

Chapter 1 Background of the Project

1-1 Background

The Republic of Armenia (hereinafter referred as “Armenia”) is situated in the South West of the Trans Caucasus. It is an inland country neighboring Turkey, Iran, Azerbaijan and Georgia. The country spans an area of 298,000 km² and has a population of 3,798,000 people (at end 1998).

Since independence from the Soviet Union in September 1991, its social economy has fallen into critical conditions as a result of the Great Armenian earthquake, and the war with neighboring Azerbaijan for Nagorno Karabagh. Real GDP has seen positive growth since 1994, but its economy continues to worsen.

Amidst impoverished and worsening economic conditions, Armenia's medical sector is in the process of reforms to rebuild its health care system - whose function has deteriorated remarkably -and to improve the ailing medical services. The reforms extend to various areas, for example, restructuring the referral system, and optimization plan for medical facilities (hospital function, hospital numbers, bed numbers etc.)

Despite the fact that, the subject of this Project – namely Republic Medical Center “Armenia” (hereinafter referred as “Medical Center “Armenia”) - is a tertiary referral hospital, the majority of its existing medical equipment is 15-20 years old, of Soviet or East European origin and far too old to work. In addition, equipment is lacking in overall quantity. As a result, in spite of the doctors’ high skill, their work is hindered and they are unable to offer even basic diagnosis and treatment properly, let alone carry out their role and function as a tertiary hospital.

In order to improve this situation, prompt renovation of facilities and renewal of obsolete equipment are necessary. Recovery of hospital’s function as a tertiary hospital at the Medical center “Armenia” will contribute to improving medical services throughout Armenia.

Under these circumstances, the Armenian Government requested a grant-in-aid to procure medical equipment for the Medical Center “Armenia”. In response to this request, the Japan International Cooperation Agency dispatched a preparatory study team to Armenia, from June 23 to July 3, 1998. After the necessity and propriety of this request was confirmed, a basic design study team was dispatched to Armenia.

1-2 Out line of the Project

- (1) Request: March, 1997
- (2) Responsible Authority: Ministry of Health of the Republic of Armenia
- (3) Project site: Republic Medical Center "Armenia"
- (4) Content of Request: Procurement and installation of medical equipment (196 items)

Requested items: Magnetic resonance imaging system, Angiographic X-ray system, C-arm X-ray system, Fluoroscopy X-ray system, Basic X-ray system, Ultrasound scanner, Endoscope, Operating table, Anesthesia Apparatus, Ventilator, Patient monitor, Sterilizer, Biochemical analyzer, Operating instrument, Ambulance

Chapter 2

Contents of the Project

Chapter 2 Contents of the Project

2-1 Objectives of the Project

(1) Objective of the Project

The purpose of the Project for Improvement of Medical Equipment for Republic Medical Center "Armenia" is to improve the quality of medical services at the Center by upgrading its medical equipment, necessary to carry out its function as a tertiary hospital. The Project will also contribute to improving medical services throughout Armenia.

2-2 Basic Concept of the Project

The object of the Project is to procure the absolute minimum of medical supplies essential as a tertiary medical facility at the Medical Center "Armenia", prioritizing the renewal of existing medical equipment.

Basic Concept of the Project

- The scale of the Plan should be determined, taking into account the medical system, hospital scale and hospital organization suited to Armenia's plans for health care reform.
- The highest priority is the replacement of existing equipment for medical treatment and related basic equipment for diagnosis, and to procure the absolute minimum of equipment required for a recovery of the hospital function.
- To make administration of maintenance and operations possible by the Ministry of Health of Armenia and the Medical Center "Armenia". Advanced medical equipment incurring high costs in control administration is considered beyond the scope of the Project.
- Medical equipment with limited beneficiaries and non-essential equipment are considered beyond the scope of the Project.
- To give due attention to administration of maintenance and operations and consider the supply system of consumable goods, and a sustainable service system.

With exhausted and worsening economic conditions amidst the collapse of the Soviet Union and independence, the confusion of moving towards a market economy, the 1988 earthquake, and further military disputes with neighboring countries, Armenia is in the process of health care reforms. The aim is to rebuild its health care system - whose function has deteriorated remarkably - and to improve the medical services. These reforms include the establishment of the referral system and optimization of medical facilities, (hospital function, hospital numbers, bed numbers) etc. However, the subject of this

Project - namely the Medical Center "Armenia" - holds a position as a tertiary referral hospital under republic jurisdiction and patients are brought here for medical care not only from central Yerevan but also from all regions of Armenia. Included in the revisions there are also plans to cut current excess beds by 5% annually over 5 years. Since these cuts will be made on the Medical Center "Armenia", too, this Project aims to consider the system, scale and organization of the Medical Center "Armenia" whilst ensuring its scope is suited to the health care reform plans.

Despite the fact that the Medical Center "Armenia" is a tertiary referral hospital, the majority of its existing medical equipment is 15-20 years old, of Soviet or East European origin and far too old to work. In addition, equipment is lacking in overall quantity. As a result, in spite of the doctors' high skill, their work is hindered and they are unable to offer even basic diagnosis and treatment properly, let alone carry out their role and function as a tertiary hospital. In order to improve these conditions, renewal of existing treatment equipment essential for basic treatment and procurement of related diagnosis equipment is to be prioritized and procurement of minimum required medical equipment for recovery of the function of the hospital is necessary.

As one part of hospital management, management of maintenance for equipment supplied must be the responsibility of the Ministry of Health of Armenia and the Medical Center "Armenia". Medical equipment requiring high maintenance cost was considered beyond the scope of supplies. Also, equipment with limited beneficiaries and non-essential equipment was considered beyond the scope of the Project.

The Project is to give due attention to administration of maintenance and operations of equipment after installation and to consider the supply system of consumable goods, and a sustainable service system.

Initially Armenian side requested procurement of a total of 196 items. Upon the deliberation with officials concerned of the Ministry of Health and Medical Center "Armenia" the procurement of equipment, mainly for renewal of the existing equipment is confirmed and a total of 165 items is selected.

2-3 Basic Design

2-3-1 Design Policy

(1) Policy concerning natural environment conditions

The city of Yerevan in which the Medical Center "Armenia" is situated is at a latitude of

45 degrees 20 minutes and a longitude of 44 degrees 50 minutes. Geographically it is set in the gently undulating Armenian highlands 900-1000m above sea level. Its climate is continental in nature; as it is high above sea level, the difference between maximum and minimum temperatures are severe. The climate is dry with little rainfall, the average temperature year-round is 13 degrees with average maximum temperature of 24.2 degrees and average minimum temperature of 3.3 degrees. There is an average annual rainfall of 258.3mm but the climate varies greatly from year to year.

The natural climate described above is unlikely to affect normal efficiency of the supplies covered within this Project and additional measures due to natural conditions are not considered necessary.

(2) Policy concerning procurement from countries other than Japan and Armenia

The country of Armenia is located in the Caucasus region, i.e., at some geographical distance from Japan. Economic ties between Armenia and Japan have been weak compared to those with America and other European countries, and Japanese companies have largely stayed out of the Armenian market. In terms of medical equipment, hardly any Japanese equipment has been procured to Armenia, except for a few X-ray and endoscope apparatus, so there are no official distributors or agents in Armenia. The number of European and American companies with distributors and agents is limited even in Yerevan. Accordingly, when procuring equipment that requires periodical maintenance or a continuous supply of consumable goods and reagents, it is appropriate to consider procurement from Japanese, American and European manufacturers with distributors or agents in Armenia or neighboring countries.

There is a long history of trade between Moscow and Armenia, and many Japanese, American and European companies maintain Moscow-based distributors for the Armenian region. However, due to the economic crisis of August 1998 in Russia, many companies there have been unable to operate normally. Surveys of distributors and agencies in Moscow provide clear support for this notion.

As a result, when procuring equipment that requires periodical maintenance or a continuous supply of consumable goods and reagents, it is important to consider procurement from Japanese, American and European manufacturers that have distributors or agents in Armenia, Georgia or Russia.

(3) Policy concerning maintenance and management

Since the Medical Center "Armenia" is adequately staffed with highly skilled medical personnel, no problems concerning the utilization of procured medical equipment are envisaged. Also, the Medical Center has contracts with engineers stationed on the premises round the clock to deal with equipment maintenance. They have a sound understanding of not only the existing equipment but also the latest medical equipment and are able to maintain the equipment procured under this Project.

(4) Policy concerning the scope and grade of equipment

1) Policy concerning basic equipment

Suitable quality and quantities of basic medical equipment with the necessary function and ability should be determined in order for the Medical Center to carry out its function and role as a tertiary hospital. Also, it is necessary to prioritize equipment with specifications that do not require high maintenance costs.

2) Policy concerning consumable goods and spare parts

The majority of the existing equipment is unusable, either due to obsolescence, or because the equipment has been left unused over a long period of time as spare parts for repair could not be obtained.

Under this Project it is necessary to procure equipment which supply system of consumable goods and spare parts is prompt and inexpensive, and frequent repair is unnecessary. Consumable goods will be supplied at the time of installation in order to conduct smooth start of equipment. It is confirmed that the quantity of consumable goods should be suited to the above objectives and the Medical Center "Armenia" will be responsible for further procurement.

(5) Inland transportation policy

The goods are to be unloaded at the port of Poti in Georgia and transported over-land across Georgia to Yerevan in Armenia containerized in trucks or by rail. Taking into account the comprehensive facilities of Poti port and the conditions of the roads, this is thought to be the best route in terms of safety and procurement dates. Transportation companies working the overland railways linking Georgia with Armenia were originally part of the national railway of the former Soviet Union; for the main part they give good results and no problems are envisaged. On arrival at the Medical Center "Armenia", once the freight is cleared and unpacked, it is then installed appropriately.

