	-	-	-	Concel the request	-	-	-	-	-	-	-				-
	111	Gastroscope set	1	C	Can	-	-	-	-	-	-	-	Concel the request	-	-	-	-	-	-	-				-
	112	X-ray unit, mammograph	1	A	New	△	○	○	○	○	○	×	It is not necessary for this department, but it is to study in Imaging Diagnosis Department	0	-	-	-	-	-	-				0
					New	○	○	○	○	○	○	○	Imaging Diagnosis Department: Existing equipments were out of order and taken away. To be installed in neighbor ultrasonography room.	0	-	-	-	-	-	-	Imaging Diagnosis Department	104	X-ray unit, mammograph	1
	113	Computer with Printer	3	B	New	×	×	○	○	○	○	×	To be eliminated because they are office machines	-	-	-	-	-	-	-				0
Surgery	114	Suction unit	5	B'	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of operation rooms added on existing bldg.	8	2	0	2	0	11	14	Surgery	70	Suction unit	5
	115	Oxygen consentrator	2	A'	Add	×	×	○	○	○	○	×	To be eliminated because they can be used only in existing bldg. (The new bldg. is central piping system)	7	5	5	0	0	-	0				0
	116	Laparoscope set	1	B'	Rep	○	○	○	○	○	○	○	To be renewed the old one	4	2	1	1	0	7	8	Surgery	71	Laparoscope set	1
	117	Resectoscope set	1	B'	New	○	○	○	○	○	○	○	To be used in removaling fibroid	0	-	-	-	-	1	1	Surgery	72	Resectoscope set	1
	118	Cystoscope set	1	B'	New	×	×	○	○	○	○	×	It is rarely used in operations of Obstetrical surgery.	-	-	-	-	-	-	-				0
	119	Operation table	11	A'	Rep Add	○	○	○	○	○	○	○	To be adjusted between ceiling of operating room numbers in new BC bldg. and installation available numbers in existing bldg.	8	8	0	8	0	11	14	Surgery	73	Operation table	11
	120	Operation lamp、mobile	10	A'	New	○	○	○	○	○	○	○	NHOG could not procure the ceiling OP lamp for new BC bldg. They use mobile type in the meantime.	0	-	-	-	-	10	10	Surgery	74	Operation lamp, mobile	10
	121	Electrosurgical unit	10	A'	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of available operating room numbers in existing bldg.	6	5	0	5	0	11	14	Surgery	75	Electrosurgical unit	10

Examination of the Requested Equipment

Department	Request No.	Request Name of Equipment	Q'ty	Priority	Classification	Purpose	Need	Tec. Level	Operation system	Maintenance system	Ope. & Mainte. Cost	Judgement	Remarks	Existing Q'ty	Old Existing Q'ty	Old Existing Continuation Q'ty	Old Existing, Renwal Q'ty	Unable to Use Existing	Installation Available Q'ty in Existing bldg.	New BC bldg. Planned Q'ty	Planned Department	(Planned) Item No.	Planned Name of Equipment	Planned Q'ty
	122	Anesthesia machine	9	A'	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of available operating room numbers in existing bldg.	7	5	0	5	0	11	14	Surgery	76	Anesthesia machine	9
	123	Laryngoscope	2	B'	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of available operating room numbers in existing bldg.	10	1	0	1	0	11	14	Surgery	77	Laryngoscope	2
	124	Laryngoscope lamp	7	B'	Add	×	×	-	-	-	-	×	To be eliminated because they are spare parts of existing equipment	-	-	-	-	-	-	-				0
	125	Wheel chair	2	B'	Rep	○	○	○	○	○	○	○	To be planned one unit by two operation tables, and adjusted equipment Q'ty	6	2	0	2	0	6	7	Surgery	78	Wheel chair	2
	126	Stretcher	2	B'	Rep	○	○	○	○	○	○	○	To be planned one unit by two operation tables, and adjusted equipment Q'ty	6	2	0	2	0	6	7	Surgery	79	Stretcher	2
Intensive Care Unit	127	ICU Bed	8	A'	New	○	○	○	○	○	○	○	3 beds of 10 approved beds are put into effect now. In the maximum 8 beds are to plan in the condition of ensuring rooms in existing bldg.	3	3	0	3	0	8	12	Intensive Care Unit	81	ICU Bed	8
	128	Patient monitor	10	A'	Rep Add	△	○	○	○	○	○	×	To be studied in Surgery Department	-	-	-	-	-	-	-				0
					Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of number of installation available operation tables in existing bldg. Tow units are available to EtCO2 monitoling	8	7	0	7	0	11	14	Surgery	80-A	Patient monitor	8
													Need to monitoring of EtCO2 for laparo-surgery, because of use CO2 gas for insufflator during of the operation.								Surgery	80-B	Patient monitor, CO2 sensor	2
	129	Oxygen supplying center	2	B'	Add	×	×	○	○	○	○	×	To be eliminated because they can be used only in existing bldg. (The new bldg. is central piping system)	2	-	-	-	-	-	0				0
	130	Respirator	8	A'	Rep	○	○	○	○	○	○	○	To be planned one units by four beds in the existing bldg., renewed one old unit, and added	2	1	0	1	0	2	3	Intensive Care Unit	82	Respirator	2
	131	Monitor Pet CO2	2	A'	Rep Add	○	○	○	○	○	○	○	To be planned same Q'ty as No.130 Respirator	1	1	0	1	0	2	3	Intensive Care Unit	83	Patient monitor, CO2 sensor	2
	132	Syringe pump	10	A'	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up to a ceiling of number of ICU beds in existing bldg.	1	1	0	1	0	8	12	Intensive Care Unit	84	Syringe pump	8
	133	Electrocardiography	4	A'	New	○	○	○	○	○	○	○	One unit is enough for this department	0	-	-	-	-	1	1	Intensive Care Unit	85	Electrocardiography	1
	134	Air sterilizer machine	3	A'	New	○	×	○	○	○	○	×	These should be studied as air conditioning specification in new BC bldg.	0	-	-	-	-	-	-				0
	135	Liquid warmer	2	A'	New	×	×	○	○	○	○	×	To be eliminated because their purpose of use is unclear	0	-	-	-	-	-	-				0
Pathology Obtetrics Department	136	Fetal Monitor	1	A'	Rep	○	○	○	○	○	○	○	To be renewed the old one	4	3	2	1	0	4	4	Pathology Obstetrics Department	86	Fetal monitor	1
	137	Ultrasound unit, 2D	1	A'	Rep	○	○	○	○	○	○	○	To be renewed for old	1	1	0	1	0	1	1	Pathology Obstetrics Department	87	Ultrasound unit, color doppler B	1
Center for Education and Training	138	Midwifery simulator	3	A	New	○	○	○	○	○	○	○	To be planned entire body type	0	-	-	-	-	-	-	Center for Education and Training	88	Midwifery simulator	3
	139	Maternity model	3	A	Add	○	○	○	○	○	○	○	To be changed name because of specification contents. To be changed to half body type which is high portability	1	0	0	0	0	-	-	Center for Education and Training	89	Obstetric and gynecologic simulator	3
	140	Baby doll, male (Bathing & Nursing)	10	A	New	○	○	○	○	○	○	○	To be adjusted Q'ty up in light of fixed students number of one course	0	-	-	-	-	-	-	Center for Education and Training	90	Baby doll, male (Bathing & Nursing)	5
	141	Baby doll, female (Bathing & Nursing)	10	A	Rep Add	○	○	○	○	○	○	○	To be adjusted Q'ty up in light of fixed students number of one course	3	3	0	3	0	-	-	Center for Education and Training	91	Baby doll, female (Bathing & Nursing)	5
	142	Baby doll, premature (Bathing & Nursing)	10	A	New	○	○	○	○	○	○	○	To be adjusted Q'ty up in light of fixed students number of one course	0	-	-	-	-	-	-	Center for Education and Training	92	Baby doll, premature (Bathing & Nursing)	5
	143	Breast examination simulator	10	A	New	○	○	○	○	○	○	○	To be adjusted Q'ty up in light of fixed students number of one course	0	-	-	-	-	-	-	Center for Education and Training	93	Breast examination simulator	5
	144	Intravenous injection arm simulator	10	A	New	○	○	○	○	○	○	○	To be adjusted Q'ty, integrating No.148 blood drawing and vein simulator	0	-	-	-	-	-	-	Center for Education and Training	94	Blood collection and intravenous injection arm simulator	5
	145	Catheterization simulator, female	2	A	New	○	○	○	○	○	○	○	To be planned newly because existing items are manipulation model	1	0	0	0	0	-	-	Center for Education and Training	95	Urethral catheterization simulator, female	2
	146	Catheterization simulator, male	2	A	New	×	×	○	○	○	○	×	To be eliminated because the demand is low	0	-	-	-	-	-	-				0

