

There are also some facilities which are using portable generators with the capacity of 0.5KVA for temporization.

As seen in the above descriptions, although each facility is rendering services in its way with the medical equipment, the most serious problems for the facility are said to be lack of equipment and break-down of the equipment. Some equipment of the facilities surveyed have not been functioning properly due to break-down which might be caused by the specific climate conditions in the Philippines, namely high temperature and humidity as well as dust. Such a circumstance at the provincial level may be greatly improved, therefore, by providing the facilities with additional medical equipment taking into considerations of the following two points:

- (1) To select the equipment with anti-erosion ;
and
- (2) To improve the environment inside the facilities by providing air conditioners.

2-5 Background and Contents of the Request

2-5-1 Background of the Request

The Government of the Philippines has significantly improved the rural health service activities receiving in Japanese fiscal year 1983 the Japanese Government's Grant Aid to the Medical Equipment Supply Project for 13 Regional Hospitals, which are positioned at upper level than provincial hospitals for which another grant aid is being requested. Encouraged by the success of the above-mentioned Medical Equipment Supply Project, Department of Health has requested the Government of Japan for another grant aid in order to attain the objectives of the National Health Programme improving the quality of health service activities of provincial hospitals closely engaging in the health services to the inhabitants of rural areas.

2-5-2 Contents of the Request

The request of the Government of the Philippines is to provide the following 26 provincial hospitals with medical equipment mentioned below:

(1) The Subjected Facilities

PROVINCIAL HOSPITALS FOR EQUIPMENT UPGRADING

Region

I	Gov. Teofilo Sison Memorial Hospital	Dagupan City, Pangasinan
	Bontoc General Hospital	Bontoc, Mountain Province
II	Ifugao General Hospital	Lagawe, Ifugao
	Isabela Provincial Hospital	Iligan, Isabela
III	Bataan Provincial Hospital	Balanga, Bataan
	Pres. Ramon Magsaysay Memorial Hospital	Iba, Zambales
	Tarlac Provincial Hospital	Tarlac, Tarlac
IV	Quezon Memorial Hospital	Lucena City, Quezon
V	Albay Provincial Hospital	Legaspi City, Albay
	Sorsogon Provincial Hospital	Sorsogon, Sorsogon
VI	Roxas Memorial General Hospital	Roxas City, Capiz
	Corazon Locsin Montelibano Memorial Hospital	Bacolod
VII	Negros Oriental Hospital	Dumaguete City, Negros Oriental
VIII	Southern Leyte Provincial Hospital	Maasin Leyte del Sur
	Eastern Samar Provincial Hospital	Borongan, Eastern Samar
IX	Sulu Hospital	Jolo, Sulu
	Zamboanga del Norte Provincial Hospital	Dipolog City, Zamboanga del Norte
	Datu Halun Sakilan Memorial Hospital	Bongao, Tawi Tawi
X	Butuan Hospital	Butuan City, Agusan del Norte
	Bukidnon Hospital	Malaybalay, Bukidnon

	Misamis Occidental Provincial Hospital	Oroquieta City, Misamis Occidental
	Surigao del Norte Provincial Hospital	Surigao del Sur
XI	Davao del Sur Provincial Hospital	Digos, Davao del Sur
	Surigao del Sur Provincial Hospital	Tandag, Surigao del Sur
	South Cotabato Provincial Hospital	Marbel, South Cotabato
XII	Sultan Kudarat Provincial Hospital	Isulan, Sultan Kudarat

(2) List of the Equipment requested

Summay list of designed equipment

1. Diagnosis Equipment

Diagnostic X-Ray Equipment
Image Intensify TV Monitor
X-Ray Room Airconditioner
Automatic X-Ray Film Processor
X-Ray Film Processing Tank
X-Ray Accessories Set
Ultrasound Scanner
Defibrilator
Electrocardiograph
Broncho Fiberscope
Gastrointestinal Fiberscope
Proctosigmoidoscope
Cystoscopy Apparatus
Endoscopic Cabinet
Diagnostic Set
Sphygmomanometer, Stand-type
Sphygmomanometer, Table-Top

Stethoscope

2. Operating Room Equipment

Major Operating Light
Minor Operating Light
Mobile Operating Light
Major Operating Table
Orthopedic Surgery Table
Gynecological Surgery Table
Minor Operating Table
Major O.R. Airconditioner
Gyn. O.R. Airconditioner
Minor O.R. Airconditioner
Anesthesia Apparatus
Electro-Surgical Unit
Mobile Suction Unit
Portable Suction Unit
High Speed Sterilizer
Endotracheal Set
Manual Resuscitator Set
Major Surgical Set
Minor Surgery Set

3. Intensive Care Unit Equipment

Bedside Patient Monitor
I.C.U. Bed
Defibrillator
Critical Care Ventilator
Portable Suction Unit
Manual Resuscitator
Air Conditioner for ICU

4. OB & GNY Equipment

Infant Incubator
Phototherapy Unit

Jacson Rees Resusci Bag
Oxygen Tent
Clinical Examination Table
Obstetric Delivery Table

5. Ward Equipment

Examination Lamp
Portable Suction Unit
Orthopedic Bed
Electrocardiograph
Instrument Sterilizer

6. Laboratory Equipment

Spectrophotometer
Laboratory Autoclave
Blood Bank Refrigerator
Laboratory Refrigerator
Water Bath
Laboratory Incubator
Differential Leucocyter Counter
Centrifuge
Binocular Microscop
Pipette Washer
Micro Tome
Auto Tissue Processor

7. Miscellaneous

Ambulance
Power Generator
High Pressure Sterilizer

CHAPTER III CONTENTS OF THE PROJECT

CHAPTER III

CONTENTS OF THE PROJECT

3-1 Objective of the Project

The objective of the Project is to upgrade the fundamental health service activities in the field of internal, surgical and obstetrics treatments being rendered by the provincial hospitals through provision of medical equipment for 26 Provincial Hospitals in the provinces concerned of the Philippines. Actually, it is planned to attain the objectives of the National Health Program of the country by improving the level of health services by providing these hospitals with equipment not only for the primary health care which is insufficient due to financial limitation of the Government but also for the secondary and tertiary health care whose equipment is unusable because of old age, in order to benefit the people of the Philippines. The Government of Japan, therefore, supplies the medical equipment under its grant aid program.

3-2 Study of Request Contents

3-2-1 Study of Project Contents

(1) Appropriateness of the Project's Implementation

Results of the studies of the objectives, level of the targets, formation, contents and scope of the Project, implementation system, technological level, operational plan and status of the objective facilities are outlined as follows. And the Basic Design Study Team considers that no problem exists in the realization of the Project and that conditions under which the Project is going to be implemented are appropriate.

1) Objectives of the Project and Level of the Targets

This Project is considered to not only contribute to the upgrading of health service to the people of the Philippines but also indirectly help the attainment of the targets of the National Health Program being pushed forward by the country.

2) Formation and Contents of the Project

This Project is to replenish the aged and incapacitated equipment for which the Government of the Philippines can not make an appropriation due to financial limitations. It can be said, therefore, that the equipment being requested is essential to the fundamental health services. And the equipment selected shall be used mainly for the primary and secondary health care but it can also be used for the tertiary health care.

3) Scope of the Project

This Project is to supply 26 Provincial Hospitals in capital cities selected from 77 provinces with medical equipment such as X-Ray units, operating and laboratory equipment which is extremely insufficient in such facilities.

4) Implementation System

The Project is to be implemented by the Government of the Philippines in accordance with the procedures of the Japanese Government's Grant Aid system, and hence it is considered that there exists no problem in securing the Project's implementation.

5) Technological Level and Operational Plan

The technical level of subjected facilities, the kernel hospitals with 50 to 250 beds, is highly estimated in the Philippines. Since most piece of the equipment requested are those being used in the routine services and orientation including teaching how to operate the equipment is planned to be given to the personnel concerned at the time of delivery, it is anticipated that there will be no problem in operating the

equipment to be supplied so far as the technical aspect is concerned. Furthermore, in view of the fact that most piece of the equipment to be supplied will be utilized for the fundamental health service, they will be useful for the routine services of the subjected facilities. However, some piece of equipment to be used for curative and examination purposes shall be excluded, as described in 3-2-2, from the supply list since they will cause difficulties for the facilities in operating them with the present technological level of the personnel concerned of the facilities. In the operational plan to be made up with the supply of the equipment, no equipment requiring additional costs for maintenance and operation is included in the supply list neither.

6) Subjected Facilities

26 Provincial Hospitals designated under the Project have been selected from the 77 Provinces of the Philippines in accordance with the priority given under the following conditions which seem to be realistic and appropriate:

- ① Hospitals in the provinces having comparatively many beneficiaries;
- ② Hospitals located far away from the capital cities of the provinces having less beneficiaries because lower priority on assistance was given by the DOH in the past; and
- ③ Hospitals in the provinces with remarkably high birth rate.

Tables III-1 A~C below show estimated population and its increasing rate in 1985, 1987 and 1990 as well as the order of priority on the selection of beneficiary hospitals with the marks ①, ② and ③.

Population, its increasing rate and criteria of selection

Table III - I A

Region	Province	Population 1985	1987	1990	Population increasing rate	Priority on selection
I. Ilocos		3,902,587	4,055,638	4,291,931	2.00%	
	Abra	176,689	183,757	194,694	2.04	
	Benguet	408,973	431,260	465,355	2.76	
	Ilocos Norte	425,005	440,087	463,489	1.82	
	Ilocos Sur	487,987	508,274	540,543	2.16	
	La Union	508,316	532,118	568,931	2.38	
	Mt. Province	110,059	112,863	116,927	1.24	②
	Pangasinan	1,785,548	1,847,302	1,941,989	1.76	①
II. Cagayan Valley		2,520,974	2,647,809	2,844,695	2.56	
	Batanes	12,979	13,395	14,052	1.66	
	Cagayan	795,277	829,709	882,326	2.18	
	Ifugao	122,898	127,803	135,435	2.04	②
	Isabela	998,984	1,052,180	1,135,340	2.72	①③
	Kalinga-Apayao	211,061	221,849	238,513	2.60	
	Nueva Vizcaya	279,441	295,246	319,832	2.90	
	Quirino	100,338	107,633	119,209	3.76	
III. Central Luzon		5,456,140	5,725,567	6,141,618	2.52	
	Bataan	385,479	411,539	452,120	3.46	③
	Bulacan	1,265,541	1,334,696	1,441,261	2.78	
	Nueva Ecija	1,194,410	1,245,862	1,325,281	2.20	
	Pampanga	1,346,340	1,415,226	1,522,709	2.62	
	Tarlac	757,377	785,271	827,678	1.86	①
	Zambales	506,983	532,969	572,569	2.58	③
IV. Southern Tagalog		7,089,368	7,488,370	8,104,632	2.86	
	Aurora	127,969	137,174	152,049	3.76	
	Batangas	1,312,287	1,372,047	1,461,993	2.28	
	Cavite	933,553	1,003,900	1,113,454	3.86	
	Laguna	1,142,909	1,215,027	1,325,941	3.20	
	Marinduque	191,448	199,133	210,872	2.02	
	Occ. Mindoro	255,772	269,305	289,867	2.66	
	Or. Mindoro	518,615	546,107	588,959	2.72	
	Palawan	438,801	464,815	505,664	3.04	
	Quezon	1,286,791	1,346,948	1,439,679	2.38	①
	Rizal	673,066	719,413	792,048	3.54	
Romblon	208,158	214,491	224,105	1.54		