(6) Policy for the installation work period

The period of time allotted to the Project is one fiscal year. A thorough study is being conducted on the period necessary for procurement, transportation, and installation of the procured equipment, including procurement from countries other than Japan and Armenia, to prevent any disruption during the implementation period.

2-3-2 Basic Plan

(1) Total concept of project planning

The Project has determined 165 items of medical equipment as appropriate for procurement. Since most of these items will be replacing existing equipment, problems associated with installation space are anticipated only for the radiological units and sterilizers; some construction work will be required to fit these items appropriately into their designated rooms. Meetings with members of the hospital staff were held to discuss the installation of new equipment, and it has been confirmed that construction work and installation will be performed without disrupting medical activities. Also, it has been agreed that the hospital will be responsible for the removal of the existing old equipment.

The plan should provide for careful consideration of management and maintenance, as well as a continuous supply system for procuring technical services, spare parts, and consumables.

(2) Equipment Plan

Table 2-1 lists the equipment planned for procurement.

Table2-1 Equipment List of the Project

Item No.	Equipment	Qty.
Radiology		
A01	Remote Control Fluoroscopy X-ray System	2
A02	Basic X-ray System	2
A03	C-arm X-ray System	1
A04	X-ray film Processor	2
Neurosurgical, Neurology and Psychiatry		
B01	Electroencephalograph Digital	1
B02	Electroencephalograph Analog	1
B03	Complete EMG/NCV/EP/ENG	1
B04	Stereo Fundus Camera	1
B05	Trial Lens Set	3
B06	Halogen Ophthalmoscope	2
B07	Computer Color Perimeter	1
B08	Pen Light	15
B09	Percussion Hammer, Ohnuki Type	5
B10	Percussion Hammer, Tyler Type	5
B11	Air Pressure Skull Operation Set	1
B12	Micro-Neuro Surgery Operation Table	1
B13	Yamada-Sata Lumbar Puncture Instrument Set	1
B14	Instrument Set for Carotid Arterial Endarterectomy	1
B15	Bipolar Coagulator Unit	1
B16	Neurosurgery Instrument Set	1
B17	Microvascular Surgical Instrument Set	1
B18	Laminectomy Operating Set	1
B19	Hemilaminectomy Retractor	1
B20	Laminectomy Retractor	1
B21	Cervical Operating Set	1
B22	Laminectomy Rongeur	1
B23	Spinal Retractor	1
B24	Spinal Cord Traction Frame	1
B25	Manual Dermatome	1
B26	Standard Plastic Surgery Set	1
B27	Electric Traction	2
Vessel Surgery, Cardiology and Pulmonology		
C01	U-S Scanner	1
C02	U-S Scanner with Color Doppler	1
C03	Doppler Stethoscope	3
C04	Spirometer	2
C05	Exercise Testing System	1
C06	Bronchofiberscope with Accessory	2
C07	Electrocardiograph	2
C08	Syringe Infusion Pump	6
C09	ECG Analysis System (Holter ECG)	1
C10	Bedside Monitor	4
C11	Defibrillator	2
C12	Monitoring System for 6 Patients	1
C13	Pneumo Massager	2
C14	Pulse Oximeter	4
C15	Measuring Rod	2
C16	Automatic Weighing Scale	3
C17	Instrument Cabinet	2
C18	Stethoscope	2
C19	Sphygmomanometer Mercurial	4
C20	Sphygmomanometer Automatic	4
C21	Venotomy Instrument Set in Metal Case	1
C22	Binocular Operating Microscope	1

Item No.	Equipment	Qty.
Urology, Surgery, Gastroenterology and Endocrinology		
D01	U-S Scanner	1
D02	Portable U-S Scanner	2
D03	Gastrointestinal Fiberscope	2
D04	Duodenofiberscope	2
D05	Colonofiberscope	2
D06	Lecturescope	1
D07	Light Source for Endoscope (2 Halogen, 1 Xenon)	3
D08	Electro Surgical Unit	2
D09	Endoscopic TV System	3
D10	Endoscopic Suction Unit	3
D11	Video System for Endoscope	1
D12	Manual Disinfecting Unit for Endoscope	2
D13	Operating Laparoscope set with instrument two sets	1
D14	Endoscopic Table	3
D15	Endoscopic Cabinet	3
D16	High Pressure Steam Sterilizer, Large	2
D17	Hot Air Sterilizer, Large	1
D18	Electro Surgical Unit, Portable	2
D19	Sliding Stretcher	3
D20	Recovery Stretcher	6
D21	Operating Instrument Set in Metal Case	1
D22	Small Operating Instrument Set in Metal Case	1
D23	Gastrectomy Instrument Set in Metal Case	1
D24	Cholecystotomy Instrument Set in Metal Case	1
D25	Thyroidotomy Instrument Set in Metal Case	1
D26	Emergency Tracheotomy Instrument Set in Metal Case	1
D27	Emergency Chest Operating Instrument Set in Metal Case	1
D28	Appendectomy Instrument Set in Metal Case	1
D29	Nephrectomy Instrument Set in Metal Case	1
D30	Prostatotomy Instrument Set in Metal Case	1
D31	Resectoscope Set	1
D32	Resectoscope Accessory Set	1
D33	Urological Examining & Treatment Table	1
D34	Examining Chair	1
D35	Transurethral Operating Table	1
D36	Universal Operating Table	2
D37	Operating Table	1
D38	Operating Light, Major, 2 Heads	2
D39	Operating Light, Mobile	3
D40	High-Power Electric Suction Unit	2
D41	Electric Suction Unit	2
D42	Portable Suction Unit	2
Otolaryngology		
E01	Clinical Audiometer	2
E02	Clinical Impedance Meter	2
E03	Diagnostic Set	3
E04	Rhino-Laryngo Fiberscope	1
E05	Head Mirror	5
E06	Lempert Head Mirror	5
E07	Lucae Tuning Fork	5
E08	Lucae Tuning Fork	5
E09	Laryngo Stroboscope	1
E10	Binocular Operating Microscope	1
Anesthesiology and Reanimation		
F01	Ventilator	3
F02	Anesthesia Apparatus with Ventilator	4
F03	Laryngoscope with Lightsource	1
F04	Oxygen Monitor	2
F05	Endotracheal Set	3

Item No.	Equipment	Qty.
F06	Portable Pulse Oximeter	4
F07	Bedside Monitor	4
F08	2-Crank Standard Bed	10
F09	ICU Bed	6
F10	Stretcher Trolley	6
F11	Instrument Table	3
F12	Treatment Carriage	5
F13	Syringe Infusion Pump	6
F14	Nerve Stimulator	2
F15	Stand for Infusion	6
Laboratory		
G01	Biochemical Compact System	1
G02	Biochemical Analyzer	1
G03	Coagulation System	1
G04	Blood Cell Counter	2
G05	Automated Analyzer for Immunoanalysis	1
G06	ELISA	1
G07	Blood Gas Analyzer	1
G08	Ion-Selective Electrolyte Analyzer	2
G09	Incubator	1
G10	Incubator, Low Temperature	1
G11	Incubator, CO2	1
G12	Anaerobic Incubator	1
G13	Hot Air Sterilizer (table top)	4
G14	Medical Refrigerator	2
G15	Blood Bank Refrigerator	2
G16	Electrophoresis System with Densitometer	1
G17	Electronic Analytical Balance	4
G18	pH Meter, Digital	2
G19	Universal Microscope	1
G20	Medicine Cabinet	2
G21	Revolving Chair	2
G22	Instrument Cabinet	2
G23	Automatic Photomicrograph System for Microscope	1
G24	Microscope	1
G25	Urine Analyzer	2
G26	High Pressure Steam Sterilizer, Small	1
G27	Deep Freezer	1
G28	Plasma Freezer	1
Pathology		
H01	Autopsy Table	1
H02	Morgue Cart	1
H03	Automatic Tissue Processor	1
H04	Paraffin Oven	1
H05	Large Sliding Microtome	1
H06	Universal Microscope	1
H07	Automatic Photomicrograph System for Microscope	1
H08	Cryomicrotome	1
Dental		
I01	Clinic Stool	4
I02	Dental Unit	3
I03	Ultrasonic Dental Scaler	1
Hemodialysis		
J01	Hemodialysis Machine	2
J02	Water Treatment System for 10 Hemodialysis Machine	1
Laundry		
K01	Washing and Drying Machine	2
Pharmacy		
L01	Electronic Analytical Balance	2

Table 2-1 shows the equipment judged appropriate for this Project. This section deals with basic specifications of the equipment.

1) Radiological units

(Remote control fluoroscopic-radiological unit, basic examination radiological unit, C-arm X-ray unit)

For the fluoroscopic-radiological unit, a remote-control type unit should be procured so that fluoroscopy and X-ray can be performed from a control room through a TV monitor. Under this arrangement, an operator monitors test subjects through the lead glass and TV monitor and controls every aspect of the test: body-position changes, fluoroscopic and irradiation field selection, compression, snapshots, and test conditions. This configuration minimizes the operator's radiation exposure. One of the units should be equipped with the function of simple angiography.

Also, when procuring a radiological unit, Bucky table/movable-type radiological units should be selected, in view of operability and maneuverability considerations. One of the units should be equipped with simple tomography.

C-arm X-ray unit should be equipped with TV to use for intraoperative and postoperative diagnoses. Also, it should be 9 inch for use in neurosurgery department.

Since new equipment will replace the existing equipment and the rooms where the equipment is to be installed already have basic X-ray protection measures in place, no major reconstruction work is necessary. The renovation work necessary for installation of remote control X-ray units is to make doors to carry the equipment into the room, a partition wall and control window on the 6th floor; widen the control window and renewal of the floor on the 2nd floor.

There are no major problems associated with maintenance costs of the equipment, but it will be necessary to consider procurement from companies that can offer technical servicing.