Examination of the Requested Equipment

Department	Request No.	Request Name of Equipment	Q'ty	Priority	Classification	Purpose	Need	Tec. Level	Operation system	Maintenance system	Ope. & Mainte. Cost	Judgement	Remarks	Existing Q'ty	Old Existing Q'ty	Old Existing Continuation Q'ty	Old Existing, Renwal Q'ty	Unable to Use Existing	Installation Available Q'ty in Existing bldg.	New BC bldg. Planned Q'ty	Planned Department	(Planned) Item No.	Planned Name of Equipment	Planned Q'ty
	147	Blood pressure measurement trainer	2	A	New	○	○	○	○	○	○	○	To be planned for ability retraining	0	-	-	-	-	-	-	Center for Education and Training	96	Blood pressure measurement trainer	2
	148	Blood collection simulator, intravenous injection	2	A	New	×	×	○	○	○	○	×	To be included in No.144	0	-	-	-	-	-	-				0
	149	Female anatomic model	1	A	New	○	○	○	○	○	○	○	Existing item is only pelvis model	1	0	0	0	0	-	-	Center for Education and Training	97	Female anatomic model	1
	150	Pelvis model with head of embryo	1	A	New	○	○	○	○	○	○	○	To be changed name because of specification contents. To be planned necessary one	0	-	-	-	-	-	-	Center for Education and Training	98	Pelvis model with fetal head	1
	151	Development of fetus model	1	A	New	○	○	○	○	○	○	○	To be planned necessary one	0	-	-	-	-	-	-	Center for Education and Training	99	Development of fetus model	1
	152	Torso dual sex	1	A	New	○	○	○	○	○	○	○	To be planned necessary one	0	-	-	-	-	-	-	Center for Education and Training	100	Torso dual sex	1
	153	Urinary system model	1	A	New	○	○	○	○	○	○	○	To be planned type for women	0	-	-	-	-	-	-	Center for Education and Training	101	Urinary system model	1
	154	Projector	3	A	Add	○	○	○	○	○	○	○	To be planned three units for new lecture room. They are also used in DOHA activity	1	0	0	0	0	4	-	Center for Education and Training	102	Projector	3
	155	Screen	3	B	Add	○	○	○	○	○	○	○	To be planned three units for new lecture room. They are also used in DOHA activity	1	0	0	0	0	4	-	Center for Education and Training	103	Screen	3
Imaging Diagnosis Department	156	X-ray unit, mobile	1	B	Rep	○	○	○	○	○	○	○	To be renewed the old one	1	1	0	1	0	-	-	Imaging Diagnosis Department	105	X-ray unit, mobile	1
	157	X-ray film viewer	3	A	Rep Add	○	○	○	○	○	○	○	To be renewed one old item and added one in mammography room and new general X-ray	2	2	0	2	0	-	-	Imaging Diagnosis Department	106	X-ray film viewer	3
	158	X-ray unit, fluoroscopy	1	A	Add	○	○	○	○	○	○	○	To be installed in present mammography room where the equipments were taken away	1	0	0	0	0	-	-	Imaging Diagnosis Department	107	X-ray unit, fluoroscopy, digital	1
	159	X-ray unit, general	1	A	Add	○	○	○	○	○	○	○	To be planned new one which will be installed exsit patient resting room.	2	1	1	1	0	-	-	Imaging Diagnosis Department	108	X-ray unit, general	1
Center for Assisted Addroductive Technology	160	Air sterilizer system	1	B'	Add	×	○	○	○	○	○	×	To be eliminated because it corresponds to life manipulation and reproductive medicine	1	-	-	-	-	-	-				0
	161	Air shower	1	B'	New	×	○	○	○	○	○	×	To be eliminated because it corresponds to life manipulation and reproductive medicine	0	-	-	-	-	-	-				0
	162	CO2 Incubators	8	B'	Add	×	○	○	○	○	○	×	To be eliminated because they correspond to life manipulation and reproductive medicine	6	-	-	-	-	-	-				0
	163	Manipulation system microscope	2	B'	Add	×	○	○	○	○	○	×	To be eliminated because they correspond to life manipulation and reproductive medicine	2	-	-	-	-	-	-				0
	164	Stereo microscope	6	B'	Add	×	○	○	○	○	○	×	To be eliminated because they correspond to life manipulation and reproductive medicine	3	-	-	-	-	-	-				0
	165	Workstation / laminated Hood	6	B'	Add	×	○	○	○	○	○	×	To be eliminated because they correspond to life manipulation and reproductive medicine	2	-	-	-	-	-	-				0
	166	Water purifiers	2	B'	New	×	○	○	○	○	○	×	To be eliminated because they correspond to life manipulation and reproductive medicine	0	-	-	-	-	-	-				0
	167	Up-right microscope	1	B'	Add	×	○	○	○	○	○	×	To be eliminated because it corresponds to life manipulation and reproductive medicine	1	-	-	-	-	-	-				0
	168	Ultrasound with doppler	2	B'	Add	×	○	○	○	○	○	×	To be eliminated because they correspond to life manipulation and reproductive medicine	1	-	-	-	-	-	-				0
	169	Ultrasound 2D	3	B'	Add	×	○	○	○	○	○	×	To be eliminated because they correspond to life manipulation and reproductive medicine	1	-	-	-	-	-	-				0
	170	Nitrogen liquid container	10	B'	Add	×	○	○	○	○	○	×	To be eliminated because they correspond to life manipulation and reproductive medicine	10	-	-	-	-	-	-				0
	171	Embryo-freezing machine	1	B'	Add	×	○	○	○	○	○	×	To be eliminated because it corresponds to life manipulation and reproductive medicine	2	-	-	-	-	-	-				0
Hospital	172	Ambulance	1	A	Rep	○	○	○	○	○	○	○	Existing two vehicles are patient delivery level. Though both of them drive more than 70,000 km, one vehicle is to be renewed	2	2	1	1	0	-	-	Hospital	109	Ambulance	1