Source: Annual Report of the Philippines 1987

Population, its increasing rate and criteria of selection

Table III - 1 B

Region	Province	Population 1985	1987	1990	Population increasing rate	Priority on selection
V. Bicol		3,921,550	4,104,517	4,388,134	2.38	
	Albay	906,215	945,248	1,004,570	2.18	①②
	Camarines Norte	352,054	370,364	398,899	2.66	
	Camarines Sur	1,247,063	1,308,911	1,405,422	2.54%	
	Calanduanes	192,833	200,277	211,992	1.98	
	Masbate	656,623	685,483	729,915	2.24	
	Sorsogon	566,767	594,239	637,341	2.50	②③
VI. Western Visayas		5,092,409	5,322,782	5,672,311	2.28	
	Aklan	363,320	379,063	403,010	2.18	
	Antique	388,294	405,994	433,119	2.30	
	Capiz	558,745	585,938	627,828	2.48	②③
	Iloilo	1,595,198	1,660,767	1,759,428	2.06	
	Negros Occidental	2,186,858	2,291,022	2,448,923	2.40	①
VII. Central Visayas		4,195,015	4,362,065	4,616,038	2.00	
	Bohol	871,898	899,732	942,438	1.62	
	Cebu	2,329,803	2,426,444	2,572,826	2.08	
	Negros Oriental	917,416	957,509	1,018,480	2.20	①
	Siquijor	75,892	79,671	82,302	1.68	
VIII. Eastern Visayas		3,072,765	3,185,274	3,360,434	1.88	
	Leyte	1,428,321	1,478,953	1,556,078	1.78	
	Southern Leyte	334,272	350,971	377,776	2.60	②③
	Eastern Samar	357,623	373,825	400,053	2.38	②
	Northern Samar	429,760	451,989	487,945	2.70	
	Western Samar	522,783	529,555	538,581	0.60	
IX. Western Visayas		2,862,969	2,994,381	3,184,803	2.24	
	Basilan	229,951	241,370	258,466	2.48	
	Sulu	404,800	421,073	445,477	2.00	②
	Tawi-Tawi	217,957	227,913	243,930	2.38	②
	Zamboanga del Norte	680,465	688,006	729,898	2.10	②
	Zamboanga del Sur	1,349,810	1,416,011	1,517,026	2.48	
X Northern Mindanao		3,178,376	3,350,020	3,615,614	2.76	
	Agusan del Norte	419,937	442,313	477,160	2.72	②③
	Agusan del Sur	310,483	329,572	359,555	3.16	

Source: Annual Report of the Philippines 1987

Population, its increasing rate and criteria of selection

Table III - I.C

Region	Province	Population 1985	1987	1990	Population increasing rate	Priority on selection
XI. Southern Mindanao	Bukidnon	725,784	766,149	828,945	2.84	①③
	Camiguin	60,865	61,904	63,408	0.84	
	Misamis Occidental	433,843	451,601	478,253	2.04	②
	Misamis Oriental	807,723	855,759	931,314	3.08	
	Surigao del Norte	420,457	442,718	476,986	2.68	②③
		3,836,236	4,032,422	4,333,696	2.60%	
	Davao del Norte	817,601	853,452	907,755	2.20	
	Davao del Sur	1,315,187	1,388,733	1,501,136	2.82	①③
	Davao Oriental	386,800	406,202	436,601	2.58	
	South Cotabato	881,136	925,887	995,241	2.58	①③
	435,737	458,157	492,982	2.62	②③	
XII. Central Mindanao		2,597,734	2,733,010	2,942,259	2.66	
	Lanao del Norte	531,397	559,392	602,792	2.68	
	Lanao del Sur	445,791	465,386	495,156	2.22	
	Maguindanao	602,829	631,301	674,494	2.38	
	North Cotabato	657,513	693,716	750,119	2.82	
	Sultan Kudarat	360,192	383,217	419,692	3.30	②③

Source: Annual Report of the Philippines 1987

3-2-2 Selection of the Medical Equipment to be Supplied

Selection of the equipment to be supplied was made after careful and detailed studies of the original request taking into consideration the objectives and contents of the Project, and the National Health Program, experience and technological level, and maintenance capability of the personnel concerned as well as budgetary appropriation by the Government of the Philippines for the maintenance of the equipment to be necessiated after supply, in addition to the evaluation of the results of the Japanese Government's Grant Aid rendered in 1983. As a result, the equipment which is considered to contribute to the improvement of the health service in the rural communities was included in the supply plan.

The following are the equipment excluded from the supply plan:

Equipment excluded	Main purpose	Main reasons for exclusion
○ Curative equipment		
Deep X-Ray Unit	Treatment of tumor such as cancer	No radiographic treatment is rendered by the concerned facilities.
Dental Unit	Dental treatment	Existing equipment is old fashioned but still good for use. No emergency is recognized with regard to the need of this equipment.
○ Testing equipment		
Blood Gas Analyzer	Artificial respiration at the time of operation.	No operation using this equipment is undertaken in the Provincial hospitals. Furthermore, neither technical nor financial resources are available.
Analytical Balance	Mesurement of reagents for analytic chemistry etc.	No biochemical laboratories requiring this equipment are established at the concerned facilities.
○ Operating equipment		
Forceps, Scalpel, etc.	For surgical operations.	These are included in the general surgical operating set and small-scale operating set to be supplied.

The following are the equipment of which supply number was decreased:

Equipment	Number Requested	Number to be Supplied	Reasons for decrease
Spectrometer	26	23	Some of the concerned facilities have been using this equipment.
Ambulance	25	22	Some of the concerned facilities have been supplied with one recently.
Power Generator	26	22	As a result of the survey, some existing generators were found to be operative.
High Pressure Sterilizer	9	7	Existing equipment in two hospitals was found to be operative.

3-3 Outline of the Project

3-3-1 Executing Bodies

The following are the agencies of the Philippines concerned with the Project:

- (1) Agency in charge : Department of Health
- (2) Operations (External): Foreign Assistance Coordination Service
- (3) Operations (Internal): Office for Hospital & Facilities Services
- (4) Subjected Facilities : Provincial Hospitals (26)

The responsible agency for the implementation of the Project is Department of Health, while the Foreign Assistance Coordination Service which is under direct control of the Under Secretary of DOH and the Office for Hospital & Facilities Services take charge of formalities and equipment supply, respectively.

3-3-2 Project Component

(1) Objective of the Project

The main purpose of the Project is to supply medical equipment conforming to the following objectives in order to improve health service in the provinces concerned:

- 1) Essential equipment for rendering primary health care activities such as treatment of out-patients;
- 2) Equipment having fundamental functions such as diagnosis and operation for the secondary and tertiary health care;
- 3) Supplementary equipment to be used in place of the existing incapable equipment of the subjected facilities because of old age or breakdowns; and
- 4) All the equipment to be supplied shall be that which can be installed by the technicians of the subjected facilities.

(2) Implementation System of the Project

In implementing the Project, importance should be placed on how the equipment can be delivered to the facilities concerned as scheduled without bringing about aggravation of both function and

quality. Since this Project supplies medical equipment to 26 Provincial hospitals scattered in the islands of the Philippines, it will take at least two to three months to complete transportation, delivery and installation. It is necessary, therefore, to establish a firm system of securing smooth execution and to make up basic design. The following are the steps to be taken accordingly:

- ① Before shipment, equipment shall be classified and packed in accordance with the destinations so that it can be transported quickly to each facility concerned upon arrival in the port of Manila;
- ② Only one trader should be employed in order to ensure certainty and quickness of delivery including quick inland transportation of the equipment; and
- ③ Technician teams for installation shall be despatched from Japan to complete installation work in a short period.

(3) Operational Plan

Since the Project is planned to be implemented with the existing manpower, budget and operational system of each concerned facility, no additional manpower or budgetary appropriation shall be required.

3-3-3 Equipment to be Supplied

The following equipment is deemed to be appropriate for supply as a result of careful studies of the equipment requested, and on the conditions and scope as a subject of the Japanese Government's Grant Aid Program:

List of Equipment to be Supplied

1. Diagnosis Equipment
 - Diagnostic X-Ray Equipment
 - Image Intensifying TV Monitor

X-Ray Room Air conditioner
Automatic X-Ray Film Processor
X-Ray Film Processing Tank
X-Ray Accessories Set
Ultrasound Scanner
Defibrillator
Electrocardiograph
Broncho Fiberscope
Gastrointestinal Fiberscope
Proctosigmoidoscope
Cystoscopy Apparatus
Endoscopic Cabinet
Diagnostic Set
Sphygmomanometer, Stand-type
Sphygmomanometer, Table-Top
Stethoscope

2. Operating Room Equipment

Major Operating Light
Minor Operating Light
Mobile Operating Light
Major Operating Table
Orthopedic Surgery Table
Gynecological Surgery Table
Minor Operating Table
Major Operating Room Air conditioner
Gynecology Operating Room Air conditioner
Minor O.R. Air conditioner
Anesthesia Apparatus
Electro-Surgical Unit
Mobile Suction Unit
Portable Suction Unit
High Speed Sterilizer
Endotracheal Set

- Manual Resuscitator Set
- Major Surgical Set
- Minor Surgery Set

- 3. Intensive Care Unit Equipment
 - Bedside Patient Monitor
 - I.C.U. Bed
 - Defibrillator
 - Critical Care Ventilator
 - Portable Suction Unit
 - Manual Resuscitator
 - Air Conditioner for ICU

- 4. Obstetrics and Gynecology Equipment
 - Infant Incubator
 - Phototherapy Unit
 - Jacson Rees Resusci Bag
 - Oxygen Tent
 - Clinical Examination Table
 - Obstetric Delivery Table

- 5. Ward Equipment
 - Examination Lamp
 - Portable Suction Unit
 - Orthopedic Bed
 - Electrocardiograph
 - Instrument Sterilizer

- 6. Laboratory Equipment
 - Spectrophotometer
 - Laboratory Autoclave
 - Blood Bank Refrigerator
 - Laboratory Refrigerator
 - Water Bath
 - Laboratory Incubator

Differential Leucocyte Counter
Centrifuge
Binocular Microscope
Pipette Washer
Microtome
Auto Tissue Processor

7. Miscellaneous

Ambulance
Power Generator
High Pressure Sterilizer

CHAPTER IV BASIC DESIGN

CHAPTER IV

BASIC DESIGN

4-1 Basic Design Policy

A present problem concerning health service in rural areas of the Philippines is the lowering of services in both quantity and quality caused by aging of medical equipment owned by the medical facilities. In the Philippines prevailing diseases are those of the respiratory apparatus, digestive apparatus and cardiovascular apparatus, and injuries caused by traffic accidents or violence. In order to render effective curative services against these diseases and injuries, provision of medical equipment essential not only to the secondary and tertiary health care but also to the primary health care is indispensable. Taking in mind the above mentioned facts in addition to the objectives of the Project, budgetary and operational systems and effectiveness of the Project, the Basic Design Study Team has formulated the following basic design policy:

- (1) Basic design shall be formulated along with the policies of the National Health Programme and Regional Health Programme being pushed forward by the Government of the Philippines.
- (2) Basic design shall be formulated within the framework of the present health budget of the Government.
- (3) Basic design shall be formulated to ensure impartial distribution of the equipment so that the inhabitants in the islands area can also be benefited.
- (4) Basic design shall be formulated on the basis of prevailing diseases so that effectiveness of the Project will quickly be realized.
- (5) Another consideration shall be directed to the betterment of the birth

rate, morbidity rate and death rate in order to increase the population of the productive group and promote economic activities for realization of the stability of public life in the Philippines.

