SUMMARY

Summary

Syrian Arab Republic (hereinafter called "Syria") is divided into four regions: the western region that consists of coastal plains and mountains along the Mediterranean, the northern region that encompasses granaries irrigated by the Tigris and Euphrates Rivers, the eastern desert region bordered by Iraq, and the southern region that primarily comprised of the Golan Heights. Aleppo City, where the target facilities of this project are situated, is the second largest city in Syria and located between the Mediterranean coastal area and the granaries 160 kilometers northeast of Latakia, a coastal city along the Mediterranean.

The basic health indices of Syria are relatively better than those of surrounding countries. The under-five death rate is 32 per 1,000 births (cf. the Middle East/ Northern African average is 66 per 1,000 births), the infant death rate is 26 per 1,000 births (cf. the Middle East/Northern African average is 51 per 1,000), the average life expectancy is 69 years (cf. the Middle East/ Northern African average is 66). Major causes of death include cardiovascular diseases, accidents, and congenital defects. The morbidity rates of infectious diseases that are characteristics of developing countries are also lower than the average. However, the country's population is growing at a high rate of 2.7%. It is necessary to upgrade the health/medical and emergency care service systems to accommodate the growing population.

Outlined below are basic policies of the 8th five-year plan (1996-2000) for the Syrian health/medical sector. The 9th five-year plan (2001-2005) is currently under development and said to follow mostly the previous plan's policies, which aim to:

① Enhance the quality and quantity of medical services.
② Provide health care services for all districts and urban and rural areas.
③ Promote preventative medicine and medical services especially for the socially weak (mothers, school-age children, infants, etc.).
④ Eliminate infections and environmental pollution and reduce major diseases and leading causes of death.
⑤ Ensure the stable supply of medical drugs and supplies by making intensive efforts toward their local production.
⑥ Expand the state/public medical sectors and support the private medical sector.

Based on these policies, this project intends to contribute to the qualitative and quantitative enhancement of the medical service systems in the target area and

strengthen the medical activities by upgrading the medical equipment of Aleppo University Hospital, the top referral hospital in the northern region of Syria.

The Ministry of Higher Education and the Ministry of Health of Syria govern the country's public health sector. Aleppo University Hospital, the target site of this project, is under the control of the Ministry of Higher Education. The hospital is located in Aleppo, the second largest city in Syria after the capital city Damascus. The hospital is positioned as the top referral hospital and covers about 9 million residents in northern Syria. According to the Health Ministry's statistics, the number of beds possessed by this hospital accounts for 41% of the total beds in the target region. 30% of the beds are owned by private hospitals, 19% by medical facilities under the jurisdiction of the Health Ministry, and 10% by charity hospitals. (Source: 1997 data compiled by the Health Ministry's Statistics Bureau)

Since its establishment in 1974, the hospital has been struggling to provide adequate medical services as a top referral and educational hospital because of aging equipment that needs to be renewed but has not been for lack of funds. Likewise, the Maternal and Child Ward (originally planned as the Obstetrics Department, but pediatric services were later added) inaugurated in May 1998 has yet to be equipped sufficiently. As the top referral hospital in northern Syria, Aleppo University Hospital is the only medical institution having a Heart Surgery Center. However, its capabilities are limited by the shortage of basic equipment, and patients are often referred to other hospitals in Damascus and neighboring Turkey.

Under these circumstances, in order to restore the medical service capabilities of the target hospital, the Ministry of Higher Education of Syria submitted a request for assistance to the Japanese government in July 1999. In response to this request, the Government of Japan decided to conduct a Basic Design Study, and Japan International Cooperation Agency (JICA) dispatched a Basic Design Study Team to Syria from January 20, 2001 to February 21, 2001. The team held discussions with the officials concerned of the Government of Syria, and conducted a field survey at the target site. After returning to Japan, the team analyzed the study findings and drafted a basic design for the proposed project. Then, a mission was sent to Syria to present the basic draft design during a two-week period between May 14, 2001 and May 28, 2001.