7. Equipment List

Equipment List

Appendix-7

Department	Item No.	Name of Equipment	Q'ty
Cytogenetics Department	1	Water bath	1
	2	Hotplate	1
	3	Staining machine	1
	4	Automated cover slipper	1
	5	Centrifuge	1
	6	Thin layer sample making system	1
Hematology Department	7	Hematology analyzer	1
	8	Polymerase chain reaction machine	1
	9	Deep freezer	1
Micro-organism Department	10	CO2 Incubator	1
	11	Shaker	1
	12	Deep freezer	1
	13	ELISA system	1
Bio-chemistry Department	14	Automatic bio-chemical analyzer	1
	15	Centrifuge, RIA tube	1
	16	Microscope	1
Infection Control Department	17	Autoclave	1
Biopsy Anatomy Department	18	Tissue processor	1
	19	Autopsy table	1
	20	Refrigerator, mortuary	1
	21	Microtome	1
	22	Microscope, multi viewer	1
	23	Cryotome	1
	24	Paraffin Embedding Center	1
Neonatal Department	25	Infusion pump	6
	26	Syringe pump	15
	27	Ventilator, newborn	5
	28	Patient monitor, neonatal	5

Equipment List

Department	Item No.	Name of Equipment	Q'ty
	29	Phototherapy unit	10
	30	Infant incubator	12
	31	Suction unit for infant	7
	32	Ambu set for infant	5
	33	IV stand	10
	34	Infant trolley	5
	35	Oxygen hood	7
	36	Laryngoscope for newborn	9
Delivery Department	37	Instrument set for normal delivery	40
	38	Doppler, fetus	2
	39	Syringe pump	9
	40	IV stand	5
	41	Instrument trolley	8
	42	Wheel chair	4
	43	Stretcher	4
	44	Examination lamp	18
	45	Delivery table	17
	46	Delivery table, multi function	1
	47	Cord control set	40
	48	Instrument set for post-partum	40
	49	Instrument set for still birth	4
	50	Vacuum extractor	6
	51	Obstetric monitor	4
	52	Obstetric monitor, maternal monitoring	9
Examination Department	53	Biopsy forceps set	50
	54	Pozzi forceps set	10
	55	Treatment set	50
	56	Pincette with tooth	50

Equipment List

Department	Item No.	Name of Equipment	Q'ty
	57	Allis forceps	5
	58	Speculum	200
	59	Vaginal valve	10
	60	Tray set	10
	61	Cycle box set	20
	62	Ultrasound unit, color doppler A	1
	63	Ultrasound unit, B/W	4
	64	Hysteroscope set	1
	65	Electrosurgical unit, LEEP	2
	66	Colposcope	2
	67	Sphygmomanometer, electric	5
	68	Examination table, gynecology	5
	69	Doppler, fetus	4
Surgery	70	Suction unit	5
	71	Laparoscope set	1
	72	Resectoscope set	1
	73	Operation table	11
	74	Operation lamp, mobile	10
	75	Electrosurgical unit	10
	76	Anesthesia machine	9
	77	Laryngoscope	2
	78	Wheel chair	2
	79	Stretcher	2
	80-A	Patient monitor	8
	80-B	Patient monitor, CO2 sensor	2
Intensive Care Unit	81	ICU Bed	8
	82	Respirator	2
	83	Patient monitor, CO2 sensor	2

Equipment List

Department	Item No.	Name of Equipment	Q'ty
	84	Syringe pump	8
	85	Electrocardiography	1
Pathology Obstetrics Department	86	Fetal monitor	1
	87	Ultrasound unit, Color doppler B	1
Center for Education and Training	88	Midwifery simulator	3
	89	Obstetric and gynecologic simulator	3
	90	Baby doll, male (Bathing & Nursing)	5
	91	Baby doll, female (Bathing & Nursing)	5
	92	Baby doll, premature (Bathing & Nursing)	5
	93	Breast examination simulator	5
	94	Blood collection and intravenous injection arm simulator	5
	95	Urethral catheterization simulator, female	2
	96	Blood pressure measurement trainer	2
	97	Female anatomic model	1
	98	Pelvis model with fetal head	1
	99	Development of fetus model	1
	100	Torso dual sex	1
	101	Urinary system model	1
	102	Projector	3
	103	Screen	3
Imaging Diagnosis Department	104	X-ray unit, mammograph	1
	105	X-ray unit, mobile	1
	106	X-ray film viewer	3
	107	X-ray unit, fluoroscopy, digital	1
	108	X-ray unit, general	1
Hospital	109	Ambulance	1

8. Outline of Major Equipment

Outline of Major Equipment

Item No.	Name of equipment	Country of origin	Procured from	Mainspecifications or components	Grade	Q'ty	Purpose Appropriateess of equipmnet grade
3	Staining machine	Japan	Japan	1. Solution reservoir tank: 24 pcs. or more 2. Capacity of slide glass per hanging basket: 20 pcs. or more 3. Memorized program: Possible	Middle	1	To deparaffin and dye automatically pieces of samples paraffined in pathological department
4	Automated cover slipper	Germany	Japan	1. Coverslip speed (per hour): 400 slides or more 2. Number of slide basket: 8 pcs. or more 3. Coverglass size: 24 x 40, 24 x 50 and , 24 x 55mm	Middle	1	To improve the efficiency of works by encapsulating samples with cover glass automatically
6	Thin layer sample making system	USA	Japan	1. Componetnt: Main processing unit, Pre-treatment unit (if necessary), UPS, Installation material, Sample collecton device, Reagetnt kit 1) Type: Full or semi automatic 2) Throughput: 35 slides/hour or more 3) Sample collection device: 480 pcs. or more	Higher	1	To improve the precision of diagnosis by collecting and amplifying more pieces of cells in the slide when cytoscreening of hystero neck
7	Hematology analyzer	Japan	Japan	1. Measured parameter: RBC, WBC, HGB, HCT, MCV, MCH, MCHC, PLT, RETIC# etc. 2. Automatict calibration: Possible 3. Throughput: 80 samples/hour or more	Higher	1	The item for measuring red blood cells, white blood cells and hemoglobins. To be used for diagnosis as basic blood test
8	Polymerase chain reaction machine	Germany	Japan	1. Components: Main unit, Data processing hardware, Data processing software, UPS etc 1) Type: Real-time PCR 2) Excitation source: LED or Halogen lamp 3) Filter: 4 filters of more 4) Temp. control range: 4 to 99ºC or more 5) Heating speed: 2ºC/sec or more 6) Cooling speed: 1.5ºC/sec or more	Higher	1	To amplifying genes and judge more promptly that there is infection or not by antigen responses
9	Deep freezer	Netherlands	Viet Nam	1. Type: Uplight type 2. Capacity: Wihtin 330-450 Liter 3. Temperature range: -85ºC or less	Middle	1	To be used for storaging test reagents and samples need cryopreservation
12	Deep freezer	Netherlands	Viet Nam	1. Type: Uplight type 2. Capacity: Wihtin 330-450 Liter 3. Temperature range: -85ºC or less	Middle	1	To be used for storaging test reagents and samples need cryopreservation
13	ELISA system	Ireland	Japan	1. Components: Incubator, Microplate washer, Microplate reader, Data processing hardware, Data processing software, UPS 1) Plate type: 96 well plate 2) Temp. range: Room Temp. to 42ºC or more 3) Filter: 4 kinds or more 4) Read-out range: 0 to 2.7 Abs. or more	Higher	1	To judge infections such as BH, CH and sexually diseases by ELISA way
14	Automatic bio-chemical analyzer	Japan	Japan	1. Test throughput: 400 test/hour or more 2. Test menu: 24 items or more 3. Auto ampler: Built in type 4. Printer: Equipped	Middle	1	To be used for analyzing each pieces of samples such as blood and urine by test reagent, and figuring out metabolism statics
17	Autoclave	Sweden	Viet Nam	1. Door type: Single door type 2. Sterilizing Temp.: Max. 132ºC or more（at surgical instruments） 3. Chamber capacity: With in 390 to 500 Liters 4. Electric boiler unit: Suitable for this autoclave	Middle	1	To sterilize steel products and linens by high-pressure steam
19	Autopsy table	Japan	Japan	1. Dimensions: 2600(W) x 750(D) x 850(H)mm ± 10% 2. Material: Stainless steel	Middle	1	To use for harvesting pathological tissue and deconstruct to ascertain cause of death
20	Refrigerator, mortuary	Japan	Japan	1. Type: Front opening type 2. Capacity: 2 bodies 3. Temperature: Standared setting 5ºC 4. Dimensions：1800(W) x 2800(D) x 1770(H)mm ±10%	Middle	1	To use for comparatively short strages after death
23	Cryotome	Germany	Japan	1. Type: Rotary type 2. Temp. range of chamber: -35ºC or less 3. Sectionthickeness range: Min. 1µm or less, Max. 60µm more 4. Defrosting: Automatic	Middle	1	Item for slicing tissues resected from patients in pathology test. In especially, this item has functions to freeze and cut samples which needs to be examined rapidly in operation.