2) X-ray film processor

It is expected that the amount of X-ray film development will increase after the procurement of equipment. Currently, there are two X-ray film processors, which were installed several years ago. Since these machines take 180 seconds to develop one X-ray film, they will not be able to handle the total film output generated by the new machines. The new automatic X-ray film processor should only take 90 seconds per X-ray film.

3) Ultrasound scanners (US scanners)

This instrument is widely used today to examine internal organs because it is easy to use and involves no radiation exposure. Centralization is an emphasis of the Project, so a color doppler US scanner, examining circulatory organs and a mobile US scanner, capable of B/M mode diagnostic imaging, should be procured. Probes should be frequency adjustable, so that physicians can examine ailments over a range of fields (e.g., by using probes that examine digestive organs, circulatory organs, endocrinological organs or urinary organs, and probes used in OBGYN units (vaginal probes).

4) Endoscopes

Flexible and rigid endoscope able to share accessories depending on the objectives of use should be selected. It is necessary to consider component of accessories (suction pump, light source, monitoring system, electrosurgical unit, etc.) in view of sharing. As for laparoscope and resectoscope, standard operation set and accessories should be procured.

5) Equipment for hemodialysis

There are many patients who require hemodialysis, and the hemodialysis equipment to be procured will be utilized to its full capacity. As such, two key considerations are ability for routine inspection and access to a continuous supply of consumable goods. The equipment procured should thus be able to accommodate locally produced consumable goods and to receive technical service locally.

6) High pressure steam sterilizers

Centralization-related considerations suggest that two large, high-pressure sterilizers should be procured. Based on current usage patterns, the capacity of the two new sterilizers should be about 500 liters. No problems are envisaged for installation, excluding widening the doors to carry equipment in and removal of the two existing large completely broken sterilizers.

7) Laboratory equipment for examination

Basic laboratory equipment should be procured after consideration of the cost of reagents and consumable goods and the ease of acquiring these products. Laboratory equipment should be serviceable in Armenia. Furthermore, reagents must be purchasable in Armenia or in neighboring countries at reasonable price.

8) Operating tables

All the operating tables planned for procurement should be equipped with an adjuster, so

that patient body position can be altered to accommodate various types of surgery. A multi-purpose operating table, urological table and neurosurgery table should be procured. As for installation, there should be no problem if the existing equipment is removed. Also, there is no problem concerning utilities such as electricity.

9) Surgical instrument sets

Based on consulting with physicians at the Medial Center, standard surgical sets being used in Japan should be selected. Also, monopolar and bipolar electrosurgical units should be procured so that they can be used for coagulation and incisions by adjusting output.

10) Operating lights

In order for hospital surgeons to be able to operate smoothly under sufficient lighting, shadowless operating lights should be procured. Since new surgical lights will replace the existing lights, there should be no problem with either the utility or the strength of the ceiling installation.

11) Anaesthetic apparatus with ventilator

Anaesthetic apparatus with ventilator should be procured, so that intravenous, spinal or epidural anaesthesia can be performed. Each apparatus should be equipped with safety devices to ensure: a) immediate connection and/or shut-off, using an oxygen gas safety block system; b) no simultaneous administration of two anaesthetic gases; and c) that minimal oxygen concentration is maintained. The most commonly utilized halothane or isoflurance type vaporizers should be selected.

12) Patient monitoring units

Separate bedside monitors that measure regular biological parameters (ECG, SpO₂, body temperature, non-invasive blood pressure and respiration) should be procured for the ICU. For the CCU, units for 6 patients equipped with a wireless transmitter system observing ECG and respiration of each 6 patients at the same time is suitable because the majority of the patients are clearly conscious and able to walk. In addition, separate bedside monitors as at the ICU should be procured for serious cases at the CCU.

(3) Floor plan of Medical Center “Armenia”

Layout plan of the Medical Center “Armenia” and floor plan of its departments are shown in Fig.2-1 and Fig.2-2.

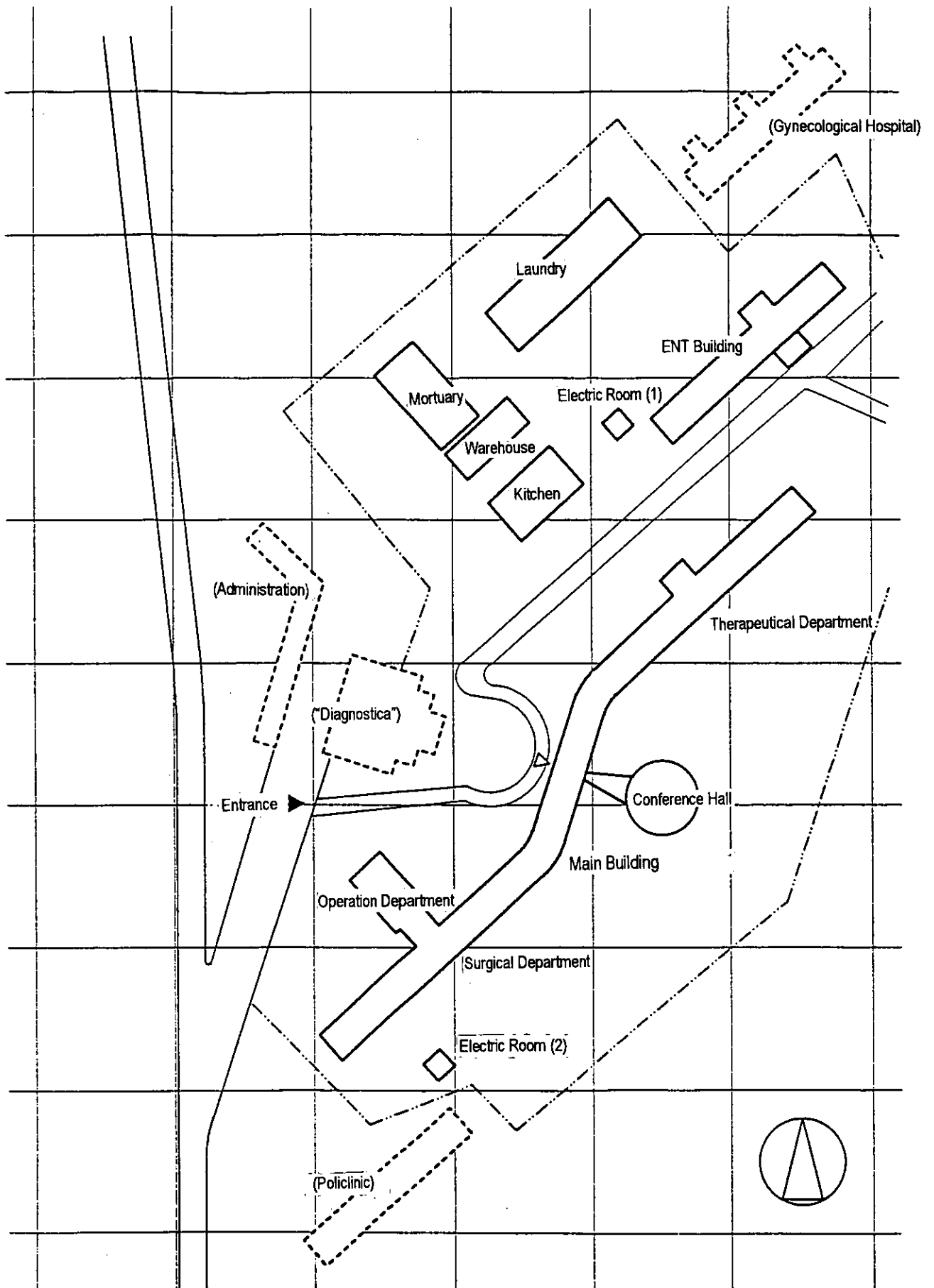


Fig.2-1 Layout Plan of Republic Medical Center "Armenia" 0 50m 100m

	Therapeutical Dept	Central Area	Surgical Dept	Operation Room	Remarks
6 th fl.	Pulmonology Dept	X-ray Dept	1st Surgical Dept	5 Operation Rooms	
5 th fl.	Endocrinology Dept	Toxicology Dept ICU (16 beds)	2nd Surgical Dept	3 Operation Rooms (unused at present)	
4 th fl.	Nephrology Dept	Hemodialysis Dept Hyperbaric Oxygenation Dept	Urology Dept	3 Operation Rooms 2 X-ray Rooms (1 room is unused at present)	
3 rd fl.	Cardiology Dept CCU (12 beds)	Administration Dental Dept	Vascular Surgery Dept	3 Operation Rooms (1 room is unused at present)	
2 nd fl.	Gastroenterology Dept Physiotherapy Dept	Admission	Neurosurgery Dept Traumatology Dept	2 Operation Rooms Angiographic room	
1 st fl.	Diagnostic Center	Hall	Neurology Dept	Central Sterilization Room Telephone Circuit Room	Conference Hall
Base ment	Storehouse	Maintenance Dept	Storehouse	—	

Fig. 2-2 Floor Plan of Departments at Medical Center "Armenia"

(4) Necessary renovation work for installation

The renovation work necessary for installation of equipment is shown below. The Armenian side has confirmed and agreed to bear responsibility for the following work.

- 1) Radiological unit room on the 6th floor – Remodeling the room for installation of X-ray unit with;
 - installation of doors to carry equipment into the room ($W \geq 1,200\text{mm}$, with X-ray protection)
 - installation of partition wall and doors (partly with X-ray protection)
 - installation of control window ($W800 \times H600\text{mm}$, with X-ray protection) etc.
- 2) Angiographic room on the 2nd floor - Remodeling the room for installation of X-ray unit with;
 - widening control window ($W800 \times H600\text{mm}$, with X-ray protection)
 - renovation of floor, etc.
- 3) Steam sterilization room on the 1st floor - Remodeling the room for installation of new steam sterilizers with;
 - widening doors for installation of equipment ($W \geq 1,200\text{mm}$)
 - removal of the existing sterilizers, etc.