Initially, the Syrian government requested provision of medical equipment for the Obstetrics/Gynecology Hospital, the Heat Surgery Center, and Aleppo University

Hospital. However, during the Basic Design Study, the Syrian side requested to include in the project the Outpatient Clinic, which organizationally belonged to Aleppo University Hospital and performed an important function within the hospital. The Basic Design Study confirmed that the enhancement of the Outpatient Clinic was essential to the successful implementation of this project and decided to include the clinic in the project. Policies for selecting equipment for each target facility are described below:

Obstetrics/Gynecology Hospital: Equipment for Obstetrics/Gynecology

Insufficient instruments in the Consultation and Treatment rooms of the Obstetrics and Gynecology Outpatient Clinics, as well as the Delivery and Operation rooms, which have already began operation, will be supplemented. Anatomical models to aid family planning education will also be included in the equipment plan.

Heart Surgery Center: Equipment for Heart Surgery

In recent years, the morbidity and mortality rates of cardiovascular diseases, which are attributable to an increased intake of fat, a large smoker population, high blood pressure, and other factors, are rising in Syria and other countries in the Middle East and North Africa. The site survey by the Japanese side also confirmed an increasing demand for medical treatment for coronary artery diseases in addition to rheumatoid heart diseases that had been prevalent in the past. Normally, these types of diseases should be controlled by investigating the target population to identify the causes and implementing preventative measures based on the survey findings. However, at the time of the Basic Design Study, neither the Ministry of Higher Education nor the Ministry of Health had established specific policies on the prevention of cardiovascular diseases in the northern region of Syria or clearly defined the relationships and division of works between the target facility of the Project and the primary and secondary medical facilities under the jurisdiction of the Ministry of Health with regard to the initial treatment of the diseases.

The Heart Surgery Center under the jurisdiction of the Health Ministry has already been established in Aleppo City and is in preparation for its opening scheduled at the end of 2001. However, how the existing cardio-surgery department within the Aleppo University Hospital and the Health Ministry's Heart Surgery Center will coordinate to perform their respective functions efficiently has yet to be worked out. For this reason, equipping the Heart Surgery Center within Aleppo University could create duplicate financial and personnel burdens on the Ministry of Health and the Ministry of Higher

Education, thereby possibly undermining the cost effectiveness of this assistance project.

Because the cost sharing system has yet to be adopted, other departments of the target hospital may be forced to bear some of the maintenance and administrative costs to be incurred by the cardio-surgery department.

In view of the above, we have determined that introducing the cardio-surgery equipment would be premature and that it should be excluded from the Project.

Aleppo University Hospital: Equipment for Main Hospital, Emergency Department, and Outpatient Clinic

The main hospital is comprised of the operation theater, central clinical laboratory, endoscopy room, pediatric department (including NICU), CCU, and other units, for each of which the project mainly plans to renew the aged equipment and supplement insufficient items. For the Emergency Department, existing equipment in the emergency operating room will be renewed and supplemented. For the Outpatient Clinic, biochemical analysis equipment and urine analyzers that are necessary for conducting general screening tests for outpatients will be provided, and the existing equipment of the ophthalmology room will be renewed and replenished.

In view of the above policies and taking into account the project's necessity, urgency, priority, and cost-effectiveness, as well as its appropriateness for a grant aid project, equipment items to be procured under this project were selected within a scope that the Syrian side can independently maintain and utilize the equipment for future development.

The project's equipment plan has been formulated according to the following guidelines:

① Renewal of aged equipment and supplementation of qualitatively insufficient items shall be the main focus. However, new items, which are deemed indispensable to the continuation of the present system, and the necessity and appropriateness of which have been verified, shall be included in the plan.
② Inexpensive items (e.g., various diagnostic and therapeutic instruments) that are seriously in short supply shall be included.
③ The grade and specification of each item shall match those of existing equipment.