4-2 Basic Design Conditions

Basic design conditions based on the aforementioned policy are as follows:

1) Conditions with Respect to Demanding Aspect

- ① Emphasis shall be placed on the distribution of basic medical equipment essential to the improvement of the primary health care in order to upgrade health activities in rural communities.
- ② Equipment for the secondary and tertiary health care necessary for promoting more effective primary health care activities.
- ③ Taking into account the scale, manpower, service area, patients and budget of individual facility, provision of equipment adequate to each facility shall be planned.
- ④ Taking into account the relationship between existing equipment and equipment to be supplied, basic design of appropriate quality and quantity shall be formulated.
- ⑤ Equipment to be supplied shall be that whose maintenance and provision of consumables can fully be taken care of by the local agents or the manufacturers concerned.
- ⑥ An appropriate amount (7~15% of the equipment cost) of spare parts, replacement parts and consumables shall be attached to the equipment at the time of delivery in order to ensure smooth operation in the future of the equipment.

- ⑦ Equipment not requiring much additional budgetary appropriation for operation and maintenance shall be selected.

2) Conditions with Respect to Technical Aspect

- ① The equipment shall be easily operated with the present technical level of personnel concerned.
- ② The equipment shall be durable with little possibility of breaking down, maintenance of which is easily undertaken by existing maintenance system.
- ③ Doctors, technicians and personnel in charge of the facilities concerned shall be invited to the training course and orientation to be held at the facility in Manila or in its suburb in order to let them familiarize with operation and maintenance of the equipment supplied.
- ④ In view of instability of power supply in the Philippines, power stabilizer shall be attached to the equipment with high electric circuit in order to avoid break down caused by irregular voltage fluctuations.
- ⑤ In view of tropical climate of the Philippines, the equipment with the resistance to humidity, heat and dust shall be selected.
- ⑥ Many of sophisticated equipment being used in tropical zone get out of order due to the rust caused by humidity and dust. In order to prevent such equipment as X-Ray unit and cardiographic monitor from the breaking down, air-conditioner shall also be provided to ensure steady and perpetual operations.
- ⑦ In order to confirm perfect implementation of the work including safe delivery and satisfactorily installation of the equipment, the consultant shall be dispatched to all the subjected facilities provided

that the local consultant shall be dispatched to the facilities located outside Central and South Luzon.

4-3 Study of Basic Design Conditions

Selection of the equipment necessary for the implementation of the Project was undertaken based on the basic design conditions and main functional purposes of the equipment. The marks ① ~ ⑦ in the following Table IV-A~D indicate applicable demanding and technical conditions respectively.

Main Use and Selecting Conditions

Table IV-1A

	Demanding Condition	Technical Condition	Main Use
1. Diagnosis Equipment			
1-1 Diagnostic X-Ray Equipment	②⑤⑥	①③⑥⑦	To take photographs of the stomach and bowels using a contrast medium; to diagnose TB, fractures and general diseases.
1-2 Image Intensifying TV Monitor	②③⑤⑦	①③⑥⑦	For fluoroscopy.
1-3 X-Ray Room Air conditioner	②④⑦	①④⑤	For protection of X-Ray unit.
1-4 Automatic X-Ray Film Processor	②③⑤⑥	①③⑤⑦	For development of X-Ray films in large quantity.
1-5 X-Ray Film Processing Tank	②③④⑥	①②③⑦	For development of X-Ray films in small quantity.
1-6 X-Ray Accessories Set	②③⑥⑦	①②③⑦	Attachments to X-Ray unit.
1-7 Ultrasound Scanner	②③⑥⑦	①③④⑥⑦	For diagnosis of viscus including heart and uterus.
1-8 Defibrillator	②③⑤⑥	①③④⑥⑦	For treatment of heart arrhythmia and defibrillation.
1-9 Electrocardiograph	①②⑤⑥	①③⑥⑦	For diagnosis of heart diseases such as arrhythmia
1-10 Broncho Fiberscope	②④⑦	①③⑦	For diagnosis of chest and removal of alien substances
1-11 Gastrointestinal Fiberscope	②④⑦	①③⑦	For diagnosis of esophagus and stomach.
1-12 Proctosigmoidoscope	②④⑦	①③⑦	For diagnosis of anus and colon.
1-13 Cystoscopy Apparatus	②④⑦	①②③⑦	For diagnosis of urinary organs.
1-14 Endoscopic Cabinet	②④⑦	①②③⑦	For keeping a gastrointestinal fiberscope.
1-15 Diagnostic Set	①④⑦	①②③	For diagnosis of eyegrounds, ear, nose and throat.
1-16 Sphygmomanometer, Stand-type	①④⑦	①②③	For general wards and surgical use.
1-17 Sphygmomanometer, Table-Top	①④⑦	①②③	Ditto.

Table IV-1B

	Demanding Condition	Technical Condition	Main Use
1-18 Stethoscope	①④⑦	①②③	Ditto.
2. Operating Room Equipment			
2-1 Major Operating Light	①②④⑥⑦	②④⑦	For the main surgical operating room.
2-2 Minor Operating Light	①②④⑥⑦	②④⑦	For the minor operating room.
2-3 Mobile Operating Light	①②④⑥⑦	②④	For emergency surgical operation.
2-4 Major Operating Table	①②④⑦	①②⑤	For surgical operation in general.
2-5 Orthopedic Surgery Table	①②④⑦	①②⑤	For surgical operation of lower limbs.
2-6 Gynecological Surgery Table	①②③⑦	①②⑤⑦	For abnormal delivery and sterilization.
2-7 Minor Operating Table	①③⑦	①②⑤	For emergency surgical operation.
2-8 Major O.R. Air conditioner	②④⑦	①④⑤	For protection of equipment in the major operating room.
2-9 Gyn. O.R. Air conditioner	②④⑦	①④⑤	For protection of equipment in the gynecological operating room.
2-10 Minor O.R. Air conditioner	②④⑦	①④⑤	For protection of equipment in the minor operating room.
2-11 Anesthesia Apparatus	①②⑤⑥	①②③⑤⑦	For surgical operation.
2-12 Electro-Surgical Unit	①②⑤⑥⑦	①②③④⑤	For surgical operation.
2-13 Mobile Suction Unit	①②⑤⑦	②⑤	For suction of filths in the respiratory apparatus during operation.
2-14 Portable Suction Unit	①②⑤⑦	②⑤	For suction of filths and blood after surgical and gynecological operation.
2-15 High Speed Sterilizer	①③④⑥	①②⑤	For sterility of equipment at the time of emergency operation.
2-16 Endotracheal Set	①⑥⑦	②	For preparation for anesthetization.

Table IV-1C

	Demanding Condition	Technical Condition	Main Use
2-17 Manual Resuscitator Set	①⑥⑦	②	For artificial respiration.
2-18 Major Surgical Set	①②③⑦	①⑤	For general surgical operation.
2-19 Minor Surgery Set	①⑥⑦	①⑤	For surgical operation of outpatients.
3. Intensive Care Unit Equipment			
3-1 Bedside Patient Monitor	②③⑤⑥	①④⑤⑦	For monitoring of electro-cardiographic waves of patients.
3-2 I.C.U. Bed	②③⑤⑥⑦	②④⑤⑦	For fixing position of patients.
3-3 Defibrillator	②③⑤⑥	①③④⑥⑦	For treatment of heart arrhythmia and defibrillation.
3-4 Critical Care Ventilator	②③⑤⑥⑦	①③④⑥⑦	For assisting, coordinating and recovering of respiration.
3-5 Portable Suction Unit	①②⑤⑦	②⑤	Suction of filths from the body.
3-6 Manual Resuscitator	①⑥⑦	②	For saving patients from dyspnea.
3-7 Air Conditioner for ICU	②④⑦	①④⑤	Protection of equipment in ICU.
4. OB & GNY Equipment			
4-1 Infant Incubator	①②⑦	①②⑤	Protection of pronatis.
4-2 Phototherapy Unit	①②④⑥⑦	①②⑤	For treatment of chloplania of new born children.
4-3 Jacson Rees Resusci Bag	①④⑦	①②	For saving new born children from dyspnea.
4-4 Oxygen Tent	①⑦	②	Ditto.
4-5 Clinical Examination Table	①②⑥⑦	②⑤	For diagnosis of OB and GNY.
4-6 Obstetric Delivery Table	①③⑦	②⑤	For delivesy.
5. Ward Equipment			
5-1 Examination Lamp	①⑤⑥	②⑤	For diagnosis in wards and out-patients department.
5-2 Portable Suction Unit	①②⑤⑦	②⑤	Suction of secreta and filth from patient's body.

Table W-1D

	Demanding Condition	Technical Condition	Main Use
5-3 Orthopedic Bed	①②③⑦	②⑤	For treatment of complicated fractures etc.
5-4 Electrocardiograph	①②⑤⑥	①③⑥⑦	For diagnosis of heart diseases of inpatients and outpatients.
5-5 Instrument Sterilizer		②⑤	For disinfection of equipment.
6. Laboratory Equipment			
6-1 Spectrophotometer	①②③⑤⑥	①②③④	For blood serum analysis.
6-2 Laboratory Autoclave	①②④⑤⑥	①②⑤	For disinfection of equipment.
6-3 Blood Bank Refrigerator	①②④⑤⑥	②④	For preservation of blood.
6-4 Laboratory Refrigerator	①②④⑤⑥	②④	For preservation of vaccines and reagents.
6-5 Water Bath	①④⑤⑥	②⑤	For bacterium tests in water.
6-6 Laboratory Incubator	①④⑤⑥	②⑤	For bacterium tests.
6-7 Differential Leucocyte Counter	①④⑤⑥⑦	②	For counting red or white blood cells
6-8 Centrifuge	①④⑤⑥⑦	②⑤	For dialysis test of serum.
6-9 Binocular Microscope	①④⑤⑥⑦	②④⑤	For testing of malaria, TB, etc.
6-10 Pipette Washer	①⑦	②	For washing the pipette tester.
6-11 Microtome	①⑤⑥⑦	②⑤	For making slices for microscope testing.
6-12 Auto Tissue Processor	①③⑤⑥	①②	For making samples for pathological testing microscope.
7. Miscellaneous			
7-1 Ambulance	①②③⑤⑥	②⑤	For transportation of emergency patients.
7-2 Power Generator	①③⑤⑥	②⑤	To be used at the time of power cut.
7-3 High Pressure Sterilizer	①③⑤⑥	②⑤	For disinfection of linen, equipment, etc.

4-4 Equipment Supply Plan

4-4-1 Type, Specification and Quantity

The appropriate scale of equipment to be supplied based on the above-mentioned basic design policy and conditions will be 70 items of which name and main specifications are described in the table in the following pages.