Chapter 3

Implementation Plan

Chapter 3 Implementation Plan

3-1 Implementation Plan

3-1-1 Implementation Concept

The project will be carried out after the signing of the Exchange of Notes (E/N) by the two governments concerned in accordance with Japan's Grant Aid Scheme.

- 1) After signing of the E/N, the entire scope of the Project from design to installation should be completed smoothly and promptly. Therefore, plans involving work and personnel plan should be formulated so that each stage of the Project can be executed efficiently and effectively.
- 2) To ensure smooth execution of the Project, meeting and discussion about plan's details should be held between representatives from the relevant organizations of the Armenian government (e.g. the Ministry of Health and Ministry of Foreign Affairs), staff of the Republic Medical Center "Armenia", consultant and supplier of the equipment.

After the project is approved by the governments of both countries involved and the Exchange of Notes is concluded, a Japanese consulting firm will oversee the plan's execution as well as actual procurement of the equipment. Also, a supplier of the equipment will be determined on the basis of open tender as specified in the Exchange of Notes, and this supplier will be responsible for procurement and installation of the equipment. Party responsible for the implementation of the Project, consultant and suppliers of the equipment are as follows.

(1) Party responsible for the implementation of the Project

The responsible party of the Armenian Government is the Ministry of Health. The Ministry of Health will act as the contracting party of the Armenian Government, and shall be responsible for implementing the Project. The Ministry of Health is required to cooperate in regard to the appointment of the responsible persons concerned for the Republic Medical Center "Armenia" and work necessary for unpacking, delivery, and assembly/trial run of the equipment. The Ministry of Health and the Ministry of Finance and Economy shall be responsible for customs clearance, internal transportation, and so forth.

(2) Consultant

Following the signing of the E/N between two governments concerned, the Ministry of Health shall sign a consultant agreement with a Japanese consulting firm for the detailed

design of the equipment to be procured. The work will also be associated with supervision of project implementation and equipment procurement. The agreement will be verified by the Japanese Government. The consultant shall be responsible for implementation of the following work under the agreement:

1) Detailed design phase

The final confirmation of the Project, reviewing the equipment specifications, preparation of tender documents, supervision of tender procedure, and evaluation of the contents of the tender.

2) Implementation phase

Supervision of project implementation including control of the work schedule, inspections of equipment, supervision of transportation, supervision of installation work, and issuance of certificates.

(3) Suppliers of the equipment

Based on the E/N and in accordance with the "Guidelines for Procurement" under Japan's Grant Aid Scheme, the Ministry of Health shall sign a procurement agreement with Japanese national suppliers that shall be determined on the basis of open tenders on the equipment to be provided. The agreement shall be verified subject to the approval of the Japanese Government. The suppliers shall implement the following tasks under the agreement:

- Procurement, transport, and delivery of the equipment
- Installation of the equipment, and technical guidance concerning operation, maintenance, and repair.

3-1-2 Implementation Conditions

All possible measures shall be taken to ensure the implementation and a complete procedure for installation, which will conduct the quick and efficient completion of the procurement, transport, delivery, and installation of the equipment. Consultations with officials concerned are essential prior to customs clearance, internal transportation, and removal of old equipment, route for carrying them in, etc.

3-1-3 Scope of Work

The work provided for the Project by the Armenian side and covered by Japan's Grant Aid is described below.

1) Work to be carried out by the Armenian side

- Removal of existing equipment
- Connection of utilities such as electricity, water supply, drainage, etc. at the designed points for the equipment to be procured.
- Preparation of storage area for the equipment to be procured until the time of installation
- Preparation of the route for carrying the equipment to the room from the storage area
- Modification of the rooms (Radiological unit room, angiographic room, sterilization room)

2) Work to be covered by Japan's Grant Aid

- Procurement of the equipment
- Transport of the equipment to be procured to the Medical Center "Armenia"
- Delivery, installation, and trial run of the equipment to be procured
- Technical transfer on operation and maintenance of the equipment to be procured

3-1-4 Consultant Supervision

A Japanese consulting firm shall provide fair guidance, advice, and coordination throughout the detailed design phase and implementation phase of the Project. Furthermore, this consulting firm shall do whatever is necessary in order to ensure the smooth implementation of the Project in accordance with the Japan's Grant Aid Scheme and the Basic Design Report. The consultant will be deemed to have completed its work when the equipment is completely installed, it is confirmed that all conditions of the contract have been met, the official delivery of the equipment is witnessed, and the approval of the Armenian government is obtained.

(1) Framework of implementation supervision

- 1) Management of the completion dates for installation, maintaining close contact among all parties concerned.
- 2) Supervision of installation work
- 3) Suggestion for maintenance after the official delivery of equipment

(2) Personnel plan

The consultants required for the supervision of detailed design and implementation shall be as follows:

1) Project Manager One (1)

This project manager shall be responsible for the comprehensive supervision of work

2) Equipment planner One (1)

This person shall be responsible for the confirmation of the equipment specification, the preparation of tender documents, the estimation of project costs and evaluation of the contents of the tender.

3) Procurement supervisor One (1)

This person shall be responsible for the supervision of procurement and installation.

3-1-5 Procurement Plan

(1) Procurement of the equipment

Following the official delivery of the equipment, the Medical Center “Armenia” shall be promptly provided with technical service, spare parts, and consumables at a reasonable price. However the number of Japanese, European and American manufacturers with distributors and agents in Armenia is limited. As a result, equipment should be procured from Japanese, American or European companies that have distributors or agents in Armenia or neighboring countries (Georgia, Russia etc.).

(2) Inland transportation

The goods are to be unloaded at the port of Poti in Georgia and transported over-land across Georgia to Erevan in Armenia containerized in trucks or by rail. Taking into account the comprehensive facilities of Poti port and the conditions of the roads, this is thought to be the best route in terms of safety and delivery dates.

(3) Plan of the dispatch of engineer

Personnel, including laborers required for the installation of equipment, shall be secured in the vicinity of the Medical Center “Armenia”, in principle, while engineers shall be dispatched from Japan and other countries to supply equipment requiring special skills and techniques. The procedure for test runs and adjustment of the equipment will be planned to allow enough time for technical transfer to the doctors and engineers concerned at the Medical Center “Armenia”.

3-1-6 Implementation Schedule

When the time arrives for the Project to be carried out, the consulting firm will investigate the specifications of the equipment. Then, the supplier of the equipment, who

will be decided through open tender, will procure the equipment. The Project implementation schedule is given in Table 3-1.

Table 3-1 Project Implementation Schedule

	1	2	3	4	5	6	7	8	9	10	11	12
Detailed Design												
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <p> Works in Japan Works in Armenia </p> </div>											
	(Total 3.70months)											
	(Total 7.80 months)											

3-1-7 Obligations of the Recipient Country

Ministry of Health of Armenia shall work the following in accordance with the Exchange of Notes (E/N), for the smooth implementation of the Project.

- 1) To exempt customs duties, internal taxes, commissions and other fiscal levies that may be imposed in Armenia with respect to the supply of the equipment and the provision of services under the verified contracts.
- 2) To ensure prompt customs clearance in Armenia and a procedure for internal transportation therein of the medical equipment brought from Japan and countries other than Japan and Armenia.
- 3) To provide Japanese nationals and engineers from countries other than Japan and Armenia working on the Project with every convenience to facilitate their entry into Armenia and their stay therein.
- 4) To ensure permits required by the laws of Armenia for the implementation of the Project, and other permits, including tax exemption.
- 5) To ensure that the equipment procured under this Project is maintained and used properly and effectively.

- 6) To confirm that Armenian side bears all the expenses other than those covered by the Japanese government.

3-2 Project Cost Estimation

3-2-1 Condition of Cost Estimation

Estimated as of : March 2000

Exchange rate : US\$1.00=109.13 YEN

: AMD1.00=US\$0.00187 (1999.7-1999.12)

US\$:US dollar, AMD: Armenian dram

Implementation schedule: Refer to Table 3-1.

Others: The Project shall be implemented in accordance with Japan's Grant Aid Scheme.

3-2-2 Expense Borne by the Recipient Country

The Project is intended primarily to replace obsolete equipment. The installation site is nearly prepared, and basic conditions for the installation of utilities such as electricity, water supply, and drainage have been met. However, the below mentioned works are borne by the Armenian side.

Table 3-4 Contents of Expense Borne by the Armenian Side

No.	Place	Contents of works	Amount
1	Radiological unit room on the 6 th floor	Modification of the room for installation of X-ray units with; - making doors for carrying equipment to the room (W \geq 1,200mm, with X-ray protection) - making partition wall and doors (partly with X-ray protection) - making a control window (W800 x H600mm, with X-ray protection), etc.	AMD1,478,600 (US\$2,765)
2	Angiographic room on the 2 nd floor	Modification of the room for installation of X-ray units with; - widening control window (W800 x H600mm, with X-ray protection) - renovation of floor, etc.	AMD444,400 (US\$831)
3	Steam sterilization room on the 1 st floor	Modification of the room for installation of large steam sterilizers with; - widening doors for carrying equipment to the room (W \geq 1,200mm) - removal of the existing equipment, etc.	AMD1,171,600 (US\$2,191)
Total			AMD3,094,600 (US\$5,787)

Exchange Rate: US\$1=AMD534.76 (average of 6 months – from July to December 1999)

3-3 Operational Management and Maintenance Costs

The doctors, technicians, nurses and all the medical staff at Medical Center "Armenia" all possess high technical ability with which to ably use the equipment supplied in this Project; thus new employment to complement the procurement of equipment is unnecessary. On the side of hospital management, unpaid medical fees by the State is commonplace, delays in wage payments are chronic and amidst all this, the employees are battling daily to keep the medical services up and running. Considering the tough position the Medical Center "Armenia" is in due to desperate government state finances, the government is also preparing a feasible back-up system giving priority to the supply of electricity and water to the center in order to prevent power cuts and suspension of the water supply.