Outline of Major Equipment

Item No.	Name of equipment	Country of origin	Procured from	Mainspecifications or components	Grade	Q'ty	Purpose Appropriateess of equipmnet grade
24	Paraffin Embedding Center	Germany	Japan	1. Paraffin chamber capacity: 3L or more 2. Storage capacity: 100 pcs. or more 3. Temp. range: 50 to 70 °C or more 4. Cooling plate Temp. range: -5ºC or less	Middle	1	To make blocks which freeze and fix efficiency by injecting melt paraffin around samples for pathology test
27	Ventilator, newborn	Japan	Japan	1. Mode: Volume control, Pressure control, IMV, CMV, CPAP/PEEP 2. Tidal volume: 5 to 100 mL or more 3. Respiratory rate: 1 to 150 breath/min. or wider range	Middle	5	To use for patients who are unable to take breaths on their own in ICU. It is attached to prevent respiratory tract from obstruction
28	Patient monitor, neonatal	USA	Viet Nam	1. Measurement parameter: ECG, Respiration, SpO2, NIBP, Temperature 2. ECG heart rate range 1) Minimum: 30 bpm or less 2) Maximum: 250 bpm or more 3. Respiration rate range 1) Minimum: 0 resp./min. 2) Maximum: 150 resp./min. or more	Middle	5	To monitor biological information of severely ill patients continually in NICU
52	Obstetric monitor, maternal monitoring	Germany/ USA	Viet Nam	1. Measuring item: Fetal heart rate, Fetal ECG, MHR, MNIBP, MSpO2, MECG and uterine activity 2. Fetal hert rate 1) Measuring method: Pulse doppler 2) Measuring range: 50 bpm to 240 bpm or more	Higher	9	To monitor fetal cardiac sound and uterus contracts at contraction, and also they have functions to monitor maternal ECG, blood pressure and SpO2, accepting complications and high-risk delivery
62	Ultrasound unit, color doppler A	Japan	Japan	1. Scanning method: Electronic sector, Electronic convex, Electronic linear 2. Image mode: B, M, B/M, PWD 3. B mode 1) Gray scale: 256 levels or more 2) Max. depth: 25cm or more 4. Doppler mode 1) Doppler method: PWD, CWD, Color doppler 2) Sampling width Minimum: 1mm or less Maximum: 10 mm or more 5. Color monitor: 15-inch or more	Middle	1	To use for diagnostic imagings of inside of the body. To diagnostic growth of fetuses, blood flow and fault surface of heart, addominal organs and thyroid glands near skins by color images
63	Ultrasound unit, B/W	Japan	Japan	1. Type: Floor type with caster 2. Scanning method: Electronic convex, Electronic linear 3. Image mode: B and M 4. Max. depth: 21 cm or more 5. Probe connection: 2 6. Probe hanger: Equipped	Middle	4	To use for diagnostic imagings of inside of the body. To diagnostic growth of fetuses, heart, addominal organs by images
71	Laparoscope set	USA	Viet Nam	1. Telescope A (1) Field of view: 0 degree 2. Telescope B (1) Field of view: 25 or 30 degrees 3. Trocar sleeve and spike A (1) Diameter: 10.0 or 11 mm (2) Tip type: Metal sleeve, oblique distal tip, with insufflation 3. Trocar sleeve and spike A (1) Diameter: 5.0 or 5.5 mm (2) Tip type: Metal sleeve, oblique distal tip, with insufflation 6. Suction-irrigation pump: Equipped 6. Light source: Xenon lamp 7. Insufflator: CO2 gas 8. Video monitor system: Equipped 9. Electrosurgical unit: Cutting and Coagulation	Middle	1	Item for minimally invasive surgery without opening the abdomen. Major examples are treatment for endometriosis, cutting hysteromyoma, operations for various tumors
72	Resectoscope set	USA	Viet Nam	1. Telescope for resectscope (1) Field of view: 30 degrees 2. Sheath (1) Shape of tip: Round type (2) Diameter: 26Fr 3. Video monitor system: Equipped 4. Light source: Xenon lamp 5. Electrosurgical unit: Cutting and Coagulation	Middle	1	Item for minimally invasive surgery for gynecology without opening the abdomen. Major examples are treatment for endometriosis, cutting hysteromyoma, operations for various tumors