Table S-1 below lists the main equipment items selected for each section based on the above policies and guidelines:

Table S-1: Main Items of the Equipment Plan

Department	Equipment
Radiology	CT scanner
Central Clinical Laboratory	Table top sterilizer
Operation Theater	Anesthetic machine (with ventilator and monitor), defibrillator, operation table, operation light, patient monitor, endoscopes with TV (laparoscope set, arthroscope set, pediatric urethroscope set), electric suction unit, electrical surgical unit
Emergency Section	Operation table, operation light, anesthetic machine (with ventilator and monitor), electric suction unit, electrical surgical unit, patient monitor, heating sterilizer, examination set for Emergency, resuscitator, defibrillator
Gastroenterlogy	Endoscopes with TV (gastrofiberscope, colonofiberscope), endoscopes with ECRP set (duodenofiberscope), endoscopic table
Respiratory	Endoscopes with TV (broncho-fiberscope), endoscopic table
Cardiology and CCU	Color doppler echo machine, multi-channel E.C.G. (12ch), defibrillator, mechanical ventilator, syringe pump, central system, examination set for CCU
Pediatrics	Neonate resuscitator, infant care unit, ultrasonic nebulizer, infant incubator, portable echography for neonates and infants, infant incubator (transportable), pediatric examination set, infusion pomp, bilirubin meter
Gynecology	Electric suction unit, heating sterilizer, dressing carriage, wheel chair, colposcope, examination set for gynecology
Obstetrics	Fetal doppler monitor, examination set for obstetrics
Neonatology	Infant incubator for neonatology, examination set for neonatology, bilirubin meter
Operation Theater of Ob/Gyn	Electric suction unit, defibrillator, infant laryngoscope, obstetric operation instrument set, gynecological operation instrument set
Function Examination Section of Ob/Gyn	Multi-channel E.C.G.
Family Planning Section of Ob/Gyn	Phantom sets for family planning education
Out Patient	Examination set for outpatient, pulse oxymeter, gypsum cutter, defibrillator, electric suction unit ultrasonic nebulizer, resuscitator
Outpatient (Ophthalmology)	Slit lump, sight tester, contact tonometer, Ophthalmoscope direct and indirect, automatic projector, auto-refractometer
Outpatient (Laboratory)	Automatic urine analyzer, automatic chemical analyzer

The implementation of this project, which starts with the exchange of notes (E/N) between the governments of Syria and Japan and followed by the conclusion of contracts with equipment suppliers, is estimated to take about eleven months for

completion. About 1.5 months are needed for detailed design and two months for tendering procedures. Procurement, transportation, and installation of equipment are estimated to take about 7.5 months after the approval of procurement contracts by the Japanese government.

The equipment to be provided under the project will mostly replace or supplement the existing equipment. Thus, the amount of increase in the annual maintenance cost, including the maintenance contract fees to equipment manufacturers, is estimated at around two million yen, which will be easily covered within the budget of each target facility.

Implementation of this project is expected to bring about various benefits as described below:

(1) Direct Beneficial Effects

1) Renewing aged and broken equipment and supplementing deficient items will restore and elevate the capabilities of the target facilities to their intended levels and enhance their medical services qualitatively and quantitatively.
2) Better-equipped target facilities will be able to provide education and training for medical students more effectively and efficiently.

(2) Indirect Beneficial Effects

1) Upgraded medical equipment will lead to accurate diagnosis. Diagnosing and treating patients more properly will result in shorter hospitalization and reduced deaths.
2) By regaining its intended capabilities, the target site will be able to function as the top referral hospital, providing technical guidance for other medical institutions and appropriate medical services for referred patients.

To ensure that the project will be executed and completed without delay and that the equipment will be operated smoothly and effectively after installation so that the initial project goals will be achieved, certain groundwork needs to be done by the Syrian side as listed below:

<u>Organization and Personnel</u>

① Central management system shall be established to make the best use of limited equipment.
② Medical staff hired on contract must be assigned to specific job sites.

Accounting and Finance

① The hospital shall make efforts to increase its own revenues.

② Establish a financial plan and check the receipts and disbursements periodically at least once a month.

③ Secure sufficient operation and maintenance costs, and reserve funds for future replacement of medical instruments according to their service lives and wear and tear.