New costs will arise from operational management and maintenance of apparatus supplied through this Project. Table 3-5~3-7 shows these expenses and other details by material type in each category.

Table3-5 Checkup and Repair

Department/Equipment	Item	Approximate estimate
Radiology/Angiographic room		
Remote control fluoroscopic X-ray unit	Periodical checkup and repair	US\$10,996 per year (incl. all X-ray units)
Basic X-ray unit	Periodical checkup and repair	

Table 3-6 Spare Parts

Department/Equipment	Item	Approximate estimate
Radiology/Angiographic room		
Remote control fluoroscopic X-ray unit	X-ray tube	US\$13,745 for 1 unit every 5 years
Basic X-ray unit	X-ray tube	US\$9,163 for 1 unit every 5 years
Biochemical, Serologic and Express Lab.		
Blood gas analyzer	Electrode, etc.	US\$5,681 for 1 unit every 2 years
Ion-selective electrolyte analyzer	Electrode, etc.	US\$5,498 for 1 unit every 2 years

Table 3-7 Consumable Goods (2001 year)

Department/Equipment	Item	Approx. estimate per year
Radiology/Angiographic room		
Remote control fluoroscopic X-ray unit	Film	US\$16,494
Basic X-ray unit	Film	US\$10,996
Neurosurgery, Neurology and Psychiatry		
Digital electroencephalograph	Electrode, gel	US\$458
Analog electroencephalograph	Electrode, gel, recording paper	US\$3,006
Complete EMG/NCV/EP/ENG system	Electrode, gel, recording paper	US\$2,502
Vessel surgery, Cardiology and Pulmonology		
US scanner	Printer paper, gel	US\$8,247
ECG	Electrode, gel, recording paper	US\$458
Monitoring system	Electrode, gel, recording paper	US\$4,179
Urology, Surgery, Gastroenterology and Endocrinology		
Light source for endoscope	Bulb	US\$458
Operation light	Bulb	US\$412
Biochemical, Serologic and Express Lab.		
Biochemical compact system	Reagents, etc	US\$1,063
Biochemical analyzer	Reagents, etc	US\$9,301
Automated hematology analyzer	Reagents, etc	US\$16,750
Microtiter plate reader ELIZA	Reagents, etc	US\$6,139
Blood gas analyzer	Reagents, etc	US\$2,474
Ion-selective electrolyte analyzer	Reagents, etc	US\$14,112
Automatic electrophoresis system	Reagents, etc	US\$3,610
Urine analyzer	Reagents, etc	US\$8,192
Hemodialysis		
Hemodialysis Machine	Dialysis set	US\$4,701
Total		US\$113,552

Under this Project notice has been taken of the harsh financial situation of both Armenia and the Medical Center "Armenia". In response, when putting together the full complement of materials, equipment with standard specifications and requiring low operational management and maintenance costs were made central to the supply of equipment. The Armenian side also understands and acknowledges that the costs as in Table 3-5~3-7 will arise.

Chapter 4

Project Evaluation and Recommendation

Chapter 4 Project Evaluation and Recommendation

4-1 Project Effect

(1) Contributions to the priority plan “Mid-term plan for state health care reform” and the “Optimization plan”

With the provision of appropriate medical equipment, this project will take big steps towards achieving the main objectives stated in the priority plan, “Mid-term plan for state health care reform”, namely “Equipment with suitable medical apparatus” and “Consolidation of medical services”. Furthermore, the implementation of this project will contribute to achieve the objective of the “Optimization Plan” – “offering high quality medical services at well-equipped medical facilities”.

(2) Balanced Development of a state health care system

The support proffered by the World Bank and the World Health Organization etc. focuses on technical cooperation, system reform and policy making with emphasis on primary health care. Thus, this project aims to achieve one of the important goals of needy Armenia’s reform plans, albeit tough financially, namely the provision of medical apparatus. If this project can take on this task which international institutions cannot cope with, it will enable a more balanced development of the country’s health care system. The World Bank and World Health Organization too have high expectations of Japan’s grant assistance.

(3) Improvement of medical equipment and Promotion of Armenian public health

Equipping the Medical Center “Armenia” with suitable diagnosis and treatment facilities for a tertiary medical institution through the procurement of medical equipment, mainly renewal of existing apparatus under this Project increases people’s chances to access public medical treatment. The Medical Center predicts an increase in patient from 10,000 in 1999 to 14,000 in 2003 through the implementation of this project. Expanding the range of diseases capable to treat and improving the quality of examinations and treatment should likewise promote the health of the nation. This will in turn facilitate earlier diagnosis and treatment of adult illnesses (such as malignant tumors, high blood pressure and diabetes) which are on the increase in Armenia.

(4) Contributing to a more sound check-up and treatment system and better management at the Medical Center “Armenia”

Ensuring high quality check-ups and treatment at the Medical Center “Armenia”, Armenia’s pivotal medical institution, would allow better hospital management, financially independent from the cash-strapped state and enable the center’s function as Armenia’s tertiary medical institution to return to normalcy.

(5) Restoring confidence in public medical treatment

Promotion of public health will restore confidence in the public health system and will also facilitate the introduction of the medical insurance system which requires the consent and understanding of the public.

4-2 Tasks

(1) Effective application of equipment and realization of hospital functions

This project will equip the Medical Center “Armenia” with the absolute minimum apparatus necessary to carry out treatment as a tertiary medical facility. However, over and above this, further administration and adjustments to the entire medical treatment system are called for plus the strengthening of cooperation and ties between departments so that hospital apparatus can be put to use effectively and the center’s function as a hospital can be sufficiently demonstrated. Achieving this will not only boost the communal use of operating instruments, X-ray and clinical examination apparatus etc., but the exchange of information and opinions between departments will also enhance both the maintenance operations and scope of application of apparatus, and improve consultation skills.

The apparatus to be introduced on this Project is, for the main part, the minimum required basic equipment for treating patients. However, as the “Optimization plan” for medical facilities progresses, it is anticipated that the Medical Center “Armenia” will, in the future too, be able to take on the role and function of a tertiary medical facility and top quality medical services will be demanded. It is important that the center can use its own initiative hereafter to improve its medical equipment.

(2) Improving efficiency and quality of medical services under “Optimization plan”

Since the Medical Center “Armenia” is a subject of “Optimization plan” which propels Armenia’s medical sector forward, the Center must enforce both cuts to beds and medical

employees and a better and wider range of medical activities that emphasizes practical use of procured equipment. In other words, the hospital must improve the efficiency and quality of medical services. As well as appropriately distributing management resources, it is vital to set up an incentive structure for medical employees in order to seek out improvements to services. Moreover, all employees, beginning with the doctors themselves, must undergo self-evaluation and raise awareness of their working conditions. Thus can each person help to improve the quality of medical health services by strengthening their individual skills.

(3) Hospital management at work

The mission of the Medical Center “Armenia” is to act as a tertiary medical institution able to cope with state-paid consultations for the socially deprived and with patients referred from all over Armenia. Yet, the hospital must also look into the possibility of earning income from new services such as fee-based consultations in order not only to meet the costs of apparatus maintenance and consumable goods, but sustain medical practice. The hospital should not pursue profit maximization to the detriment of its original function as a tertiary medical facility. What is called for is diversification and expansion of revenues through active business development using the ideas and balanced sense of managers, and improved service of the employees.

Appendices

Appendices-1 Member List of the Study Team

(1) Field Survey

1	Toshiyuki IWAMA	Leader	Grant Aid Project Management Department, Japan International Cooperation Agency
2	Minoru AKIYAMA	Technical Adviser	International Medical Center of Japan Ministry of Health and Welfare
3	Ryonosuke GOTO	Project Manager	CRC Overseas Cooperation Inc.
4	Yoshiharu HIGUCHI	Equipment Planner	CRC Overseas Cooperation Inc.
5	Hideaki KANAYAMA	Facilities and Utilities Planner	CRC Overseas Cooperation Inc.
6	Tadashi YOSHITUGU	Cost and Procurement Planner	CRC Overseas Cooperation Inc.
7	Yoko NOZAWA	Interpreter	CRC Overseas Cooperation Inc.

(2) Explanation of Draft Report

1	Minoru AKIYAMA	Leader	International Medical Center of Japan Ministry of Health and Welfare
2	Masakatsu KOMORI	Coordinator	Grant Aid Project Management Department, Japan International Cooperation Agency
3	Ryonosuke GOTO	Project Manager	CRC Overseas Cooperation Inc.
4	Yoshiharu HIGUCHI	Equipment Planner	CRC Overseas Cooperation Inc.
5	Yoko NOZAWA	Interpreter	CRC Overseas Cooperation Inc.