1. Diagnosis Equipment

	<u>D E S C R I P T I O N</u>
1-1 Diagnostic X-Ray Equipment	500mA, 150KV, 2-tube system, with fluoroscopy
1-2 Image Intensifying TV Monitor	9-inch Image Intensifying Tube, 12-17-inch monitor
1-3 X-Ray Room Air conditioner	Window Type 1500 K cal.
1-4 Automatic X-Ray Film Processor	180-second developing with a dryer,
1-5 X-Ray Film Processing Tank	30-liter, three-tank
1-6 X-Ray Accessories Set	Cassette, Grid, Intensifying Screen, Goggle
1-7 Ultrasound Scanner	Linear and Sector Type with a mobile cart
1-8 Defibrillator	with ECG, mounted on a mobile cart
1-9 Electrocardiograph	1-channel, AC/DC Operation
1-10 Broncho Fiberscope	with a light source,
1-11 Gastrointestinal Fiberscope	with a light source,
1-12 Proctosigmoidoscope	with a light source,
1-13 Cystoscopy Apparatus	with a light source,
1-14 Endoscopic Cabinet	for two or three endoscopes
1-15 Diagnostic Set	Ophthalmometer, Otoscope, Layngoscope, etc.
1-16 Sphygmomanometer, Stand-type	Mercurial Floor model, with casters
1-17 Sphygmomanometer, Table-Top	Mercurial compact model
1-18 Stethoscope	Dual type as JMC 8-20003

2 Operating Room Equipment

2-1 Major Operating Light	Ceiling Support, 10-12 bulbs, about 100,000 lux.
2-2 Minor Operating Light	Ceiling Support, 2-4 bulbs, about 50,000 lux.
2-3 Mobile Operating Light	Auxiliary Floor Stand Type, 4-6 bulb, about 60,000 L.
2-4 Major Operating Table	Universal, Manual Control and Oil-hydraulic
2-5 Orthopedic Surgery Table	Manual Control Oil-hydraulic, with traction apparatus

2-6	Gynecological Surgery Table	Abdominal/Vaginal Operations, Manual Control.
2-7	Minor Operating Table	OPD use, simple and fixed type
2-8	Major O.R. Air conditioner	Window Type, 1,500Kcal
2-9	Gyn. O.R. Air conditioner	Window Type "
2-10	Minor O.R. Air conditioner	Window Type "
2-11	Anesthesia Apparatus	O2 and N2O Gas type, mounted on castered base
2-12	Electro-Surgical Unit	Monopolar/Bipolar function, cutting & coagulation
2-13	Mobile Suction Unit	Two bottle, mounted on castered cabinet
2-14	Portable Suction Unit	Single bottle,
2-15	High Speed Sterilizer	Approx. Capacity 0.45 M3, Electrical type
2-16	Endotracheal Set	Consisting of Layngoscope, Endtracheal tube w/ cuff
2-17	Manual Resuscitator Set	For Pediatric, Infant and Adoult
2-18	Major Surgical Set	JMC 8-22692 (45 Items)
2-19	Minor Surgery Set	JMC 8-22693 (14 items)
3. Intensive Care Unit Equipment		
3-1	Bedside Patient Monitor	2-Channel with ECG Recorder
3-2	I.C.U. Bed	Gatch Bed with two crank operation for positioning
3-3	Defibrillator	Portable with ECG Recorder, mounted on castered base
3-4	Critical Care Ventilator	Portable , Electrically Operated
3-5	Portable Suction Unit	Single Bottle Type
3-6	Manual Resuscitator	For Pediatric and Adult use
3-7	Air Conditioner for ICU	Window Type, 1,500Kcal
4. OB & GNY Equipment		
4-1	Infant Incubator	Manual Thermo-Control Type,
4-2	Phototherapy Unit	4-6 Fulo. Bulbs, tilted to 45 degree
4-3	Jacson Rees Resusci Bag	Complete with some connector with Anesthesia machine
4-4	Oxygen Tent	Head box, for Infant use

4-5 Clinical Examination Table	Tilting type with manual operation
4-6 Obstetric Delivery Table	Semi-Tilting position, Manual Type
5. Ward Equipment	
5-1 Examination Lamp	Auxiliary floor stand type, Single Light Approx. 30,000 Lux.
5-2 Portable Suction Unit	Single Bottle
5-3 Orthopedic Bed	With traction devise
5-4 Electrocardiograph	1-channel, AC/DC operation
5-5 Instrument Sterilizer	Electric Boiling, Desk Top type
6. Laboratory Equipment	
6-1 Spectrophotometer	VIS wavelength,
6-2 Laboratory Autoclave	Vertical Type, 30dia. x 50cm Approx.
6-3 Blood Bank Refrigerator	Full-View, Outside 80X80X200cm Approx. or smaller
6-4 Laboratory Refrigerator	Approx. 200 Litter, made of stainless steel
6-5 Water Bath	For 150-200 test tubes
6-6 Laboratory Incubator	Table Top Type, Approx 40X40X50cm, with timer
6-7 Differential Leucocyte Counter	Manual type, B Numbers
6-8 Centrifuge	High Speed and Table Top Type, w/ hematocrit adapter
6-9 Binocular Microscop	40-1500X, with electric illuminator
6-10 Pipette Washer	Non-Electric type
6-11 Microtome	Rotary Type, 1-50 Mic.
6-12 Auto Tissue Processor	Approx. 100 Slide. With Timer.
7. Miscellaneous	
7-1 Ambulance	Approx. 2500cc, 4 Cylinder.
7-2 Power Generator	50-60 KVA Diesel Engine
7-3 High Pressure Sterilizer	Electric Type, 0.6M3 Approx.

4-4-2 Equipment to be Supplied to the Individual Facilities

Details of the equipment to be supplied to the individual facilities are shown in the following Tables, which are attached to the end of this Report:

Region

I	1. Gov. Teofilo Sison Memorial Hospital	Table 5A ~ C
	2. Bontoc General Hospital	Table 6A ~ C
II	1. Ifugao General Hospital	Table 7A ~ C
	2. Isabela Provincial Hospital	Table 8A ~ C
III	1. Bataan Provincial Hospital	Table 9A ~ C
	2. Pres. Ramon Magsaysay Memorial Hospital	Table 10A ~ C
	3. Tarlac Provincial Hospital	Table 11A ~ C
IV	1. Quezon Memorial Hospital	Table 12A ~ C
V	1. Albay Provincial Hospital	Table 13A ~ C
	2. Sorsogon Provincial Hospital	Table 14A ~ C
VI	1. Roxas Memorial General Hospital	Table 15A ~ C
	2. Corazon Locsin Montelibano Memorial Hospital	Table 16A ~ C
VII	1. Negros Oriental Hospital	Table 17A ~ C
VIII	1. Southern Leyte Provincial Hospital	Table 18A ~ C
	2. Eastern Samar Provincial Hospital	Table 19A ~ C
IX	1. Sulu Hospital	Table 20A ~ C
	2. Zamboanga del Norte Provincial Hospital	Table 21A ~ C
	3. Datu Halun Sakilan Memorial Hospital	Table 22A ~ C
X	1. Butuan Hospital	Table 23A ~ C
	2. Bukidnon Hospital	Table 24A ~ C
	3. Misamis Occidental Provincial Hospital	Table 25A ~ C
	4. Surigao del Norte Provincial Hospital	Table 26A ~ C
XI	1. Davao del Sur Provincial Hospital	Table 27A ~ C
	2. Surigao del Sur Provincial Hospital	Table 28A ~ C
	3. South Cotabato Provincial Hospital	Table 29A ~ C
XII	1. Sultan Kudarat Provincial Hospital	Table 30A ~ C

In addition to Tables A~C, a distribution plan of the equipment is shown in the following Table IV-2A~B.

MASTER EQUIPMENT LIST

Table IV - 2A

Region	I		II		III			IV		V		VI		VII		IX			X				XI			Tot				
	Code No	1	2	1	2	1	2	3	1	1	2	1	2	1	1	2	1	2	3	1	2	3	4	1	2		3	1		
1. Diagnosis Equipment																														
1-1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	24	
1-2					1		1	1				1	1															5		
1-3		1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	25	
1-4								1			1																	2		
1-5		1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	25	
1-6		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	26	
1-7		1		1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	21	
1-8		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	26	
1-9		2	1	1	1	2	1	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	34	
1-10												1																1		
1-11								1				1																2		
1-12								1				1																2		
1-13								1				1																2		
1-14								1				1																2		
1-15		2	2	2	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	54	
1-16		2	2	2	2	2	2	2	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	54	
1-17		7	3	3	3	7	5	7	7	5	3	3	12	6	3	2	2	2	2	2	2	2	2	3	3	2	3	2	101	
1-18		7	3	3	3	7	5	7	7	5	3	3	12	6	3	2	2	2	2	2	2	2	2	3	3	2	3	2	101	
2. Operating Room Equipment																														
2-1		2	1	1	1	1	1	1	1	1	1	2	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	25	
2-2			1	1		1		1	1	1	1		1									1			1			10		
2-3		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	26	
2-4		2	1	1		1		1	1	1	1	1	1	1	1	1		1	1			1	1	1	1	1	1	21		
2-5				1	1	1	1	1	1	1		1				1						1			1	1	1	12		
2-6								1				1																2		
2-7		1	1		1	1	1	1	1	1		1																8		
2-8		2	1		1		1	1	1	1	1	1	1		1	1	1	1		1	1	1	1	1	1	1	1	19		
2-9		1		1	1	1						2										1						8		
2-10		1			1			1	1																			4		
2-11		1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	26	
2-12		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	25	
2-13		2	1	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	1	49
2-14		3	2	2	2	4	2	3	3	2	2	2	4	2	2	2	3	2	2	2	2	2	3	2	2	2	3	2	62	
2-15		1		1	1	1	1	1	1	1		1	1	1	1							1			1	1	1	1	17	
2-16		1	1	1	1	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	28	
2-17		2	2	1	2	2	2	2	2	2	2	3	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	40	
2-18		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	26	
2-19		1	1	1	1	1	1	2	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	29	