Basic Design Study Report on
The Project for Improvement of Medical Equipment
In the University of Aleppo in the Syrian Arab Republic

Contents

[Appendices]

CHAPTER 1

BACKGROUND OF THE PROJECT

Chapter 1 Background of the Project

(1) Background of Grant Aid Request

The target facility of this project, Aleppo University Hospital, is located in Aleppo, the second largest city in Syria after the capital city Damascus. The hospital is the top referral hospital covering about 9 million inhabitants of northern Syria (including the central area and Mediterranean coasts). It also has the functions as an educational hospital.

However, after the establishment in 1974, renewal of medical equipment has been impeded by the shortage of funds. The hospital has lost the ability to perform sufficiently the functions as the top referral hospital and an educational hospital because of the aging of equipment. In a similar situation, Mother and Children Hospital of Aleppo University Hospital (originally planned as an obstetric hospital and later supplemented with the functions as a pediatric hospital), inaugurated in May 1998, has not completed the procurement of necessary equipment.

In this situation, the Ministry of Higher Education of Syria requested grant aid from Japan concerning the procurement of medical equipment required at Aleppo University Hospital.

(2) Outline of Grant Aid Request

1) Date of Request: July, 1999
2) Amount of Request: 720 million yen
3) Description of Request:

The target of facilities:

Obstetric and Gynecology Hospital, Heart Surgery Center, Aleppo University Hospital

Equipment required:

Procurement of medical equipment for the above facilities. (CT scanner, 500mA X-Ray Unit with TV System, X-Ray Unit, Mobile X-Ray Unit, Automatic X-Ray Film Processor, Gas Sterilizer, Automated Urine Analyzer, Fluorescence Microscope, Cardiopulmonary Pump, Intra-Atic Balloon Pump, X-Ray Tube, Image Intensifier/Cine Camera Assembly capable of DSA, Color Doppler Ultrasonic System, Anesthesia System, Lightening for Theatre, Mechanical Ventilator, Defibrillator, etc. Total 154 items.)

(3) Alteration of the Content of Request

In the initial request, the target of this project was the equipment at the following three facilities: Obstetric and Gynecology Hospital, Heart Surgery Center, and Aleppo University Hospital. However, Aleppo University Hospital has an Outpatient Clinic, and because this clinic is playing an important role for the functioning of the hospital, the Syrian side requested the Japanese side to include this clinic in the target facilities at the time of the basic design study. Because Basic study by the Japanese side confirmed that the improvement of this clinic is essential to the achievement of the above purposes, the Japanese side decided to include it in the target of this project.

The target facilities of this project consist of two sites, Obstetric and Gynecology Hospital and Aleppo University Hospital, both of which are located in the university premises. The facility called the Emergency Hospital was found to be a part (the emergency department) of the University Hospital, rather than an independent organization.

In addition, the initial request included the request for heart surgery equipment in accordance with the Syrian plan for the improvement of Heart Surgery Center.

Recently, Syria and other countries in the Middle East and Northern Africa are experiencing increases in the morbidity and mortality of cardiovascular diseases, reflecting the increase in fat consumption, high percentages of smokers, high prevalence of hypertension, etc. Basic Design study team confirmed the presence of a high needs for the treatment of ischemic heart disease, in addition to hitherto important rheumatic heart disease. The basis for the control of these diseases, however, is the clarification of etiology through habitual study, followed by appropriate prophylactic measures. In Basic Study survey, the Japanese side could not identify a strategy for cardiovascular disease control in Syria, and we could not confirm the linkage to the primary case management practiced at primary and secondary medical facilities. Although the technical skill of the medical staff in heart surgery is considered largely sufficient in Syria, there is no established system concerning the cooperation and responsibility allocation between the Heart Surgery Center of Aleppo University and the Heart Surgery Center in Aleppo under the Ministry of Health. Because the concept of cost sharing has not been introduced, there is a possibility that the

burden of expenditures for maintenance at the heart surgery department may be passed along to the maintenance budgets at other departments.