Appendix-2 Study Schedule

(1) Field Survey

Date	Movement	Accommodation	Activities
Aug.16 (Mon.)	Narita - Zurich ^{(A) (B)}		Move to Armenia ^{(A) (B)}
Aug.17 (Tue.)	Yerevan ^{(A) (B)}	Yerevan	Arrival in Armenia ^{(A) (B)} Courtesy call on the MOH, MOFA ^{(A) (B)}
Aug.18 (Wed.)		- do -	Site Survey
Aug.19 (Thu.)		- do -	- do -
Aug.20 (Fri.)		- do -	- do -
Aug.21 (Sat.)		- do -	Meeting within the Study Team
Aug.22 (Sun.)		- do -	- do -
Aug.23 (Mon.)	Narita - Zurich ^(*)	- do -	Move to Armenia ^(*) Site Survey ^{(A) (B)}
Aug.24 (Tue.)	Yerevan ^(*)	- do -	Arrival in Armenia ^(*) Courtesy call on the MOH, MOFA ^(*) Site Survey ^{(A) (B)}
Aug.25 (Wed.)		- do -	Site Survey
Aug.26 (Thu.)		- do -	- do -
Aug.27 (Fri.)		- do -	- do -
Aug.28 (Sat.)		- do -	Meeting within the Study Team
Aug.29 (Sun.)		- do -	- do -
Aug.30 (Mon.)		- do -	Discussion of M/D Signing of M/D
Aug.31 (Tue.)	Yerevan - Moscow ^(*)	Moscow ^(*) Yerevan ^{(A) (B)}	Move to Moscow ^(*) Site Survey ^{(A) (B)}
Sep. 01 (Wed.)	Moscow ^(*)	Yerevan ^{(A) (B)}	Visit the Embassy of Japan in Moscow ^(*) (Report on the field survey in Armenia) ^(*) Site Survey ^{(A) (B)}
Sep. 02 (Thu.)	- Narita ^(*)	Yerevan	Arrival in Japan ^(*) Site Survey ^{(A) (B)}
Sep. 03 (Fri.)	Yerevan - Moscow ^(B)	Yerevan ^(A)	Move to Moscow ^(B) Site Survey ^(A)
Sep. 04 (Sat.)	- Narita ^(B)	- do -	Arrival in Japan ^(B) Meeting within the Study Team ^(A)
Sep. 05 (Sun)		- do -	Meeting within the Study Team ^(A)
Sep.06-09 (Mon.-Thu.)		- do -	Site Survey ^(A)
Sep. 10 (Fri.)		- do -	Report on the field survey in Armenia
Sep. 11 (Sat)		- do -	Meeting within the Study Team
Sep. 12 (Sun)	Yerevan - Moscow ^(A)	Moscow	Move to Moscow ^(A)
Sep. 13 (Mon.)	Moscow ^(A)		Move to Japan ^(A)
Sep. 14 (Tue.)	- Narita ^(A)		Arrival in Japan ^(A)

(*) Official Team (Leader, Technical Adviser, Coordinator)

(A) Consultant (Project Manager, Equipment Planner, Interpreter)

(B) Consultant (Facility Planner, Cost Planner)

MOH : Ministry of Health

MOFA : Ministry of Foreign Affairs

M/D : Minutes of Discussion

(2) Explanation of Draft Report

Date	Movement	Accommodation	Activities
Nov.28 (Sun.)	Narita - Moscow	Moscow	Move to Moscow
Nov.29 (Mon.)	Moscow - Yerevan	Yerevan	Move to Armenia
Nov.30 (Tue.)		- do -	Courtesy call on the MOH, MOFA
Dec.1 (Wed.)		- do -	Site Survey
Dec.2 (Thu.)		- do -	- do -
Dec.3 (Fri.)		- do -	Signing of M/D ^(A) Site Survey ^(B)
Dec.4 (Sat.)		- do -	Meeting within the Study Team
Dec.5 (Sun.)	Erevan - Moscow ^(A)	Moscow ^(A) Yerevan ^(B)	Move to Moscow ^(A) Meeting within Study Team ^(B)
Dec.6 (Mon.)	Moscow ^(A) -	Yerevan ^(B) - -	Visit the Embassy of Japan in Moscow ^(A) Move to Japan ^(A) Site Survey ^(B)
Dec.7 (Tue.)	- Narita ^(A)	- do -	Arrival in Japan ^(A) Site Survey ^(B)
Dec.8 (Wed.)		- do -	Site Survey ^(B)
Dec.9 (Thu.)		- do -	- do -
Dec.10 (Fri.)		- do -	- do -
Dec.11 (Sat.)		- do -	- do -
Dec.12 (Sun.)		- do -	Meeting within the Study Team ^(B)
Dec.13 (Mon.)		- do -	Site Survey ^(B)
Dec.14 (Tue.)		- do -	- do -
Dec.15 (Wed.)		- do -	- do -
Dec.16 (Thu.)	Yerevan - Moscow ^(B)	Moscow ^(B)	Move to Moscow ^(B)
Dec.17 (Fri.)	Moscow ^(B) -		Visit the Embassy of Japan in Moscow ^(B) Move to Japan ^(B)
Dec.18 (Sat.)	- Narita ^(B)		Arrival in Japan ^(B)

^(A) Official Team (Leader, Technical Adviser, Coordinator)

^(B) Consultant (Project Manager, Equipment Planner, Interpreter)

MOH : Ministry of Health

MOFA : Ministry of Foreign Affairs

M/D : Minutes of Discussion

Appendices-3 List of Party Concerned in the Recipient Country

Position & Specification	Name
Ministry of Health	
Deputy Minister	Dr. AVAGYAN Sevak
Director, Department of International Relations	Dr. GRIGORYAN Haik
Director, Department of Primary Health Care	Dr. YUZBASHAN Rozanne
Director, General Department of Provisions	Mr. HAKOBYAN Tatur
Deputy Head, Department of Specialized Health Care	Dr. SARKISSYAN Armen
Deputy Head, Department of Economy and Law	Mr. GRIGORYAN Andranik
Chief Expert, Health Policy & Development Program	Dr. KHOJABEKYAN Marine
Leading Specialist, Department of International Relations	Ms. AGHEKIAN Louisa
Chief Specialist of Medical Equipment	Mr. KHACHATRYAN Samvel
Chief Accountant	Ms. TATEVOSYAN Gayane
Ministry of Foreign Affairs	
Deputy Minister	Mr. MARTIROSYAN Armen
Head of North-East Asia Countries Division	Mr. VARDANIAN Michael
Second Secretary of Asia-Pacific & Africa Division	Mr. ABOVIAN Yervand
Ministry of Finance	
Head of Grant & Loan Division	Mr. JILAVYAN Vahe
State Health Agency	
Deputy Head	Dr. TER-GRIGIRYAN Ara
Medical Center "Armenia"	
President	Dr. GRIGORYAN Gari
Deputy Director, Diagnostic Department	Dr. KHACHOUNTS Alexander
Deputy Director, Financial Department	Mr. KARAPETYAN Grant
Deputy Director, Maintenance Department	Mr. HARGTUNIAN Targsh
Director, Diagnostic Department	Dr. ELOYAN Mihran
MD, Department of General Surgery, Junior surgeon, junior faculty	Dr. SARGSYAN David
MD, Chief of Laboratory for Alternative Medicine	Dr. GASPARYAN Levon
Chief, X-ray Department	Dr. CARAPETIAN Carina
Chief, Urological Department / Chief of urological clinic of Yerevan State Medical university	Dr. ZOHABIAN Yuri
MD (Sonography)	Dr. TORGOMORIC Yuri
MD (Anesthesiologist)	Dr. AMBARTSUMYAN Shavarsh
MD (Anesthesiologist)	Dr. MIKAERIAV Serob
MD (Anesthesiologist)	Dr. HAMBARDZUMIYAN Shavarsh

Position & Specification	Name
MD (Anesthesiologist)	Dr. YEROYAN Hoohanves
Chief Nurse, Diagnostic Department	Ms. AYURUMOBA Irma
Chief Engineer	Mr. ALEKSANYAN Akop
Chief Accountant	Mr. DASHAN Grisha
Chief of Laundry	Ms. AKHYTARYAN Jurietta
Armenian Public Health Union	
Executive Director	Dr. MARGARYANTS Hovhannes
“Diagnostica”	
Director	Dr. CHUBANYAN Naira
Republican Polyclinic	
MD (Urologist-Phitoterapist)	Dr. SHINDJIAN Marseel
World Bank	
Head, World Bank Project Management Unit	Dr. HAYRAPETUTYAN Susanna
WHO	
National Professional Officer WHO Liaison Office, Armenia	Dr. ASLANIAN Hrair Tsolak
AGENT	
Armedservice LTD	
Director	Mr. ARASEFERYAN Yuri
Technical Director	Mr. KRTUMYAN Vladimir
VIOLA Blood Center & Diagnostics	
General Manager,	Mr. MEZHLUMYAN Armen
“DIASERV”LTD	
President	Mr. HAROUTUNYAN Khachik
MEDITECH	
Director	Mr. KHACHATRYAN Anoushavan
OLYMPUS Moscow	
General Director	Mr. KADOYA Izumi
Chief Manager	Mr. KARPOVA Svetlana
Special Projects Manager	Mr. GORSHUNOV Timur
Fresenius Medical Care	
Representative in Armenia	Mr. PIVAZJAN Varazdat
Transportation	

Position & Specification	Name
ARMENTRANSFORWARDER LTD	
Chairman	Mr. SUMBATYAN Meruzhan
Deputy	Mr. SUMBATYAN Sergei
Others	
National Foundation of Science and Advanced Technologies	
Executive Director	Mr. TOPUZYAN Vigen
Director	Mr. KARAPETYAN Harutyun
Construction Company "SASUN95"	
Chief of building	Mr. CHROYAN Grant
Insurance Company "ARINMED"	
President	Mr. TSATURYAN Saro
Embassy of Japan, Russia	
Second Secretary	Mr. ONUKI Kazutoshi
Third Secretary	Ms. KAWAGISHI Yukiko

Appendices-4 Minutes of Discussion

**MINUTES OF DISCUSSION
ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR IMPROVEMENT
OF MEDICAL EQUIPMENT
FOR REPUBLIC MEDICAL CENTER "ARMENIA"**

In June/July 1998 JICA conducted a Preparatory Study in response to a request from the Government of the Republic of Armenia (hereinafter referred to as "the Armenia") on the Project for Improvement of Medical Equipment for the Republic Medical Center "Armenia" (hereinafter referred to as the "Project"). Through analysis of the results of the Preparatory Study the Government of Japan decided to conduct a Basic Design Study and entrusted it to the Japan International Cooperation Agency (JICA).

JICA sends to the Armenia the Basic Design Study Team (hereinafter referred to as the "Team") which is headed by Mr. Toshiyuki Iwama, Deputy Director of the Second Project Management Division, Grant Aid Project Management Department, JICA, and is scheduled to stay in the country from August 17 to September 12, 1999.