MASTER EQUIPMENT LIST

Table IV - 2B

Region Code No	I		II		III			IV		V		VI		VII		VIII		IX			X				XI			XII	Tot	
	1	2	1	2	1	2	3	1	1	2	1	2	1	1	2	1	2	3	1	2	3	4	1	2	3	1				
3. Intensive Care Unit Equipment																														
3-1 Bedside Patient Monitor	2		2	2	2	2	2	2	2	2	2	1	4	2	2	1	1	2		2	2	1	1	2	1	1			41	
3-2 I.C.U. Bed	2		2	2	2	2	2	2	2	2	2	1	4	2	2	1	1	2		2	2	1	1	2	1	1			41	
3-3 Defibrillator	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	27	
3-4 Critical Care Ventilator														1														1		
3-5 Portable Suction Unit	2	1	1	1	1	1	2	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	31	
3-6 Manual Resuscitator	2	1	1	1	1	1	2	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	31	
3-7 Air Conditioner for ICU	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	25
4. OB & GYN Equipment																														
4-1 Infant Incubator	1		1	1	1	1		1	1	1	1	2			1	1		1	1	1	1	1	1	1	1	1	1	1	21	
4-2 Phototherapy Unit	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	27	
4-3 Jaeson Rees Resusci Bag	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	26	
4-4 Oxygen Tent	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	27	
4-5 Clinical Examination Table	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	26	
4-6 Obstetric Delivery Table		1	1		1	1	1		1	1	1	2	1	1				1		1	1	1	1	1	1	1	1	1	19	
5. Ward Equipment																														
5-1 Examination Lamp	5	2	2	2	5	3	5	5	3	2	2	10	2	2	2	2	2	2	1	2	2	2	3	2	1	2	1	1	72	
5-2 Portable Suction Unit	2	1	1	1	2	2	2	2	2	1	1	4	1	1	1	1	1	1	1	1	1	1	2	2	1	2		37		
5-3 Orthopedic Bed	2	1	1	1	2	2	2	2	2	1	1	4	2					2		2						2		30		
5-4 Electrocardiograph	2	1	1	1	2	1	2	2	2	1	1	4	2	1	1	1	1	1	1	2	1	1	1	1	1	2	1	37		
5-5 Instrument Sterilizer	4	2	2	2	4	3	4	4	3	2	2	8	4	2	2	3	3	1	4	4	3	3	2	3	4	3	3	81		
6. Laboratory Equipment																														
6-1 Spectrophotometer	1	1	1		1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	23	
6-2 Laboratory Autoclave	1		1		1	1	1	1		1	1	1	1					1	1							1	1	14		
6-3 Blood Bank Refrigerator	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	26	
6-4 Laboratory Refrigerator	1							1				1	1															4		
6-5 Water Bath	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	23	
6-6 Laboratory Incubator	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	23	
6-7 Differential Leucocyte Counter	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	27	
6-8 Centrifuge	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	26	
6-9 Binocular Microscope	3	2	2	2	2	2	2	3	3	2	2	4	3	2	2	2	1	2	2	2	2	2	2	2	2	2	2	1	56	
6-10 Pipette Washer	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	27	
6-11 Microtome	1							1	1			1	1															5		
6-12 Auto Tissue Processor	1							1	1			1	1															5		
7. Miscellaneous																														
7-1 Ambulance	1	1	1	1	1	1		1	1	1		1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	22	
7-2 Power Generator		1			1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	19	
7-3 High Pressure Sterilizer					1	1		1	1			1	1	1															7	

CHAPTER V PROJECT IMPLEMENTATION AND MANAGEMENT

CHAPTER V

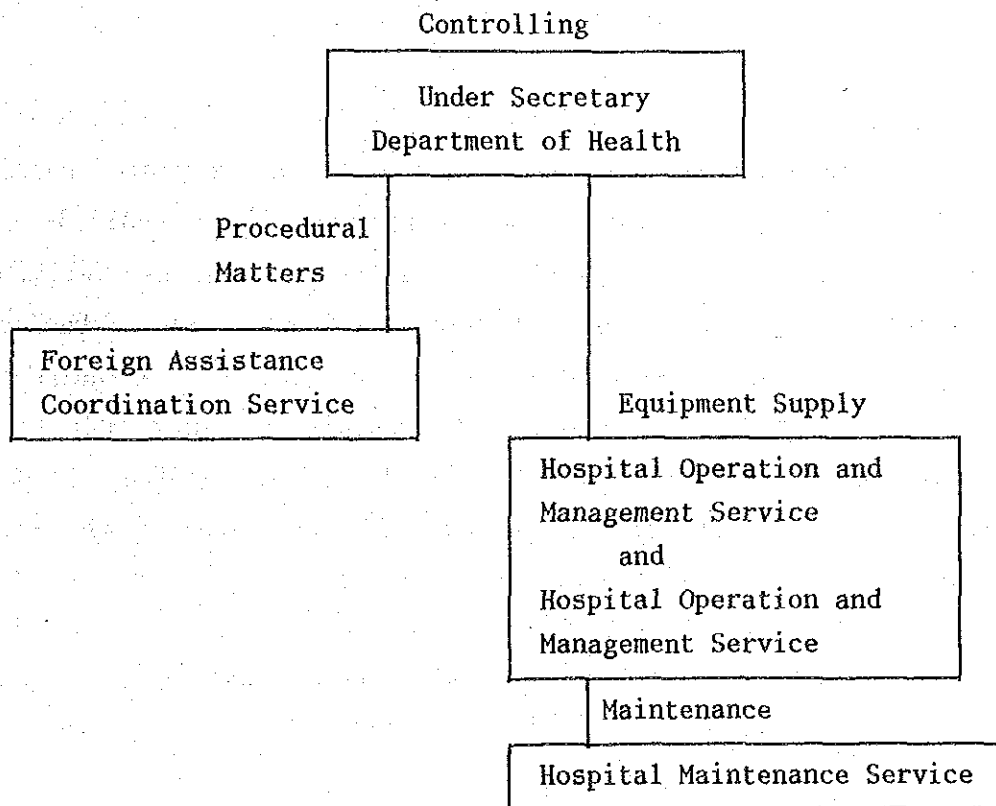
PROJECT IMPLEMENTATION

5-1 Project Implementation System

This Project is implemented jointly by the Implementation Body of the Government of the Philippines, the Consultant and the Contractor. Works to be carried out by each party mentioned above are outlined as follows:

(1) Implementation Body

Implementation body of this Project is the Department of Health, Government of the Philippines. Under Secretary of the Department, who was the representative of the Philippine Government at the time of basic design study, will act as main official in charge with the assistance of the following members:



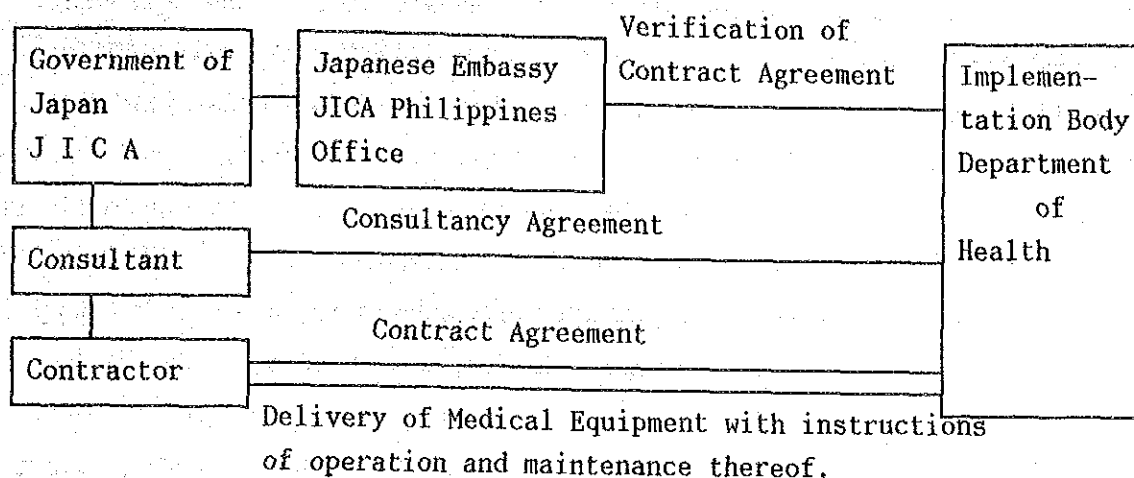
(2) Consultant

In case of implementation of the Project under the Japanese Government's Grant Aid Program, the Japanese Consultant will, in conformity with the consultancy agreement to be concluded on the basis of the procedures of the Japanese Government's Grant Aid System between the implementation body of the Philippine Government and the Consultant, will render the following consultancy services:

- Detailed Design — To execute a detailed design study and to prepare specifications of medical equipment and other documents of technical nature.
- Tendering — To assist selection of Contractor and to cooperate in concluding contract agreement.
- Procurement — To supervise procurement of medical equipment and to inspect the equipment prior to shipment thereof.
- Installation — To inspect the medical equipment delivered to the facilities concerned and to supervise installation works thereof.

(3) Contractor

Contractor shall be responsible for the delivery and installation of the medical equipment and for the training of personnel concerned on the operation of the equipment. Since the 26 subjected facilities of the Project are vastly scattered over the islands areas of the country, substantial duration of time for transportation of the equipment will be needed. It is necessary for the Consultant, therefore, to ensure smooth implementation of the Project under close cooperations with the Contractor. The implementation mechanism is shown in the following chart:



5-2 Undertakings of Both Governments

Undertakings of Governments of Japan and the Philippines are defined as follows:

(1) Undertakings of the Government of Japan

To deliver medical equipment to 26 subjected provincial hospitals, install thereof and train the Philippine technicians concerned.

They can be summarized as follows:

- (a) The equipment to be supplied by the Government of Japan is indicated in 4-4-1 and 4-4-2 above.
- (b) All the costs of sea and land transportation of the equipment to the destinations.
- (c) Costs for installation of the equipment.
- (d) Costs for training of the Philippine personnel concerned on initial test, operation, commissioning and maintenance of the equipment at the facility in Manila or nearby.

(2) Undertakings of the Government of the Philippines

- (a) Provision of space and facilities for the installation of the

equipment.

- (b) Provision of utilities such as electricity, gas, water, drainage etc. which are required for the installation of the equipment.
- (c) Provision of storage facilities so that the equipment can be safely stored until the installation works be undertaken.
- (d) Assurance of smooth proceedings of unloading and customs clearances in the Philippines as well as prompt land transportation to the site of the equipment.
- (e) Exemption from taxes, duties for the equipment to be supplied under the Japanese Grant Aid Program as well as exemption from income taxes and duties on personal items to be brought into the Philippines in the case of Japanese nationals providing services under the Project.
- (f) Bearing of charges for the Banking Agreement (B/A) and Authorization to Pay (A/P).
- (g) Provision of licenses, approval and other authorizations required for the execution of the Project.
- (h) Bearing of the other costs than the grant aid which is required for the supply of equipment under the Project.
- (i) Bearing of the costs for proper and effective operation and maintenance of the equipment to be supplied under the Project.