Outline of Major Equipment

Item No.	Name of equipment	Country of origin	Procured from	Mainspecifications or components	Grade	Q'ty	Purpose Appropriateess of equipmnet grade
73	Operation table	Japan	Japan	1. Operation: Electrical motor-driven 2. X-ray translucence: Possible 3. Height adjustment 1) Lowest: 730mm or less 2) Highest: 950mm or more 4. Trendelenburg: 20 degrees or more	Middle	11	To use for making patients be held their appropriate positions in various operations
76	Anesthesia machine	USA	Viet Nam	1. Flow meter range, O2 1) Minimum: 0.2L/min. or more 2) Maximum: 10L/min. or more 2. Flow meter range, Air 1) Minimum: 0.2L/min. or more 2) Maximum: 10L/min. or more 3. Anesthesia gas: Isoflurane and Sevoflurane 4. Tidal volume range of Ventilator: 1) Minimum: 50mL or less 2) Maximum: 1200mL or more	Middle	9	To use for making patients be put to sleep under full anesthesia in operations. And, for the patients who are unable to take breaths on their own under full anesthesia in operations, artificial ventilator will be used
80-A	Patient monitor	Japan	Japan	1. Measurement parameter: ECG, Respiration, SpO2, NIBP, Temperature 2. ECG heart rate range 1) Minimum: 30 bpm or less 2) Maximum: 250 bpm or more 3. Respiration rate range 1) Minimum: 0 resp./min. 2) Maximum: 150 resp./min. or more	Middle	8	To monitor biological information of patients continually in operation rooms and recovery rooms
80-B	Patient monitor, CO2 sensor	Japan	Japan	1. Type: For adult 2. Measurement parameter: ECG, Respiration, SpO2, NIBP, Temperature,CO2 (EtCO2) 3. ECG heart rate range 1) Minimum: 30 bpm or less 2) Maximum: 250 bpm or more 4. Respiration rate range 1) Minimum: 0 resp./min. 2) Maximum: 150 resp./min. or more	Middle	2	To monitor biological information of patients continually in operation rooms and recovery rooms, especially they have Co2 sensor to monitor respiratory function.
82	Respirator	Japan	Japan	1. Type: For adult 2. Mode: Volume Control, Pressure Control, IMV, CMV, SIMV(IDV), CPAP/PEEP 3. Tidal volume: 100 to 2000mL or more 4. Respiratory rate: 4 to 60 breath/min. or wider	Middle	2	To use for patients who are unable to take breaths on their own in ICU.
83	Patient monitor, CO2 sensor	Japan	Japan	1. Type: For adult 2. Measurement parameter: ECG, Respiration, SpO2, NIBP, Temperature,CO2 (EtCO2) 3. ECG heart rate range 1) Minimum: 30 bpm or less 2) Maximum: 250 bpm or more 4. Respiration rate range 1) Minimum: 0 resp./min. 2) Maximum: 150 resp./min. or more	Middle	2	To monitor biological information of patients continually in ICU, especially they have Co2 sensor to monitor respiratory function.
87	Ultrasound unit, Color doppler B	Japan	Japan	1. Type: Floor type with caster 2. Scanning method: Electronic convex, Electronic linear 3. Image mode: B and M 4. Max. depth: 21 cm or more 5. Probe connection: 2 6. Probe hanger: Equipped 7. Display size: 12-inch or more	Middle	1	To use for diagnostic imagings of inside of the body. To diagnostic growth of fetuses, especially observe to eclampsia of pregnancy
88	Midwifery simulator	USA	Japan	1. Full-body manikin, pregnant woman 1) Fetal heartbeat: Audible 2. Vaginal examination simulator set 1) Contents of tarining: Examination of the conditions of cervix inthe period between late pregnancy and childbirth 2) Composition: At least include more than 3 models represent different stages 3. Delivery simulator set 1) Contents of training: Practice of normal delivery, breech delivery, inspection of placenta and others 2) Composition: At least include fetus model,	Middle	3	To use for acquiring delivery techniques in training course for obstetric nurses and etc.

Outline of Major Equipment

Item No.	Name of equipment	Country of origin	Procured from	Mainspecifications or components	Grade	Q'ty	Purpose Appropriateess of equipmnet grade
104	X-ray unit, mammograph	Germany	Viet Nam	1. X-ray generator type: Inverter 2. Tube voltage: 22 to 35 kV or wider range 3. Tube current: 10 to 550 mAs or wider range 4. C-arm rotation: 180 to -135 degrees or wider range	Middle	1	To diagnosis myomas in tissues, concers and etcs, taking pictures with compressing breast masses
105	X-ray unit, mobile	Japan	Japan	1. X-ray generator type: Inverter 2. Tube voltage: Maximum 125 kV or more 3. Tube cureent: Maximum 160 mA or more 4. Column rotation: ±90 degrees or wider range	Middle	1	To take radial ray pictures argently and simply for patients who can't change position in operation rooms and ICU
107	X-ray unit, fluoroscopy, digital	Japan	Japan	1. Radiographic rating 1) Tube voltage: Maximum 150 kV or more 2) Tube current: Maximum 500 mA or more 2. Fluoroscopic rating 1) Tube voltage: 50 to 120 kV or wider range 2) Tube current: 0.4 to 4 mA or wider range 3. Monitor size: 12 inch or more	Middle	1	In department of gynecology, it is used for fluoroscopical examination such as hysterosalpingography
108	X-ray unit, general	Japan	Japan	1. X-ray generator type: Inverter 2. Tube voltage: Maximum 150 kV or more 3. Tube cureent: Maximum 500 mA or more 4. mAs: Maximum 630 mAs or more 5. Tube stand longitudinal taravel: 150 cm or more	Middle	1	To use for general X-ray photography of thoraco-abdominal part and four limbs
109	Ambulance	Japan	Japan	1. Engine: Gasoline 2. Displacement: Approx. 2000cc 3. Steering wheel: Left side, Type: One box type 4. Fuel tank capacity: More than 55 liters 5. Driven wheels: Two wheel drive. 6. Equipment: Roll-in stretcher, Oxygen mask with tube, Seat for 3 persons or more	General	1	To transfer emergency patients and patients in serious situation to medical facilities safely.