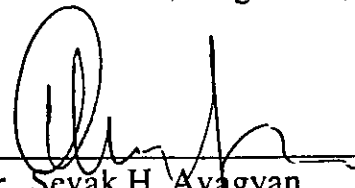
The Team held discussions with the officials concerned of the Government of the Armenia and conducted site surveys.

In the course of the discussions and site surveys, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

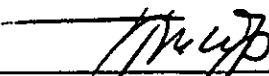
Yerevan, August 30, 1999



Mr. Toshiyuki Iwama
Leader,
Basic Design Study Team, JICA



Dr. Sevak H. Avagyan
Deputy Minister of Health
Republic of Armenia



Dr. Gari Grigorian
Director,
Republic Medical Center "Armenia"

ATTACHMENT

1. Objective

The objective of the Project is to improve the Medical Services to patients at the Republic Medical Center "Armenia" through procurement of medical equipment.

2. Project Sites

The site of the Project is the Republic Medical Center "Armenia" located in Yerevan, the Armenia.

3. Responsible and Executing Organization

(1)The responsible agency is Ministry of Health.

(2)The implementing agency is the Republic Medical Center "Armenia"

4. Items Requested by the Government of the Armenia

After discussions with the Team, items listed in Annex 1 are finally requested by the Government of the Armenia. JICA will further assess the appropriateness of the request in Japan to prepare a draft report.

5. Japan's Grant Aid System

The Government of Armenia understands Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Armenia as described in Annex 2 and Annex 3 respectively, which are explained during the Preparatory Study and again by the Team to ensure smooth implementation of the Project.

6. Schedule of the Study

6-1. The consultant members of the Team will proceed to further studies in Armenia until September 12, 1999.

6-2. JICA will prepare a draft report in English and dispatch a mission in order to explain its contents around December 1999.

6-3. If the contents of the draft report are accepted in principle by the Government of the Armenia, JICA will complete the final report and send it to the Government of the Armenia around March 2000.

7. Other Relevant Issues

7-1. Detailed information on the Project such as list of planned equipment, its specification, expected procurement schedule etc. is confidential and should not be released to outside parties. Violation of confidentiality could be considered as a misprocurement.

7-2. Equipment provided by the Grant Aid will have a guarantee period of one year. Thereafter, it is subject to maintenance by the recipient.

Equipment List by Priorities

Annex 1

Item No.	Equipment	Priority and Qty.		
		A	B	C
Radiology				
A-01	Magnetic Resonance Imaging System			1
A-02	Angiographic X-ray System			1
A-03	Remote Control Fluoroscopy X-ray System	2		
A-04	Basic X-ray System	2		
A-05	C-arm X-ray System	1		
A-06	X-ray film Processor	2		
Neurosurgical, Neurology and Psychiatry				
B-01	Electroencephalograph Digital	1		
B-02	Electroencephalograph Analog	1		
B-03	Echoencephalograph			3
B-04	Complete EMG/NCV/EP/ENG	1		
B-05	4ch. Dopplerography System			1
B-06	Stereo Fundus Camera	1		
B-07	Trial Lens Set	3		1
B-08	Magnetic Stimulator			1
B-09	Halogen Ophthalmoscope	2		
B-10	Computer Color Perimeter	1		
B-11	Pen Light	15		
B-12	Percussion Hammer, Ohnuki Type	5		10
B-13	Percussion Hammer, Tyler Type	5		10
B-14	Air Pressure Skull Operation Set	1		
B-15	Micro-Neuro Surgery Operation Table	1		
B-16	Surgical Aneurysm Clips Set			1
B-17	Yamada-Sata Lumbar Puncture Instrument Set	1		1
B-18	Instrument Set for Carotid Arterial Endarterectomy	1		
B-19	Bipolar Coagulator Unit	1		
B-20	Neurosurgery Instrument Set	1		
B-21	Microvascular Surgical Instrument Set	1		
B-22	Laminectomy Operating Set	1		
B-23	Hemilaminectomy Retractor	1		
B-24	Laminectomy Retractor	1		
B-25	Cervical Operating Set	1		
B-26	Laminectomy Rongeur	1		
B-27	Spinal Retractor	1		
B-28	Spinal Cord Traction Frame	1		
B-29	Manual Dermatome	1		
B-30	Standard Plastic Surgery Set	1		
B-31	Electric Traction	2		
B-32	Digital Thermometer			2
B-33	High Voltage Brain Cortex Stimulator			1
Vessel Surgery, Cardiology and Pulmonology				
C-01	U-S Scanner	1		
C-02	U-S Scanner with Color Doppler	1		
C-03	Doppler Stethoscope		3	2
C-04	Test Laboratory for Respiration System			1
C-05	Spirometer	2		
C-06	Exercise Testing System	1		
C-07	Bronchofiberscope with Accessory	2		
C-08	Electrocardiograph	2		
C-09	Syringe Infusion Pump	6		
C-10	Mapping System			1
C-11	Medical Infrared Thermography System			1
C-12	ECG Analysis System (Holter ECG)	1		1
C-13	Bedside Monitor	4		2
C-14	Defibrillator	2		
C-15	Monitoring System for 6 Patients	1		

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Equipment List by Priorities

Annex I

C-16	Pneumo Massager	2		2
C-17	Non-invasive Vascular Laboratory			1
C-18	Pulse Oximeter	4		1
C-19	Measuring Rod	2		2
C-20	Automatic Weighing Scale	3		3
C-21	Instrument Cabinet	2		2
C-22	Stethoscope	2		
C-23	Sphygmomanometer Mercurial	4		
C-24	Sphygmomanometer Automatic	4		
C-25	Sphygmomanometer Manual			4
C-26	Sphygmomanometer Electronic			4
C-27	Automatic Blood Collecting Scale Hemoscale			2
C-28	Venotomy Instrument Set in Metal Case	1		1
C-29	Rhinoscreen			1
C-30	Multi Component System			2
C-31	Binocular Operating Microscope	1		
Urology, Surgery, Gastroenterology and Endocrinology				
D-01	U-S Scanner	1		
D-02	Portable U-S Scanner	2		
D-03	Gastrointestinal Fiberscope	2		
D-04	Duodenofiberscope	2		
D-05	Colonofiberscope	2		
D-06	Lecturescope	1		1
D-07	Light Source for Endoscope (2 Halogen, 1 Xenon)	3		
D-08	Electro Surgical Unit	2		
D-09	Endoscopic TV System	3		
D-10	Endoscopic Suction Unit	3		1
D-11	Video System for Endoscope	1		
D-12	Manual Disinfecting Unit for Endoscope	2		
D-13	Operating Laparoscope set with instrument two sets	1		
D-14	Endoscopic Table	3		1
D-15	Endoscopic Cabinet	3		1
D-16	High Pressure Steam Sterilizer, Large	2		
D-17	Hot Air Sterilizer, Large	1		
D-18	Electro Surgical Unit, Portable	2		1
D-19	Sliding Stretcher	3		
D-20	Recovery Stretcher	6		
D-21	Operating Instrument Set in Metal Case	1		
D-22	Small Operating Instrument Set in Metal Case	1		
D-23	Gastrectomy Instrument Set in Metal Case	1		
D-24	Cholecystotomy Instrument Set in Metal Case	1		
D-25	Thyroidotomy Instrument Set in Metal Case	1		
D-26	Emergency Tracheotomy Instrument Set in Metal Case	1		
D-27	Emergency Chest Operating Instrument Set in Metal Case	1		
D-28	Appendectomy Instrument Set in Metal Case	1		
D-29	Nephrectomy Instrument Set in Metal Case	1		
D-30	Prostatotomy Instrument Set in Metal Case	1		
D-31	Resectoscope Set	1		
D-32	Resectoscope Accessory Set	1		
D-33	Urological Examining & Treatment Table	1		
D-34	Examining Chair	1		
D-35	Transurethral Operating Table	1		
D-36	Universal Operating Table	2		2
D-37	Operating Table	1		
D-38	Operating Light, Major, 2 Heads	2		
D-39	Operating Light, Mobile	3		
D-40	High-Power Electric Suction Unit	2		1
D-41	Electric Suction Unit	2		1
D-42	Portable Suction Unit	2		1

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Equipment List by Priorities

D-43	Uroflowmeter			1
Otolaryngology				
E-01	Clinical Audiometer	2		1
E-02	Clinical Impedance Meter	2		1
E-03	Sinuscan			2
E-04	Diagnostic Set	3		2
E-05	Rhino-Laryngo Fiberscope	1		
E-06	Head Mirror	5		3
E-07	Lempert Head Mirror	5		3
E-08	Lucae Tuning Fork	5		
E-09	Lucae Tuning Fork	5		
E-10	Laryngo Stroboscope	1		
E-11	Binocular Operating Microscope	1		
Anesthesiology and Reanimation				
F-01	Ventilator	3		
F-02	Anesthesia Apparatus with Ventilator	4		
F-03	Laryngoscope with Lightsource	1		2
F-04	Oxygen Monitor	2		2
F-05	Endotracheal Set	3		3
F-06	Portable Pulse Oximeter	4		2
F-07	Bedside Monitor	4		
F-08	2-Crank Standard Bed	10		5
F-09	ICU Bed	6		
F-10	Stretcher Trolley	6		4
F-11	Instrument Table	3		3
F-12	Treatment Carriage	5		
F-13	Syringe Infusion Pump	6		
F-14	Ambulance			4
F-15	Nerve Stimulator	2		
F-16	Stand for Infusion	6		6
Laboratory				
G-01	Biochemical Compact System	1		1
G-02	Biochemical Analyzer	1		
G-03	Coagulation System	1		1
G-04	Blood Cell Counter	2		
G-05	Automated Analyzer for Immunoanalysis		1	
G-06	ELISA	1		
G-07	Co-Oxymeter			1
G-08	Blood Gas Analyzer	1		
G-09	Ion-Selective Electrolyte Analyzer	2		
G-10	Selective Clinical Chemistry Analyzer			1
G-11	Capillary Gas Chromatograph			1
G-12	System Liquid Chromatograph			1
G-13	Chromatopac Data Processor			1
G-14	Incubator	1		
G-15	Incubator, Low Temperature	1		
G-16	Incubator, CO2	1		
G-17	Anaerobic Incubator	1		
G-18	Hot Air Sterilizer (table top)	4		
G-19	Medical Refrigerator	2		
G-20	Blood Bank Refrigerator	2		
G-21	Electrophoresis System with Densitometer	1		
G-22	Electronic Analytical Balance	4		
G-23	pH Meter, Digital	2		
G-24	Universal Microscope	1		
G-25	Scopeman			2
G-26	Medicine Cabinet	2		1
G-27	Revolving Chair	2		3
G-28	Revolving Stool			3