Because of these situations, it was concluded that priority should be given to the provision of basic medical equipment in this project. The provision of the equipment for heart surgery was considered inappropriate at this point in time, and was excluded from the project.

CHAPTER 2

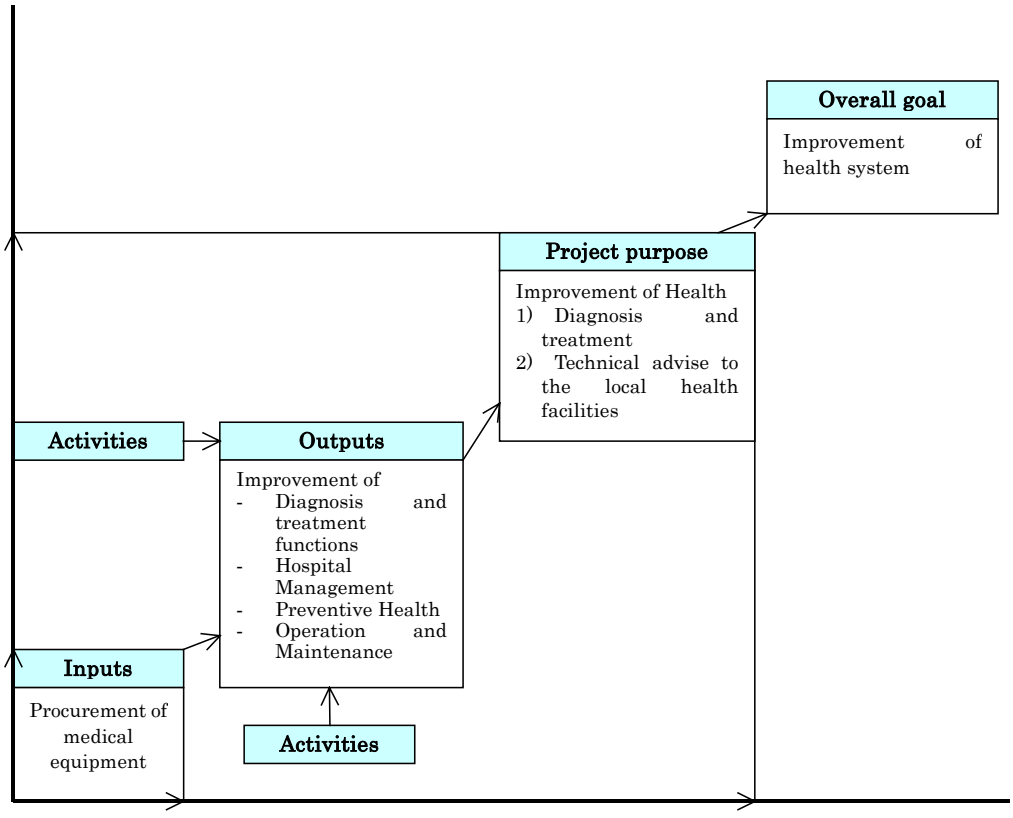
CONTENTS OF THE PROJECT

Chapter 2 Contents of the Project

2-1 Basic Concept of the Project

At the target facility of this project, Aleppo University Hospital, after the establishment in 1974, renewal of medical equipment has been impeded by the shortage of funds. The hospital has lost the ability to perform sufficiently the functions as the top referral hospital and an educational hospital because of the aging of equipment. This project concerns to the procurement of equipment for the purpose of improving health care services and improving public high-level medical facilities.

The equipment items procured in this project should be the items that are required for renewal or supplementation of existing equipment, that are usable in the current system, and that do not require establishment of new clinical divisions or introduction of technologies that have not been used at the hospital. The entire equipment plan in this project is intended to improve health care services by renewing old or defective pieces of equipment, which are considerably hampering the proper clinical functioning of the target hospital. Therefore, in principle, priority should be given to items that already exist and can be utilized in the current system of the hospital (allocation of physicians, nurses, and technicians).



This system is based on "Project purpose". "Activity" and "Input" shall be the important factor.