5-3 Implementation Programme

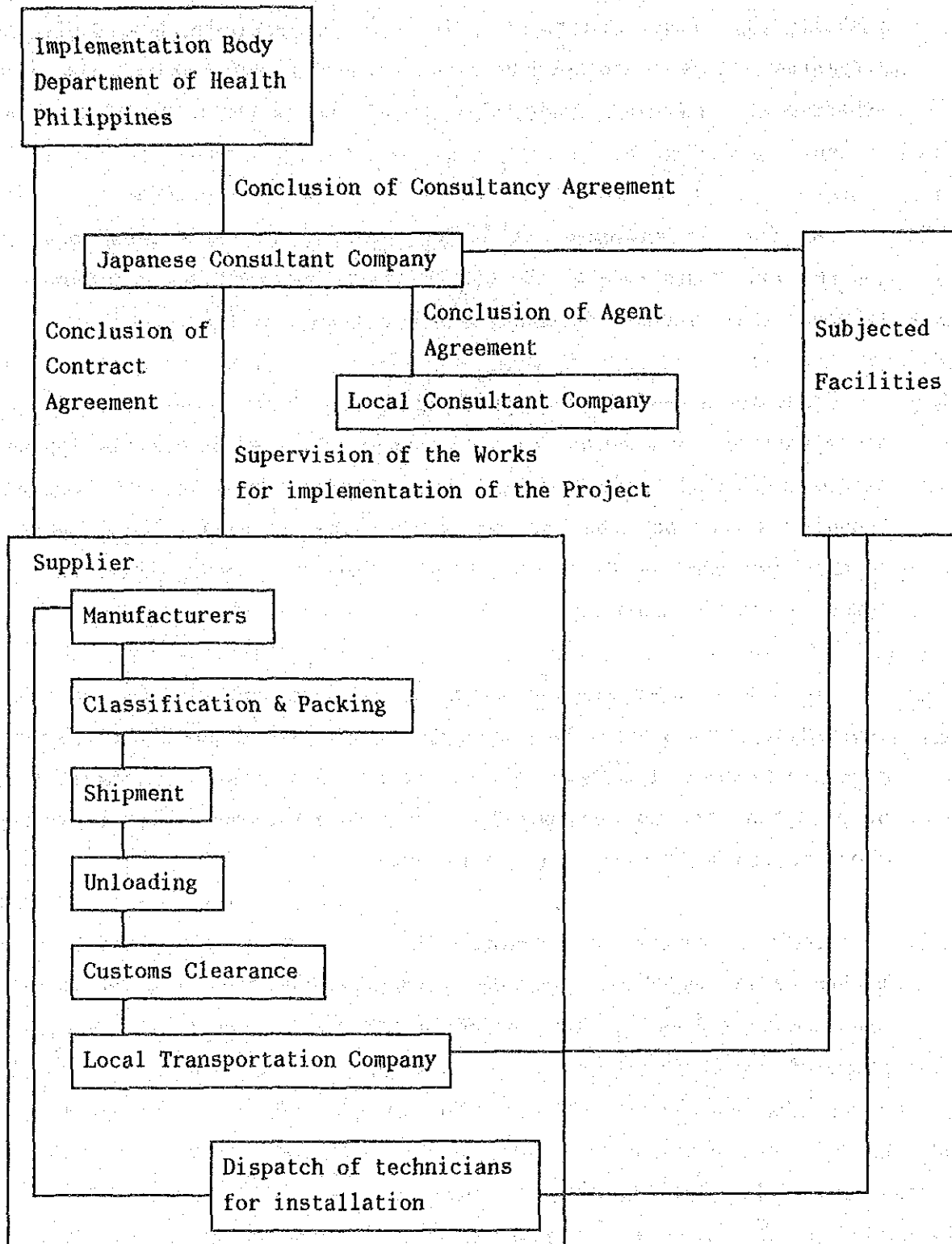
This Project shall be implemented under the following work program.

- (1) To undertake sufficient consultations among the pertinent authorities of both Governments of the Philippines and Japan as well as the Consultant and the Contractor at the various stages of the conclusion of E/N, Tendering, selection of the Contractor, manufacturing schedule of the equipment, inspection at the time of shipment as well as delivery and the payment of the grant money so that the Project shall be implemented smoothly. These consultations include formalities to be taken.

- (2) In view of the fact that the subjected facilities are hospitals, it is difficult to suspend their routine works for the delivery and installation of the equipment. In order to avoid such a difficult situation, close consultations among personnel concerned on the work schedule etc. should be undertaken beforehand at the stage of detailed design.
- (3) As for the equipment to be procured in Japan, careful quality control and inspections on the equipment at the times of production and shipment thereof shall be undertaken beforehand in Japan.
- (4) Installation of the equipment so required shall be undertaken by the agents of the manufacturers concerned stationed in the Philippines at the subjected facilities with few exceptions. In order to prevent trouble which may be arosen after installation, the Japanese technicians shall be dispatched to the facilities in mid-south part of Luzon Island for training.
- (5) In taking over the equipment it is necessary for the Japanese Consultant to make sure the proper implementation of the Project by way of entrusting the local consultant firm for inspection and confirmation of acceptance of the equipment of the subjected facilities excluding those in mid-south area of Luzon Islands.
- (6) Training course or orientation shall be held at the facility in Manila or in its suburb for local personnel concerned in order to give them full knowledge on the operation and maintenance of the equipment supplied.

Flow-Chart of the Implementation System is as follows:

Flow-Chart of the Implementation System



5-4 Procurement of the Equipment

Procurement of the equipment shall be made in accordance with the following policies:

- (1) In view of the market situation in the Philippines, many of the equipment shall be procured in Japan. However, such equipment shall be the products of the manufacturers having their branch offices or agents in the Philippines which can render proper after sales care in addition to installation thereof.
- (2) Such equipment as air-conditioner etc. available in the Philippines shall be procured locally as much as possible taking into consideration the specifications, costs and maintenance capabilities of the equipment.
- (3) Local manpower (labor power and technician) shall be used for the delivery to, installation and commissioning at the subjected facilities except those in mid-south part of Luzon Island.
- (4) As for the equipment to be procured in Japan, since it is estimated to take approximately seven to eight weeks, namely two weeks respectively for sea transportation and customs clearance at the port of arrival, and another three to four weeks for inland transportation of the equipment, the procurement schedule of the equipment should be planned with taking full considerations the time factor mentioned above.

5-5 Implementation Schedule

Implementation schedule of this Project is prepared based on the procedure of the Japanese Government's Grant Aid System and on condition that both related agencies of Japan and the Philippines shall proceed respectively without delay to the necessary works for documentary procedures as well as equipment procurement.

Implementation schedule of the Project shall be carried out in accordance with the following three steps starting from the date of conclusion of the Exchange of Notes between the Governments concerned:

- ① Detailed Design : Required for 2.5 months
 - Detailed design after verification of consultancy agreement:
Approximately 1.7 months
 - Preparation of the Tender Documents and verification thereof:
Approximately 0.8 months

- ② Tendering: Required for 1.5 months
 - From public notice to tender opening: Approximately 1 month
 - For evaluation: Approximately 0.5 month

- ③ Implementation of works: Required for 7.8 months
 - Manufacturing of the equipment after conclusion of the Contract Agreement: Approximately 4.0 months
 - Customs clearance, sea and inland transportation of the equipment:
Approximately 2.0 months
 - Installation and orientation by the Contractor and inspection by the Consultant: Approximately 1.8 months

Accordingly, this Project shall be completed in about 12 months including the time necessary for verification by the Government of Japan of the Consultancy Agreement. Work Programme is shown in Table V-1 in the next page.

WORK PROGRAMME

Table V-1

MONTH	0	1	2	3	4	5	6	7	8	9	10	11	12
		DETAILED DESIGN		TENDERING		PROJECT IMPLEMENTATION							
JAPANESE GOVERNMENT	VERIFICATION												
PHILIPPINE GOVERNMENT	E/N			VERIFICATION			CONTRACT AGREEMENT						ACCEPTANCE
CONSULTANT		CONSULTANCY AGREEMENT	DETAILED DESIGN	PUBLIC NOTICE			EVALUATION	SUPERVISION					INSPECTION
CONTRACTOR		PREPARATION OF TENDER DOCUMENTS			TENDERING		CONTRACT	MANUFACTURE & PROCUREMENT OF EQUIPMENT	SEA TRANSPORTATION	INLAND TRANSPORTATION	INSTALLATION		

5-6 Estimated Cost to be borne by the Philippines Government

The Government of the Philippines is not required to make additional budgetary appropriation for the implementation of the Project because of the facts that no installation works at the expenses of the Philippines are existed since the Equipment shall be supplied to the existing facilities concerned and that water supply and drainage system of existing facilities, power supply situation and durability of the structure of the facilities are considered not to obstruct the installment and operation of the Equipment to be supplied.

However, the expenses to be borne by the Government of the Philippines stipulated in item 5-2, (2) shall be an exception.

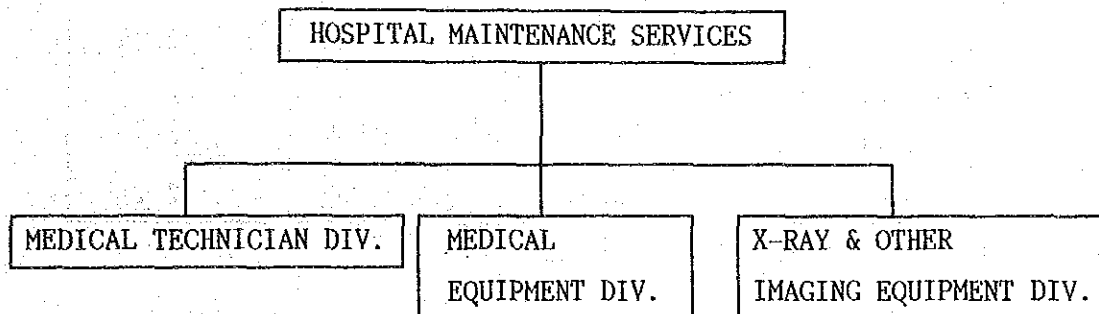
CHAPTER VI OPERATION AND MAINTENANCE

CHAPTER VI

OPERATION AND MAINTENANCE

6-1 Operation and Maintenance System for Medical Facilities and Equipment

Currently, Department of Health has an organization named Hospital Maintenance Services with fifteen (15) officials headed by Chief Technician, which is in charge of operation and maintenance of the medical facilities under the Department. Organization chart of it is as follows:



As a matter of fact, however, this Hospital Maintenance Services, which was organized just recently (in April 1988), is not sufficient enough in terms of manpower and technique. Accordingly, in implementing the work schedule of the Project, technical training shall be given by the Japanese technicians not only to the technicians to be invited from the facilities concerned but also to the staff working in this Service.

6-2 Estimation of Operation and Maintenance Expenses

The Operation and Maintenance expenses which will be required for the equipment supplied under the Project are as follows. However, basically no extra budgetary measures for the operation and maintenance are needed on the part of the Philippines, since the Project have mainly been designated for the replacement of the equipment, which could not be used because of fault, overage, etc.

(1) Power rate

The standard of power rate system is not equal with each province, furthermore the power rate is different in accordance with the amount of the contracted power consumption. Therefore, the estimation of power rate have been calculated based on the average amount of power rate of the following facilities spent in the previous year. (Table VI-1)

Table VI-1

	power consumption	power rate (peso)	per 1KW (peso)
Bataan Provincial Hospital	153000 KW	292,000	1.91
Pres. Ramon Magsaysay Memorial Hospital	109000 KW	242,000	2.22
Tarlac Provincial Hospital	243000 KW	548,000	2.26
Albay Provincial Hospital	170580 KW	486,000	2.85
Corazon Locsin Montelibano Memorial Hospital	181476 KW	334,000	1.84
TOTAL	693534 KW	1,902,000	(Av.) 2.21

Source : Annual report of each facility

Chart as below shows major equipment requiring consumption of power as well as estimated cost.