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Equipment List by Priorities

Annex 1

G-29	Instrument Cabinet	2		
G-30	Clinical Chart File Cart			3
G-31	One-step Foot Stool			3
G-32	Automatic Photomicrograph System for Microscope	1		
G-33	Microscope	1		
G-34	Urine Analyzer	2		
G-35	High Pressure Steam Sterilizer, Small	1		
G-36	Deep Freezer	1		
G-37	Plasma Freezer	1		
Pathology				
H-01	Autopsy Table	1		
H-02	Morgue Cart	1		1
H-03	Automatic Tissue Processor	1		
H-04	Paraffin Oven	1		1
H-05	Large Sliding Microtome	1		
H-06	Universal Microscope	1		
H-07	Automatic Photomicrograph System for Microscope	1		
H-08	Cryomicrotome	1		
Dental				
I-01	Clinic Stool	4		
I-02	Dental Unit	3		
I-03	Ultrasonic Dental Scaler	1		
Hemodialysis				
J-01	Hemodialysis Machine	2		
J-02	Water Treatment System for 10 Hemodialysis Machine	1		
Laundry				
K-01	Washing and Drying Machine	2		
Pharmacy				
L-01	Electronic Analytical Balance	2		

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Japan's Grant Aid Program

1. Japan's Grant Aid Procedures

(1) The Japan's Grant Aid Program is executed by the following procedures.

Application (request made by a recipient country)

Study (Basic Design Study conducted by JICA)

Appraisal & Approval (appraisal by the Government of Japan and approval by the Cabinet of Japan)

Determination of Implementation (Exchange of Notes between both Governments)

Implementation (implementation of the Project)

(2) Firstly, an application or a request for a Grant Aid project submitted by the recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Japan's Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study Report prepared by JICA and the results are then submitted to the cabinet for approval.

Fourth, the project approved by the cabinet becomes official with the Exchange of Notes signed by the Government of Japan and the recipient country.

Finally, for the implementation of the Project, JICA assists the recipient country in preparing contracts and so on.

2. Contents of the Study

(1) Contents of the Study

The purpose of the Basic Design Study conducted by JICA on a requested project is to provide a basic document necessary for appraisal of the project by the Japanese Government. The contents of the Study are as follows:

a) confirmation of the background, objectives, benefits of the project and

- also institutional capacity of agencies concerned of the recipient country necessary for project implementation,
- b) evaluation of the appropriateness of the project for the Grant Aid Scheme from a technical, social and economical point of view,
 - c) confirmation of items agreed on by the both parties concerning a basic concept of the project,
 - d) preparation of a basic design of the project,
 - e) estimation of cost of the project.

The contents of the original request 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 Japan's Grant Aid Scheme.

Final project components are subject to approval by the Government of Japan and therefore may differ from an original request. Implementing the project, the Government of Japan requests the recipient country to take necessary measures involved which are itemized on Exchange of Notes.

(2) Selection of Consultants

For smooth implementation of the study, JICA uses (a) registered consulting firm(s). JICA selects (a) firm(s) based on the proposals submitted by the interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firm(s) used for the study is (are) recommended by JICA to a recipient country after Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be repeated.

3. Japan's Grant Aid Scheme

(1) What is Grant Aid?

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

(2) Exchange of Notes (E/N)

Both Governments concerned extend Japan's Grant Aid in accordance with the Exchange of Notes in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid etc., are confirmed.

(3) "The period of the Grant Aid" means one Japanese fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedure such as Exchange of Notes, concluding a contract with (a) consulting firm(s) and (a) contractor(s) and a final payment to them must be completed.

(4) Under the Grant, in principle, products and services of origins of Japan or the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant may be used for the purchase of products or services of a third country.

However the prime contractors, namely, consulting, contractor and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

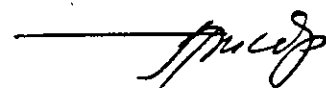
(5) Necessity of the "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. The Government of Japan shall verify those contracts. The "Verification" is deemed necessary to secure accountability to Japanese tax payers.

(6) Undertakings Required to 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 the following:

- a) to secure land necessary for the sites of the project prior to the works in case the project is facilities construction,
- b) to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
- c) to secure buildings prior to the installation work in case the project is providing equipment,
- d) to ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,
- e) to exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,



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f) to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

(7) Proper Use

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

(8) Re-export

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

(9) Banking Arrangement (B/A)

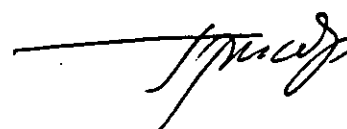
- a) The Government of the recipient country or its designated authority shall open an account in the name of the Government of the recipient country in a bank in Japan. The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by Government 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 the Government of Japan under an Authorization to Pay issued by the Government of the recipient country or its designated authority.

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Major Undertakings to be Taken by Each Government

NO	Items	To be covered by the Grant Aid	To be covered by the 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		●



**MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR IMPROVEMENT
OF MEDICAL EQUIPMENT
FOR REPUBLIC MEDICAL CENTER "ARMENIA"
(EXPLANATION ON DRAFT REPORT)**

In August 1999, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Basic Design Study Team on the Project for Improvement of Medical Equipment for Republic Medical Center "Armenia" (hereinafter referred to as "the Project") to the Republic of Armenia (hereinafter referred to as "the Armenia"), and through discussions, site surveys, and technical examination of the results in Japan, JICA has prepared the draft report of the study.

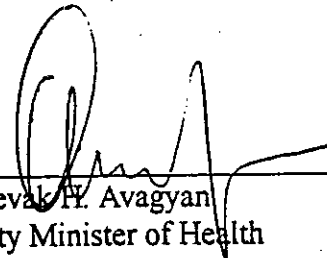
In order to explain and to consult the Armenia on the components of the draft report, JICA sent to the Armenia the Draft Report Explanation Team, which is headed by Dr. Minoru Akiyama, International Medical Center of Japan, Ministry of Health and Welfare and is scheduled to stay in the country from November 29 to December 16, 1999.

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

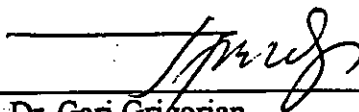
Yerevan, December 3, 1999.

秋山 稔

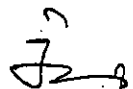
Dr. Minoru Akiyama
Leader,
Draft Basic Design Explanation Team
JICA

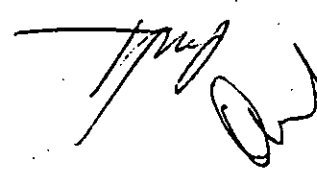


Dr. Sevak H. Avagyan
Deputy Minister of Health
Republic of Armenia



Dr. Gari Grigorian
Director
Republic Medical Center "Armenia"





ATTACHMENT

1. Components of the draft report

The Armenian side agreed in principle the components of the draft report explained by the Team.

2. Japan's Grant Aid System

The Armenian side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of the Armenia as explained by the Team and described in Annex 2 and Annex 3 of the Minutes of Discussions signed by both parties on August 30, 1999.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the Government of the Armenia around March, 2000.

4. Other Relevant Issues

4-1 Both sides confirmed that the health reform program, which may start from January 2000, would not affect the Project in principle.

4-2 Both sides agreed with the draft specification of main equipment. The team continue discussion on the specification of the equipment included in the draft report until December 16, 1999.

4-3 Both sides agreed that specifications of the equipment might be changed through the process of examination by JICA.

4-4 Both sides agreed that detailed information on the draft report, such as list of planned equipment, its specification, expected schedule of procurement etc., is confidential and should not be released to outside parties.

4-5 Both sides agreed that this is the first Japan's Grant Aid Project in Armenia and also is very important for the development of health sector. Stressing the importance of continuous cooperation in between two countries, both sides confirmed their commitment for smooth and proper implementation of the Project.

Appendices-5 References

	Name	Publisher	Year
1	Statistics "Health and Public Health 1998"	Ministry of Health of Armenia	1999
2	Main activities of Republic of Armenia Health System planned for the second semi-annual period of 1999	Ministry of Health of Armenia	1999
3	Health for all : National approach The Health Policy Development in Armenia	Ministry of Health of Armenia	1999
4	Hospital System's Optimization Strategy in Republic of Armenia	Ministry of Health of Armenia	1999
5	Semi-annual Report on Health Financing Component (01.01.99-30.06.99)	The World Bank	1999
6	Semi-annual Project Progress by Components (1 st half of the year 1999)	The World Bank	1999
7	Semi-annual Progress Report of PHCDP Unit	The World Bank	1999
8	Staff Appraisal Report, Armenia, Health Financing and Primary Health Care Development Project	The World Bank	1997
9	Semi-annual Report 1998 (01.01.1998-30.06.1998)	WHO	1998
10	"DIAGNOSTICA" Medical Corporation Success Story	US Aid	1999