Figure 2-1 Project Action Framework

The basis for achieving project goals is the realization of best outputs. For this end, effective “actions” and “inputs” must be organized as the important constituents of the project action framework. The inputs required for this project are as shown below.

Table 2-1 Table of Required Inputs

Syrian side	1) Improvement of CT Room X-ray protection, closing of windows, medical gas piping, electrical wiring for X-ray units, etc. 2) Arrangement for operating costs Relocation of existing equipment and renovation work should be completed by the installation of equipment in this project. The funds for the purchase of expendable supplies, depreciation, maintenance contract fees, etc. should be secured.
Japanese side	Procurement of medical machinery, materials, etc. for the hospital.

2-2 Basic Design of the Requested Japanese Assistance

2-2-1 Design Policy

(1) Policy Regarding Medical Equipment for Each Department

Based on the results of field survey, the design principles concerning the requested equipment were determined as follows for formulation of the equipment plan.

(1) Limitation to the renewal of aged equipment items and supplementation of equipment items that are quantitatively insufficient.
(2) Inclusion of inexpensive items (e.g., various diagnostic and therapeutic instruments) in which shortage is considerable.
(3) With respect to the specifications for equipment, appropriate grades should be selected based on the current usage of existing equipment.

In the initial request, the target of this project was the equipment at the following three facilities: Obstetric and Gynecology Hospital, Heart Surgery Center, and Aleppo University Hospital. However, Aleppo University Hospital has an Outpatient Clinic, and because this clinic is playing an important role for the functioning of the hospital, the Syrian side requested the Japanese side to include this clinic in the target facilities at the time of the basic design study. Because the Japanese side confirmed that the improvement of this clinic is essential to the achievement of the above purposes, we decided to include it in the target of this project. The followings outline the policies for equipment selection for each target hospital.

<u>Obstetrics and Gynecology Hospital: Equipment for Obstetrics/Gynecology</u>

The equipment plan will mainly consist of the supplementation of instruments and other items in shortage at Consulting Rooms and Treatment Rooms in Obstetrics and Gynecology Outpatient Clinics that have already become active, Delivery Rooms and Operation Rooms. And also, equipment plan will include models for training of family planning.

1) Consulting Rooms and Treatment Rooms in Obstetrics and Gynecology Outpatient Clinics

Although obstetrics and gynecology outpatient clinics have already become active, the shortage in diagnostic and therapeutic instruments is considerable. Supplementation of these instruments is planned in the project.

2) Delivery Rooms and Operation Rooms

The equipment plan will mainly consist of the supplementation of surgical instruments and other items in shortage.

3) Equipment for Family Planning

The equipment plan will include perinatal anatomical models, apparatus for training in conduct of delivery, anatomical models of male and female neonates, etc.

Obstetrics and Gynecology Hospital (Heart Surgery Center): Equipment for Heart Surgery

1) In recent years, the morbidity and mortality rates of cardiovascular diseases, which are attributable to an increased intake of fat, a large smoker population, high blood pressure, and other factors, are rising in Syria and other countries in the Middle East and North Africa. The site survey by the Japanese side also confirmed an increasing demand for medical treatment for coronary artery diseases in addition to rheumatoid heart diseases that had been prevalent in the past. Normally, these types of diseases should be controlled by investigating the target population to identify the causes and implementing preventative measures based on the survey findings. However, at the time of the Basic Design Study, neither the Ministry of Higher Education nor the Ministry of Health had established specific policies on the prevention of cardiovascular diseases in the northern region of Syria or clearly defined the relationships and division of works between the target facility of the Project and the primary and secondary medical facilities under the jurisdiction of the Ministry of Health with regard to the initial treatment of the diseases.

2) The Heart Surgery Center under the jurisdiction of the Health Ministry has already been established in Aleppo City and is in preparation for its opening scheduled at the end of 2001. However, how the existing cardio-surgery department within the Aleppo University Hospital and the Health Ministry's Heart Surgery Center will coordinate to perform their respective functions efficiently has yet to be worked out. For this reason, equipping the Heart Surgery Center within Aleppo University could create duplicate financial and personnel burdens on the Ministry of Health and the Ministry of Higher Education, thereby possibly undermining the cost effectiveness of this assistance project.