9. Operation and Maintenance Cost for the Equipment

Item No.	Name of equipment / Consumable goods and other	Sales unit	Basis for calculation of Q'ty	Q'ty	Unit	Unit price (1000VND)	Sub total (1000VND)	Q'ty of Plans	Total (1000VND)	Classification
4	Automated cover slipper							1		New
	・ Cover glass	1000 pcs./box	10000 pcs. ÷1000 pcs./box＝10 boxes	10	box	3,478.66	34,786.64	1	34,786.64	
	・ Xylene solvent	2 bottles/box, 500 ml/bottle	1ml for 1pc. 10000 pcs.×1ml ÷500÷2＝10 boxes	10	box	1,391.47	13,914.66	1	13,914.66	
6	Thin layer sample making system		Half number of total smear test, 38204tests/2＝19102tests					1		New
	・ Vial, Stick, Reagent, Slide glass	500 tests/kit	19100 tests÷500 tests/kit＝38.204 kits	39	kit	135,474.58	5,283,508.72	1	5,283,508.72	
	・ Annual maintenance contract	1 set	Spare parts are not included.	1	set	8,000.00	8,000.00	1	8,000.00	
7	Hematology analyzer		205400 tests÷2units＝102700 tests/year (÷260 days＝395 tests/day)					1		Rep.
	・ Reagent set	6000 tests/set	205400 tests ÷6000＝34.23 sets	35	set	109,230.06	3,823,051.95	1	3,823,051.95	
	・ Recording paper	A4: 500 sheets/pack	Printout: 20 sheet /1day, 20 sheets ×260 day ÷500＝10.4 packs	11	pack	69.57	765.31	1	765.31	
	・ Annual maintenance contract	1 set		1	set	5,000.00	5,000.00	1	5,000.00	
8	Polymerase chain reaction machine							1		New
	・ Reagent set	1 set, (HIV-1,HIV-2 each 500 tests)	15% of total screening HIV test by PCR. 47693tests×15%＝7154, 7200 tests (96Well×75 plates)÷500＝14.4 sets	15	set	153,061.22	2,295,918.37	1	2,295,918.37	
	・ Strip/plate etc.	1set (500 tests)	7200 tests ÷500＝14.4 sets	15	set	17,810.76	267,161.41	1	267,161.41	
	・ Annual maintenance contract	1 set	15% of total screening HIV tests by PCR	1	set	5,000.00	5,000.00	1	5,000.00	
10	CO2 Incubator							1		Rep.
	・ CO2gas	30kg cylinder	30kg cylinder for 6months, Chargethe gas twice a year.	2	times	1,113.17	2,226.35	1	2,226.35	
13	ELISA system		HB: 128tests×260days＝33280tests, Syphilis: 127tests×260days ＝33020tests, Chlamydia: 103tests×260days＝26780tests					1		Rep. New
	・ Reagent kit (Renewal) HBs Ag, HBs Ab, HBe Ag/Ab	96×2＝184tests	33280 tests/year÷184＝180.87 sets	181	set	47,115.03	8,527,820.04	1	8,527,820.04	Rep.
	・ Reagent kit (Renewal) Syphilis toatl Ab	96×2＝184tests	33020 tests/year÷184＝179.46 sets	180	set	7,235.62	1,302,411.87	1	1,302,411.87	Rep.
	・ Reagent kit (Renewal) Chlamydia IgG	96tests	26780 tests/year÷96＝278.96 sets	279	set	9,740.26	2,717,532.47	1	2,717,532.47	Rep.
	・ Reagent kit (Newly) HCV, Toxo. Rubella, CMV, Measles	96tests	6 items, each 100 tests per day, 26000 tests/year÷96tests＝270.83 sets	271	set	121,516.70	32,931,025.05	1	###########	New
	・ Annual maintenance contract	1 set		1	set	5,000.00	5,000.00	1	5,000.00	
14	Automatic bio-chemical analyzer		256000 tests/year÷260 days＝984.61tests/day					1		Rep.
	・ Reagent set	1 set, (24 item, each 600 tests)	256000 tests÷(24 items×600 tests)＝17.7 sets	18	set	139,146.57	2,504,638.22	1	2,504,638.22	
	・ Recording paper	A4: 1000 sheets equibarent/pc.	Printout: 20 sheet /1day, 20×260÷1000＝5.2 pcs.	6	pcs.	417.44	2,504.64	1	2,504.64	
	・ Annual maintenance contract	1 set		1	set	5,000.00	5,000.00	1	5,000.00	
17	Autoclave							1		Rep.
	・ Pre filter	pcs.	Change four times a year, each 1pc.	4	pcs.	556.59	2,226.35	1	2,226.35	
	・ Ion-exchange resin	25L/pack.	Change once a year, 20L/time＝20L	1	pack	4,638.22	4,638.22	1	4,638.22	
	・ Salt	25kg/pack.	Regeneration: Four times a month, consume 2.5kg of salt each time.	5	pack	927.64	4,638.22	1	4,638.22	
21	Microtome		Samples: 9600-1255＝8345 samples/year					1		Rep.
	・ Knife blade	50 pcs./box	Change every 15sampls. 8345samples÷15÷50pcs./box＝ 11.12boxes	12	box	1,391.47	16,697.59	1	16,697.59	
	・ Oil	50ml/bottle	Consuming 1bottle a year	1	bottle	487.01	487.01	1	487.01	
23	Cryotome		20% of gynecological operation, 6277cases×0.2＝1255cases/year					1		Rep.
	・ Knife blade	50 pcs./box	Change every 20sampls. 1255samples÷20÷50pcs./box＝ 1.26boxes	2	box	1,085.34	2,170.69	1	2,170.69	
	・ Compound	120ml/bottle, 4pcs./box	5ml use for 1samls. 1255samples×5ml÷120ml＝52.29 52.29÷4bottls＝13.07boxes	13	box	1,669.76	21,706.86	1	21,706.86	
24	Paraffin Embedding Console System		Samples: 9600-1255＝8345 samples/year					1		New
	・ Cassette	1000 pcs./pack.	8345 samples÷1000 pcs./pack＝8.345 packs	9	pack	3,061.22	27,551.02	1	27,551.02	
25	Infusion pump							6		New
	・ Tube needle set (for newborn)	10 sets/pack.	1patient use 10days. 365days×1person/day×10days÷10sets/pack＝3.65packs	4	pack	459.18	1,836.73	6	11,020.41	
26	Syringe pump		1patient use 1syringe a 1day, total 360 syringes a year.					15		Rep.
	・ Syringe (Disposable 10ml)	100 pcs./pack	100pcs.÷100pcs./pack＝1pack	1	pack	640.07	640.07	15	9,601.11	
	・ Syringe (Disposable 20ml)	50 pcs./pack	100pcs.÷50pcs./pack＝2pack	2	pack	431.35	862.71	15	12,940.63	
	・ Syringe (Disposable 30ml)	50 pcs./pack	100pcs.÷50pcs./pack＝2pack	2	pack	500.93	1,001.86	15	15,027.83	
	・ Syringe (Disposable 50ml)	20 pcs./pack	60pcs.÷20pcs./pack＝3pack	3	pack	306.12	918.37	15	13,775.51	
	・ Extention tube (4Ft)	100 pcs./pack.	365days×1person/day×1pc./person÷100pcs./pack＝3.65packs	4	pack	2,504.64	10,018.55	15	150,278.29	
27	Ventilator, newborn							5		Add.
	・ Humidity filter	100 sheets/set	365 days×1 person/day÷10 days÷100 sheets/set＝0.365 set	1	set	2,782.93	2,782.93	5	13,914.66	
	・ Bacteria filter (Reusable)	5 pcs./pack	Change 2 sets a year	2	set	10,435.99	20,871.99	5	104,359.93	
28	Patient monitor, neonatal							5		New
	・ ECG electrode set (for child)	150 sets/box	365days×1person/day÷10days×1set/person÷150sets/box＝ 0.24 box	1	box	3,005.57	3,005.57	5	15,027.83	
29	Phototherapy unit							10		Rep. 5unit Add. 5unit
	・ Lamp set	5 pcs./set	Life time of the lamp is 3000 hours. 365days×2hours/day＝730hours, 730h÷3000h＝0.24	1	set	1,043.60	1,043.60	10	10,435.99	
30	Infant incubator							12		Rep.
	・ Air filter	5 pcs./pack	Change every other month. 12months÷ 2months÷5pcs./pack＝1.2 packs	2	pack	1,280.15	2,560.30	12	30,723.56	
	・ Iris port cover set	set	Change 1 set a year	1	set	278.29	278.29	12	3,339.52	