Major Equipment Requiring Consumption of Power

Table VI-2

	Unit	Power Consumption KW	Operation H./Day	Operation Day/Month	Power Consumption per year KW	Remark
X-Ray Unit	24	25.0	0.12	20	17,280	10film/day 7/sec/film
Air Conditioner	25	2.0	15	30	273,750	inspec./day
Ultra Sound Scanner	21	0.5	1.3	10	1,638	4 per/day 20 min/inspec.
ECG Unit	34	0.2	0.67	20	1,093	20 per/day 2 min/inspec.
O. R. Light (Main)	25	1.0	8.0	20	48,000	4 per/day 2hrs.
" " (Sub.)	10	0.8	2.0	20	3,840	2 per/day 1hrs.
" " (Mobile)	26	0.7	4.0	20	17,472	4 per/day 1hrs.
A. Conditioner(O. R.)	19	2.0	8	20	72,960	
" " (GYN)	8	2.0	2	20	7,680	
" " (Sub. O. R.)	4	2.0	4	20	7,680	
Auto Clave	17	3.0	2	10	12,240	2 per/day 1hrs.
ICU Monitor	41	1.0	24	10	118,080	1 inspec./day 24 hrs.
A. Conditioner(ICU)	25	2.0	24	15	216,000	
Infant Incubator	21	2.0	24	15	181,440	1 per/day 24hrs.
Photo Therapy Unit	27	1.0	10	15	48,600	1 per/day 10hrs.
Ex. Light	72	0.2	3	20	10,368	30 per/day 6min.
Ins. Sterilizer	81	1.5	2	10	29,160	2/day 1 hrs.
Spectro Photometer	23	0.2	2.0	10	1,104	1/day 2 hrs.
Auto Clave	14	1.5	4.0	10	10,080	2/day 2 hrs.
Blood Bank Refg.	26	1.0	24	30	227,760	Continuous 24
Laboratory Refg.	4	0.5	24	30	17,520	"
" Incubator	23	0.6	24	10	39,744	"
H. P. Sterilizer	7	5.0	5.0	20	42,000	2/day 2.5 hrs.
TOTAL					1,405,489	

$$1,405,489\text{KW} \times 2.21 = 3,106,130.6 \text{ Peso}$$

(2) Water Supply and Drainage Expense

Supplemental budget appropriation for the equipment supplied under the Project is not necessary, as the cost concerned might be included in the budget for existing facilities.

(3) Gas for Anesthesia Apparatus

On the basis of average day running hours of equipment as 2 hours the following expenses are required for one year operation.

Oxygen : 2 liters/min X 120 min. = 240 liter X 20 day X 12 month
= 57,600 liters/year

57,600 ÷ 1,500 liters/cylinder = 38.4 cylinders

Gas charging cost: 150 peso/cylinder X 39 cylinders = 5,850 Peso

N₂O : 4 liters/min X 120 min = 480 liters X 20 day X 12 month
= 115,200 liters/year

115,200 ÷ 4,050 liters/cylinder = 29 cylinders (approx.)

Gas charging cost: 4,000 Peso/cylinder X 29 Cylinders
= 116,000 Peso

TOTAL 121,850 Peso

(4) Supplies for Medical Equipment

1) X-Ray Division

X-Ray Film 10 film/day x 240days(year) x 24units=57,600 film/year
x 25 Peso/film = 1,440,000 Peso

Film Developing 2,000 Peso/600 film 3.33 Peso/film

Chemical

57,600 film x 3.33 peso = 191,808 Peso

2) Examination Division

E.C.G. Paper 2 rolls/month x 12 = 24 rolls/year/unit

24 rolls x 71 units = 1,704 rolls/year

x 30 peso/roll = 51,120 Peso

Paraffin for Auto Tissue

Processor 3 kg/year/unit
 x 5 units = 15 kg x 500 Peso/kg
 = 7,500 Peso

3) Others

Power Generator 20 hrs./month/unit x 19 units x 12 month
 = 4,560 hrs./year
 fuel 4 liter/hrs. 18,240 liters/year
 x 6 Peso/liter = 109,440 Peso

Annual operation and maintenance expense for equipment supplied by the Project is calculated at approximately peso 5,027,848 as follows, based on the above estimation.

Light and heating expense	Approx. 3,106,130 Peso
Gas for anesthesia apparatus	" 121,850 Peso
Consumables for medical equipment	" 1,799,868 Peso
<hr/>	
Total	Approx. 5,027,848 Peso

6-3 Operation and Maintenance Expense of Health Service Budget.

Budget for health service was increased at the rates of 38.6% and 2.2% for the fiscal years 1986~1987 and 1987~1988 respectively. In terms of monetary basis, Department of Health appropriated budget of Peso 5,040 million for 1988. The following Table VI-3 shows estimated health service budget for the years during which the Project will be implemented and the equipment supplied shall actually operate. In view of the fact that each increasing rate of budget in past two years is different significantly, health service budgets for 1988 and 1990 were estimated using the figure of 6.8% which is simple average figure of increasing rate in GNP and GDP for the year 1989~1990. Maintenance cost of Peso 5.02 million to be required by the equipment supplied under the Project is small in amount occupying less than 1% of the total budget of Department of Health and about 2% of the estimated budget for maintenance of the Department respectively. Furthermore, it is anticipated that actual cost amounting less than 30% of the above-

mentioned maintenance cost is much enough to cope with the maintenance requirement of the equipment since most of the equipment supplied is the replacement of the existing equipment of the subjected facilities. With this point of view, therefore, it can be said that maintenance cost of the equipment to be supplied under the Project shall not give heavy pressure on the financial situation of the Philippines.

Health Service Budget

Table VI-3

Fiscal year	Health Service Budget million Peso	Estimated Cost for Maintenance (45% of the total Health Service Budget)	Comparison with the previous year (%)	G N P increasing rate (%)	G D P increasing rate (%)	Percentage of maintenance cost for the Equipment	
						Against Budget of DOH	Against Maintenance Budget
1986	35.7	16.1	—	—	—	—	—
1987	49.5	22.3	+38.6%	+6.5%	+6.7%	—	—
1988	50.4	22.7	+2.2%	+6.9%	+7.1%	—	—
1989	* 53.3	23.9	+6.8%	+6.7%	+6.7%	0.94%	2.0%
1990	* 56.9	25.6	+6.8%	+7.0%	+7.1%	0.88%	1.9%
				Average 6.7%	Average 6.9%		

Source: Increasing rate of GNP and GDP was picked up from the Medium-Term Philippine Development Plan 1987~1992

Note : *shows figure by estimation

For the more specific comparison, the maintenance and management expenses required for each facility were sought based on simple average (the maintenance and management expenses required being 5,027 million peso ÷ 26 facilities = 193,000 peso). The table below shows percentage for each facility in comparison with the budget. The budget for each facility is divided as shown in Chapter 7, 45% for facility management and 10% for repair expenses. Portions for management expenses and medical product purchasing expenses etc. are supposed to be reduced from the above, namely,

the total amount of 40% to 45% is to be used for actual maintenance and management expenses. Based upon this assumption, percentage between maintenance and management expenses for each subjected facility and the maintenance expenses required for new provision of equipment were calculated. The maintenance and management expenses are quite meager as observed from the above, and the maintenance and management expenses actually needed are viewed to be less than 1/3 of the figure. So budget for each facility is deemed sufficient to meet the needs.

Assumed Maintenance and Management Expenses
for Each Subjected Facility

Table VI-4

Hospitals	Total budget	Rate against 1.93million peso average maintenance and management expenses for one facility	Assumed maintenance and management expenses (45% of total budget)	Rate of additional maintenance and management expenses against maintenance and management expenses
Gov. Tefilo Sison Memorial Hospital	6,141,524.00	3.1%	2,763,685.	7.0%
Bontoc General Hospital	6,068,424.98	3.2	2,730,791.	7.1
Ifugao General Hospital	5,312,681.00	3.6	2,390,706.	8.1
Isabela Provincial Hospital	10,024,877.00	1.9	4,511,194.	4.3
Bataan Provincial Hospital	12,677,319.00	1.5	5,704,793.	4.1
Pres. Ramon Magsaysay Memorial Hospital	6,994,998.00	2.8	3,147,749.	6.1
Tarlac Provincial Hospital	15,673,840.00	1.2	7,053,228.	2.7
Quezon Memorial Hospital				
Albay Provincial Hospital	13,947,102.86	1.4	6,276,196.	3.1
Sorsogon Provincial Hospital	10,171,022.00	1.9	4,576,959.	4.2
Roxas Memorial General Hospital				
Corazon Loocsin Montelibano Memorial	30,674,000.00	0.6	13,803,300.	1.4

Hospital				
Negros Oriental Hospital				
Southern Leyte Provincial Hospital				
Eastern Samar Provincial Hospital				
Sulu Hospital	9,964,000.00	1.9	4,483,800.	4.3
Zamboanga del Norte Provincial Hospital	11,832,621.85	1.6	5,324,679.	3.6
Datu Halun Sakilan Memorial Hospital	1,924,200.00	10.0	865,890.	22.1
Butuan Hospital	9,448,717.88	2.0	4,251,923.	4.5
Bukidnon Hospital	14,126,917.50	1.4	6,357,112.	3.0
Misamis Occidental Provincial Hospital	9,849,672.00	2.0	4,432,352.	4.4
Surigao del Norte Provincial Hospital	8,327,570.00	2.3	3,747,406.	5.2
Davao del Sur Provincial Hospital	5,081,000.00	3.8	2,286,450.	8.4
Surigao del Sur Provincial Hospital	10,614,000.00	1.8	4,776,300.	4.0
South Cotabato Provincial Hospital				
Sultan Kudarat Provincial Hospital	8,352,000.00	2.3	3,758,400.	5.1

Source: Annual report of each subjected facility

Data are not obtainable for the blanks.

6-4 Manpower Program and Budgetary Appropriation for Maintenance

In setting up the basic design, selection of equipment was made in accordance with the fundamental policy that the equipment to be supplied shall be the one requiring as less maintenance works as possible in view not only of the health situation of the Philippines but also of the existing conditions of respective subjected facilities and financial situation. As for the equipment which may require some extent of maintenance works, on the other hand, appropriate amount of repairing parts shall be attached to the equipment which can be taken care of by the technical ability of the personnel concerned including those who are belonged to the private sectors as stated in 6-5 below. Thus, considerations were directed to place as less burdens as possible on

financial and manpower situations of the Philippines. It is considered, therefore, that it is not necessary for the Philippines to further strengthen manpower, operational system and budgetary appropriation for the time being.

6-5 Cooperation from Private Sector

Basically, the equipment supply plan is so designed that any special works for maintenance are not required. However, some damages will happen during long term operation of the equipment and malfunction thereof shall be caused by either misuse or the operation beyond the life of the equipment. In order to cope better with such problems, the main equipment to be supplied was selected under the condition that the local agents of the Japanese manufacturers concerned shall be located in the Philippines. The main local agents in the Philippines are as follows:

Local Agent	Main items being dealt with
1. Medical Center Trading Corp.:	Operating Light, Operating Bed, Anesthesia Apparatus etc.
2. Federal Medical & Pharmaceutical, Inc.:	Defibrillator, Electrocardiograph, etc.
3. Esphar Medical Center	: X-Ray Unit, Operating Light, Operating Bed, Anesthesia Apparatus, Infant Incubator, Microscope etc.
4. Medico Philippines, Inc.	: X-Ray Unit, Ultrasound Scanner, Electrocardio Monitor etc.
5. Instrumix	: X-Ray Unit, Ultrasound Scanner, Spectrophotometer etc.
6. Golden P-M Enterprise, Inc.:	X-Ray Unit, Ultrasound Scanner, etc.
7. Aseda	: Fiberscope, High Speed Sterilizer, Laboratory Apparatus, etc.

These local agents having their head offices in Manila City have been actively engaged in sales and after-care services throughout the country of the Philippines.