Item No.	Name of equipment / Consumable goods and other	Sales unit	Basis for calculation of Q'ty	Q'ty	Unit	Unit price (1000VND)	Sub total (1000VND)	Q'ty of Plans	Total (1000VND)	Classification
38	Doppler, fetus							2		New
	・ Ultrasound gel	250ml/bottle	365days×13persons/day×2ml/time÷250ml/bottle=37.96bottles	38	bottle	43.48	1,652.37	2	3,304.73	
39	Syringe pump		15% of delivery case use the equipment, 19226cases×0.15=2883.9 Divide 9 unit, 2884cases÷9unit=320cases/unit					9		Add.
	・ Syringe (Disposable 10ml)	100 pcs./pack	100pcs.÷100pcs./pack=1pack	1	pack	640.07	640.07	9	5,760.67	
	・ Syringe (Disposable 20ml)	50 pcs./pack	100pcs.÷50pcs./pack=2pack	2	pack	431.35	862.71	9	7,764.38	
	・ Syringe (Disposable 30ml)	50 pcs./pack	100pcs.÷50pcs./pack=2pack	2	pack	500.93	1,001.86	9	9,016.70	
	・ Syringe (Disposable 50ml)	20 pcs./pack	20pcs.÷20pcs./pack=1pack	1	pack	306.12	306.12	9	2,755.10	
	・ Extention tube (4Ft)	100 pcs./pack	320÷100pcs./pack=3.20packs	4	pack	2,504.64	10,018.55	9	90,166.98	
44	Examination lamp							18		Rep. 9unit Add. 9unit
	・ Bulb (1pc./unit)	1 pc.	Life time of the lamp is 1000 hours. 365days×6times/day×0.5hour/time=1095hours	1	pc.	667.90	667.90	18	12,022.26	
51	Obstetric monitor							4		Rep.
	・ Ultrasound gel	250ml/bottle	365days×4persons/day×5ml/person÷250ml/bottle=29.2bottles	30	pcs.	139.15	4,174.40	4	16,697.59	
	・ Recording paper	30m/roll	365days×4persons/day×1m/person÷30m/roll=12.1rolls	12	roll	236.55	2,838.59	4	11,354.36	
52	Obstetric monitor, maternal monitoring							9		Rep.
	・ ECG electrode (for maternal)	300 set/box	365days×4persons/day÷300sets/box=4.86boxes	5	box	285.00	1,425.00	9	12,825.00	
	・ Ultrasound gel	250ml/bottle	365days×4persons/day×5ml/persons÷250ml/bottle=29.2bottles	30	bottle	9.50	285.00	9	2,565.00	
	・ Recording paper	30m/roll	365days×4persons/day×1m/persons÷30m/roll=12.1rolls	12	roll	11.40	136.80	9	1,231.20	
62	Ultrasound unit, color doppler A							1		Add.
	・ Ultrasound gel	250cc/bottle	260days×32persons/day×5cc÷250cc/bottle=166.4bottles	167	bottle	241.19	40,278.29	1	40,278.29	
	・ Recording paper, color	10rolls/box, (20m/roll)	260days×32persons/day×0.4m/persons÷20m/roll÷10rolls/box=16.64boxes	17	box	31,354.36	533,024.12	1	533,024.12	
63	Ultrasound unit, B/W							4		Rep.
	・ Ultrasound gel	250cc/bottle	260days×32persons/day×5cc÷250cc/bottle=166.4bottles	10	box	241.19	2,411.87	4	9,647.50	
	・ Recording paper	10rolls/box, (20m/roll)	260days×32persons/day×0.4m/persons÷20m/roll÷10rolls/box=16.64boxes	17	box	10,853.43	184,508.35	4	738,033.40	
64	Hysteroscope set							1		Rep.
	・ Halogen bulb	1 pc.	Life time of the lamp is 500 hours. 260days×5persons/day×1hour/time÷500hours=2.6pcs.	3	pcs.	359.94	1,079.81	1	1,079.81	
65	Electrosurgical unit, LEEP							2		Rep. 1unit Add. 1unit
	・ Electrode set (Reusable)	1set	Change 2 sets a year	2	set	65.27	130.53	2	261.06	
	・ Inactive electrode set (Reusable)	1set	Change 2 sets a year	2	set	0.00	0.00	2	0.00	
69	Doppler, fetus							4		Rep.
	・ Ultrasound gel	250ml/bottle	260days×15persons/day×5ml/time÷250ml/bottle=78bottles	78	bottle	173.93	13,566.79	4	54,267.16	
74	Operation lamp, mobile							10		New
	・ Halogen bulb (4pcs./unit)	1 pc.	Life time of the lamp is 1000 hours. 260days×6times/day×1hour/time=1560hours, 1560h÷1000h=	8	pcs.	1,001.86	8,014.84	10	80,148.42	
75	Electrosurgical unit							10		Rep. 5unit Add. 5unit
	・ Electrode set (Reusable)	1set	Change 2 sets a year	2	set	2,643.78	5,287.57	10	52,875.70	
	・ Inactive electrode set (Reusable)	1set	Change 2 sets a year	2	set	0.00	0.00	10	0.00	
76	Anesthesia machine							9		Rep. 5unit Add. 4unit
	・ CO2 absorber, soda lime	4.5kg/pack	260days×6times/day×1hour/time×0.05kg/hour÷4.5kg/pack=17.3packs	18	pack	555.46	9,998.27	9	89,984.39	
	・ Tube set (for adult)	1 set	Change 1 set a year	1	set	8,834.02	8,834.02	9	79,506.21	
	・ Mask set (for adult)	1 set	Change 1 set a year	1	set	1,266.45	1,266.45	9	11,398.02	
80-A	Patient monitor							8		Rep. 7unit Add. 1unit
	・ ECG electrode set (for adult)	150 sets/box	260days×6persons/day×1set/person÷150sets/box=10.4boxes	11	box	3,005.57	33,061.22	8	264,489.80	
	・ Recording paper	10rolls/box, (20m/roll)	260days×6persons/day×1.0m/persons÷20m/roll÷10rolls/box=7.8boxes	8	box	904.45	7,235.62	8	57,884.97	
80-B	Patient monitor, CO2 sensor							2		Add. 2unit
	・ ECG electrode set (for adult)	150 sets/box	260days×6persons/day×1set/person÷150sets/box=10.4boxes	11	box	1,523.65	16,760.20	2	33,520.41	
	・ Recording paper	10rolls/box, (20m/roll)	260days×6persons/day×1.0m/persons÷20m/roll÷10rolls/box=7.8boxes	8	box	653.99	5,231.91	2	10,463.82	
	・ Airway adapter	30 pcs./box	260days×6persons/day×1set/person÷4days÷30sets/box=52boxes	52	set	5,009.28	260,482.37	2	520,964.75	
	・ Adapter for nose and mouth	30 pcs./set	260days×6persons/day×1set/person÷4days÷30sets/box=52boxes	52	set	7,096.47	369,016.70	2	738,033.40	
82	Respirator							1		Rep.
	・ Humidity filter	100 sheets/set	365days×1person/day×1set/person÷4days÷100sheet/set=0.91set	1	set	2,782.93	2,782.93	1	2,782.93	
	・ Bacteria filter (Reusable)	5 pcs./pack	Change 2 sets a year	2	set	2,476.81	4,953.62	1	4,953.62	
83	Patient monitor, CO2 sensor							2		Rep. 1unit Add. 1unit
	・ ECG electrode set (for adult)	150 sets/box	365days×1person/day×1set/person÷4days÷150sets/box=0.61box	1	box	1,523.65	1,523.65	2	3,047.31	
	・ Recording paper	10rolls/box, (20m/roll)	365days×1person/day×1.0m/person÷20m/roll÷10rolls/box=1.83boxes	2	box	653.99	1,307.98	2	2,615.96	
	・ Airway adapter	30 pcs./box	365days×1person/day×1set/person÷4days÷30sets/box÷2=1.52boxes	2	set	5,009.28	10,018.55	2	20,037.11	
	・ Adapter for nose and mouth	30 pcs./set	365days×1person/day×1set/person÷4days÷30sets/box÷2=1.52boxes	2	set	7,096.47	14,192.95	2	28,385.90	

Operation and Maintenance Cost for the Equipment

Item No.	Name of equipment / Consumable goods and other	Sales unit	Basis for calculation of Q'ty	Q'ty	Unit	Unit price (1000VND)	Sub total (1000VND)	Q'ty of Plans	Total (1000VND)	Classification
84	Syringe pump		1patient use 1syringe a 1day, total 360 syringes a year.					8		Rep. 1unit Add. 7unit
	・ Syringe (Disposable 10ml)	100 pcs./pack	100pcs.÷100pcs./pack＝1pack	1	pack	640.07	640.07	8	5,120.59	
	・ Syringe (Disposable 20ml)	50 pcs./pack	100pcs.÷50pcs./pack＝2pack	2	pack	431.35	862.71	8	6,901.67	
	・ Syringe (Disposable 30ml)	50 pcs./pack	100pcs.÷50pcs./pack＝2pack	2	pack	500.93	1,001.86	8	8,014.84	
	・ Syringe (Disposable 50ml)	20 pcs./pack	60pcs.÷20pcs./pack＝3pack	3	pack	306.12	918.37	8	7,346.94	
	・ Extention tube (4Ft)	100 pcs./pack.	365days×1person/day×1pc./person÷100pcs./pack＝3.65packs	3	pack	2,504.64	7,513.91	8	60,111.32	
85	Electrocardiography							1		New
	・ Recording paper	10rolls/box, (20m/roll)	365days×3persons/day×0.5m/person÷20m/roll÷10rolls/box＝2.73boxes	3	box	1,043.60	3,130.80	1	3,130.80	
	・ ECG cream	100 g/tube、2 tubes/set	365days×3person/day×2g/time÷100g/bottle÷2bottles/set＝10.95sets	11	set	139.15	1,530.61	1	1,530.61	
86	Fetal monitor							1		Rep.
	・ Ultrasound gel	250ml/bottle	365days×10persons/day×5ml/person÷250ml/bottle＝73.00bottles	73	bottle	139.15	10,157.70	1	10,157.70	
	・ Recording paper	30m/set	365days×10persons/day×1m/person÷30m/set＝121.67sets	122	set	236.55	28,859.00	1	28,859.00	
87	Ultrasound unit, color doppler B							1		Rep.
	・ Ultrasound gel	250cc/bottle	365days×5persons/day×10cc÷250cc/bottle=73bottles	73	bottle	278.29	20,315.40	1	20,315.40	
	・ Recording paper	10rolls/box, (20m/roll)	365days×5persons/day×0.2m/person÷20m/roll÷10rolls/box＝1.825boxes	2	box	36,178.11	72,356.22	1	72,356.22	
94	Blood collection and intravenous injection arm simulator							5		New
	・ Simulated skin	2pcs./pack.	Chaneg every 3times of training are done. 6course a year, 6÷3÷2pcs/pack=1pack	1	pack	2,504.64	2,504.64	5	12,523.19	
	・ Simulated vein	2pcs./pack.	Chaneg every 3times of training are done. 6course a year, 6÷3÷2pcs/pack=1pack	1	pack	834.88	834.88	5	4,174.40	
	・ Simulated blood	100cc/bottle	Using 1 bottle for each training course. 6course a year.	6	bottle	417.44	2,504.64	5	12,523.19	
104	X-ray unit, mammograph							1		New
	・ X-ray film	100 sheets/box	260days×20persons/day×4sheets/persons÷100sheets/box＝208boxes	208	box	3,840.91	798,909.09	1	798,909.09	
	・ Annual maintenance contract	1 set	Periodical check only (15,000,000VND≒87000JPY)	1	set	16,141.00	16,141.00	1	16,141.00	
105	X-ray unit, mobile							1		Rep.
	・ X-ray film	100 sheets/box	365days×10persons/day×2sheets/persons÷100sheets/box＝73boxes	73	box	4,887.66	356,799.35	1	356,799.35	
	・ Annual maintenance contract	1 set	Periodical check only (15,000,000VND≒87000JPY)	1	set	16,141.00	16,141.00	1	16,141.00	
106	X-ray film viewer							3		Rep. 2unit Add. 1unit
	・ Fluorescent lamp (8 pcs./set)	8pcs./set	Life time of the lamp is 3000 hours. 260days×6hours/day÷3000hours=0.52	1	set	389.61	389.61	3	1,168.83	
107	X-ray unit, fluoroscopy, digital							1		Add.
	・ X-ray film	100 sheets/box	260days×12persons/day×2sheets/person÷100sheets/box＝31.2boxes	32	box	4,887.66	156,405.19	1	156,405.19	
	・ Annual maintenance contract	1 set	Periodical check only (15,000,000VND≒87000JPY)	1	set	16,141.00	16,141.00	1	16,141.00	
108	X-ray unit, general							1		Rep.
	・ X-ray film	100 sheets/box	260days×36persons/day×2sheets/person÷100sheets/box＝187.2boxes	188	box	4,887.66	918,880.52	1	918,880.52	
	・ Annual maintenance contract	1 set	Periodical check only (15,000,000VND≒87000JPY)	1	set	16,141.00	16,141.00	1	16,141.00	
109	Ambulance							1		Rep.
	・ Fuel (Gasoline)	L	365days×50km/day÷5km/L＝3650L	3650	L	13.73	50,111.32	1	50,111.32	
	・ Engine oil	L	Change every 5000km, 365days×50km/day÷5000km=3.65times, Consume 5L each time, 4×5L=20L	20	L	92.76	1,855.29	1	1,855.29	
	・ Filter	pc.	Change every 5000km, 365days×50km/day÷5000km=3.65times, Consume 1pc. each time, 4×1pc.=4pcs.	4	pcs.	556.59	2,226.35	1	2,226.35	
	・ Insurance	set		1	set	11,131.73	11,131.73	1	11,131.73	

Grand total	##########
Total of Renewal	##########
Total of New Equip. and Replenishment	##########
Total of annual maintenance (for Replacemer	42,282.00
Total of annual maintenance (for New & Add	50,282.00

10. References

References

Project title: Basic Design Study on the Project for Project for Improvement of Equipment in the National Hospital for Obstetrics and Gynecology in the Socialist Republic of Viet Nam

	No.	Title	Form Book/Video Map/Photo etc.	Original or Copy	Source	Date of Issue
	1	National Strategy on Reproductive Health Care	Book	Copy	MoH	2000
	2	Ntional Standards and Guidelines for Reproductive Health Care Services	Book	Copy	MoH	2002
	3	Health Service in Vietnam Today	Book	Copy	MoH	2006
	4	Comprehensive Development Design for the Health System in Vietnam to 2010 and Vision by 2020	Book	Copy	MoH	2006
	5	Vietnam Health Report 2006	Book	Copy	MoH	2007
	6	Joint Annual Health Review 2007	Book	Copy	MoH	2008
	7	Joint Annual Health Review 2008	Book	Copy	MoH	2008
	8	Health Statistics Yearbook 2003	Book	Copy	MoH	2003
	9	Health Statistics Yearbook 2004	Book	Copy	MoH	2004
	10	Health Statistics Yearbook 2005	Book	Copy	MoH	2005
	11	Health Statistics Yearbook 2006	Book	Copy	MoH	2007
	12	Health Statistics Yearbook 2007	Book	Copy	MoH	2009
	13	Drawings for New BC building	Book	Copy	Architectural design Company	2009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