CHAPTER VII PROJECT EVALUATION

CHAPTER VII

PROJECT EVALUATION

The Provincial Hospitals for which medical equipment is to be provided under the Project have been in such a situation as they can not render adequate health services because of insufficient and aged medical equipment presently owned by them, in spite of the fact that those hospitals, having 100 to 250 beds, are supposed to be kernel medical facilities in the provincial areas of the Philippines. The purpose of the Project is to improve such fundamental health care as internal department, surgical department as well as obstetrical department putting main emphasis on the secondary health care and to help the Government of the Philippines pursue the National Health Project in the Medium-Term National Development Plan and to help them activate the primary health care, infectious disease control programme etc, which compose an important part of the medical health service policies being executed by the Government of the Philippines. The following effects can be expected through the implementation of the Project:

(I) Effectiveness of the Project

1) Direct Effect

① Benefit to the Population

In view of the facts that this Project is directed to 26 Provincial Hospitals in the capital cities of the relates provinces located in 12 Regions excluding the National Capital Region, and that these hospitals are the highest medical facilities in respective provinces, the inhabitants in all these provinces are expected to be benefited in one way or another by the health services of higher quality to be rendered by these hospitals up-graded under the Project.

Table VII-1 below shows estimated population in 1989 (the year when the Project is to be implemented) in the provinces concerned. According to this, local inhabitants numbering

19,790,000, equivalent to 33% of the total population of the country can be benefited by this Project.

Estimated Population in 1989
in the Provinces concerned

Table VII-1

Province	Estimated Population	Province	Estimated Population
Total Population of the country	Estimation: 60,096,988		
Mt. Province	115,606	Pangasinan	1,910,223
Ifugao	132,873	Isabela	1,107,253
Bataan	438,460	Tarlac	813,510
Zambales	559,324	Quezon	1,408,601
Albay	984,740	Sorsogon	622,748
Capiz	613,751	Negros Occidental	2,396,237
Negros Oriental	998,098	Southern Leyte	368,617
Eastern Samar	391,058	Sulu	437,337
Tawi-Tawi	238,438	Zamboanga del Norte	715,893
Agusan del Norte	465,405	Bukidnon	807,735
Misamis Occidental	479,384	Surigao del Norte	465,455
Davao del Sur	1,463,503	South Cotabato	971,866
Surigao del Sur	481,213	Sultan Kudarat	407,312
		Total	19,794,640

Source: Annual Report of the Philippines

Population Statistics

② Benefit to the Budget for Health Services

The Department of Health has allocated, for fiscal 1988 5,040 million pesos to the medical facilities from its limited financial resources. Table VII-2 shows allocated budget by item:

Allocation of Budget (1988)

Table VII-2

Item	%	Amount in Peso	Amount in Yen
Personnel expenses	40	2,016 million	12,297.6 million
Facility Operation Cost	45	2,268	13,834.8
Equip Procurement Cost	5	252	1,537.2
Building and Repairs Cost	10	504	3,074.4
Total	100	5,040	30,744.0

Source: Department of Health

As seen in the above table, the Department of Health allocates, in 1988, 252 million pesos for Equipment Procurement Cost and 504 million pesos for Building and Repairs Cost. In cases that the Project is implemented in 1988, the Department of Health can save more than 50% of its budget only with regard to the Equipment Procurement Cost. It can be said, therefore, that if Building and Repairs Cost is saved by the additional supply of equipment under the Project, the Department of Health can utilize the money thus saved to increase the manpower and to procure drugs necessary for fundamental medical services including eradication of communicable diseases so that the attainment of the purpose of the National Health Programme being executed presently can be realized.

2) Indirect Effect

Most pieces of the medical equipment to be supplied under the Project are essential to solution of problems facing by the Philippines and to the control of serious diseases such as infectious diseases, as well as to rendering fundamental health service on which the secondary medical care is based.

Furthermore, supply of the equipment will enable provision of not only the secondary health care but also the primary and the tertiary health care which have so far been deemed to be

insufficient. In addition, the scope of health service activities in the fields of treatment and diagnosis will greatly be expanded.

(2) Appropriateness of the Project's Implementation

The Government of the Philippines has set the following purposes of the health program in the National Development Program established in 1986:

- ① To improve the nutritional situation of the nation as a whole;
- ② To render effective health service to the entire nation through expedited primary health care; and
- ③ To promote family planning so that the environment of family life of the nation will be improved.

Due to financial limitations, however, the above-mentioned purposes had not been attained as anticipated. Therefore the Government of the Philippines has requested grant aid cooperation from the Government of Japan for this Project. The objectives of this Project are to supplement medical equipment which is insufficient to the country mainly for the primary and secondary health care in order to help indirectly in the implementation of the health program of the Philippines. Direct and indirect effect as mentioned above will be expected through implementing the Project.

In addition to the above, this Project is contemplated to expedite realization of the health policy of "provision of higher level health service for the whole nation" by means of reducing the present high rates of morbidity and mortality of infectious diseases which are common among the developing countries.

In selecting the medical equipment to be supplied, the principle to replace or supplement the existing equipment in each of the facilities concerned was maintained, and careful and thorough studies were made so that no additional budgetary appropriation by the Government of the Philippines was required for maintaining and

operating the equipment supplied and that the equipment to be supplied shall be satisfactorily operated with present level of knowledge and technique of the personnel of the facilities concerned.

CHAPTER VIII CONCLUSION AND RECOMMENDATIONS

CHAPTER VIII

CONCLUSION AND RECOMMENDATIONS

8-1 Conclusion

The Government of the Philippines has been striving for the eradication mainly of infectious diseases such as communicable disease formulating the Health Program in its Medium-Term Development Plan (1986~1992). The medical equipment being presently requested and the facilities to which the equipment is to be supplied are included in the above mentioned Health Program and will play a very important role for the health and medical activities in the rural areas concerned.

As stated previously, much effectiveness is expected by implementing the Project and significant amount of benefit may be enjoyed by the people of the Philippines. The roles to be played by this Project for carrying out of the Health Program of the Philippines are deemed to be great.

In undertaking the basic design, careful and thorough studies were made with regard to general situation of the Philippines, and every consideration was also given so that the greatest effect can be obtained from the smallest resources. It can be concluded, therefore, that the Project to be implemented under the Japanese Government's Grant Aid Program is possible and appropriate.

8-2 Recommendation

The Government of the Philippines is requested to carry out the following matters, in order to make the Project more effective:

- 1) Although the equipment selected was durable with little necessity of maintenance and repair, it is recommended that the Department of

Health dispatch from Hospital Maintenance Service a traveling team for maintenance and repair at least once in half a year to spend 4 to 5 days respectively to each of the facilities in order to maintain equipment under good condition for as long as possible.

- 2) Although repairing parts necessary for a certain period of time are included in the basic design of the Project, it is recommended that the Department of Health have some parts in stock in advance so that they can cope with the emergency requirements in the future.

APPENDIX I

1-1 List of Members of study Team

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|---|-------------------------|
| 1. Mr. Satoshi KINUGAWA
Official, Grant Aid Division,
Economic Cooperation Bureau,
Ministry of Foreign Affairs. | Team Leader |
| 2. Dr. Katuhiro YOSHITAKE
Medical Official, Department of
International Cooperation,
National Medical Center Hospital
Ministry of Health and Welfare. | Hospital Management |
| 3. Mr. Zen-ichi ANDO
Medical Equipment Specialist,
Consultant Division.
Binko Ltd. | Medical System Planning |
| 4. Mr. Shin-ichi KIMURA
Medical Equipment Specialist,
Consultant Division,
Binko Ltd. | Medical Equipment |
| 5. Mr. Junjirou MIKAMI
Architect,
Consultant Division,
Binko Ltd. | Facility Engineering |

1-2 Itinerary of Study Team

- 6/6 (Mon.) Arrives at Manila
Courtesy call to the Embassy of Japan and JICA
Office. Meeting
- 6/7 (Tue.) Courtesy call to the Ministry of Health,
Meeting for arranging of schedule.
- 6/8 (Wed.) Trip from Manila to Lucena, Quezon.
Survey of Quezon Memorial Hospital.
Trip from Lucena to Batangas.
- 6/9 (Thu.) Survey of Batangas Regional Hospital.
Trip from Batangas to Manila.
- 6/10 (Fri.) Survey of Jose Reyes Memorial Medical Centre.
Survey of Quirino Memorial Hospital.
- 6/11 (Sat.) Collection of related data.
- 6/12 (Sun.) Inside meeting of the Team.
- 6/13 (Mon.) Trip from Manila to Tarlac.
Survey of Tarlac Provincial Hospital.
Trip from Tarlac to Pampanga, Sanfernando.
Survey of Central Luzon Regional Hospital.
Trip from Sanfernando to Manila.
- 6/14 (Tue.) Trip from Manila to Balanga, Battan.
Survey of Battan Provincial Hospital.
Trip from Balanga to Iba, Zambales.
- 6/15 (Wed.) Survey of President Ramon Magsaysay Memorial
Hospital.
Survey of Barangay Health Station.
Survey of following Hospitals on the way from
Iba to Manila.
Survey of Sanmarcelino District Hospital.
Survey of Castillejos Rural Health Unsit.
Survey of Dinalupihan District Hospital (Battan)
- 6/16 (Thu.) Trip from Manila to Legaspi, Albay.
Survey of Albay Provincial Hospital.
Trip from Legaspi to Sorsogon.
Survey of Sorsogon Provincial Hospital.
Trip from Sorsogon to Legaspi.

- 6/17 (Fri.) Trip from Legaspi to Naga, Camarines Sur.
Survey of Bicol Regional Hospital.
Trip from Naga to Legaspi.
- 6/18 (Sat.) Trip from Legaspi to Manila.
Collection of related data.
- 6/19 (Sun.) Arrangement of collected data.
- 6/20 (Mon.) Discussion and Consultation with the Ministry of Health.
Visit to NEDA.
Government members arrive at Manila.
Inside meeting of the Team.
Courtesy call to the Embassy of Japan and JICA Office.
Meeting.
- 6/21 (Tue.) Consultation with the Ministry of Health.
Hearing from the representatives from each hospital about Equipment to be supplied.
- 6/22 (Wed.) Survey of Quezon Memorial Hospital.
(Government members)
Hearing from the representatives from each hospital about Equipment to be supplied.
Dinner party with the members of the Embassy of Japan and JICA.
- 6/23 (Thu.) Survey of Quirino Memorial Medical Centre.
(Government members)
Hearing from the representatives from each hospital about Equipment to be supplied.
Inside meeting of the Team.
- 6/24 (Fri.) Discussion and consultation with the Ministry of Health at the Hotel Manila Peninsula.
(Presentation of survey, plan and preparatory Minutes)
- 6/25 (Sat.) Arrangement of collected data.
- 6/26 (Sun.) Review of consultation of the minutes.
Preparation of Equipment List.
Arrangement of data.
- 6/27 (Mon.) Consultation with the Ministry of Health.
(Final plan of the minutes, Equipment list)

6/28 (Tue.) Exchange of signature for minutes at the Ministry of Health.

Report to the Embassy of Japan and JICA Office about result of Basic Study.

Dinner party sponsored by the Ministry of Health.

6/29 (Sat.) Leave for Tokyo.