3) Because the cost sharing system has yet to be adopted, other departments of the target hospital may be forced to bear some of the maintenance and administrative costs to be incurred by the cardio-surgery department.

In view of the above, we have determined that introducing the cardio-surgery equipment would be premature and that it should be excluded from the Project.

Equipment at Aleppo University Hospital: Main Hospital, Emergency Department, and Outpatient Clinic

This hospital consists of Surgery Department, Radiology Department, Central Clinical Laboratory, Endoscopy Room, Pediatrics Department (including NICU), CCU, etc. The equipment plan will mainly consist of the renewal and supplementation of existing equipment affected by aging or shortage in number. For the Emergency Department, the project will renew and supplement existing equipment in the Emergency Operation Room. For the Outpatient Clinic, the project will cover introduction of biochemistry assay and urinalysis apparatuses that are necessary for the general screening tests of outpatients, as well as renewal and supplementation of existing equipment in the ophthalmology room.

1) Operation Rooms
The project will cover renewal of operation tables, electrocauteries, anesthesia machines, etc. The specifications for the anesthesia machines will be the same grade as the existing equipment.

2) Radiology Department
The project will cover renewal of existing CT unit.

3) Central Clinical Laboratory
Main testing apparatuses have been procured by self-help of Aleppo University Hospital. The project will cover supplementation of dry heat sterilizers that are in quantitative shortage.

4) Emergency Department
The project will cover renewal of aged anesthesia machines, operation lights, operation tables, etc. in the emergency operation room. The dry heat sterilizer will be deleted because a large sterilizer is already located nearby.

5) Outpatient Department

In addition to diagnostic or therapeutic testing instruments, the project will cover biochemical analyzer and urine analyzer. The tests requiring these apparatuses are currently done by an outside organization.

6) Endoscopy Department

Because existing gastric, rectal, and bronchial endoscopes have been aged, these items will be renewed. Because of the necessity in medical practice, duodenal endoscopes are included in the project.

7) Pediatrics Department

In addition to aged existing equipment infant warmers (bilirubin meters, ultrasonic nebulizers, incubators, etc.), test and treatment instruments will be included in the project. The equipment items that can be shared with other departments (such as color doppler ultrasonography unit) are not included in the project.

8) CCU

Aged ultrasonography unit (color doppler), echocardiograph, defibrillator, etc. will be renewed.

(2) Policy Regarding Natural Conditions

While there is no need to modify the specifications for equipment because of natural conditions, automatic voltage stabilizers will be added to operation room equipment (artificial ventilators, anesthesia machines, etc.), CT scanner, ultrasonography equipment, etc. to ensure safety against voltage fluctuations.

(3) Policy Regarding Utilization of Local Suppliers and Contractors and Local Equipment and Materials

While there are agents of some Japanese manufacturers in Syria, the majority of medical equipment used in this country is supplied from European manufacturers. In the private sector, some of the hospitals with about 50 beds are specialized in cardiovascular medicine, and therefore are equipped with MRI, CT, and heart-lung machines. There are agents dealing in these sophisticated medical equipments, offering maintenance contracts. Expendable supplies and spare parts are distributed from Europe. Thus, under this project, the equipment will be procured from Syria, Japan, and third countries. With respect to the supply of expendable items and spare parts, the project will be designed to ensure the

independent development on the Syrian side.

(4) Policy Regarding Dealing with the Maintenance Capacity of the Implementing Organization

Regarding operating funds and the technical level of those who will be using it, none of the equipment to be furnished should pose any difficulties in handling it after implementation of the project since it will be limited to replacement of existing equipment and some quantitative supplementation thereof. However, since some of the medical equipment to be supplied is sophisticated, it will be necessary to give adequate guidance in operating it and maintenance training for it for the personnel who will be using it.

(5) Policy Regarding the Period of the Work Relating to Installation of the Equipment

The transportation of the planned equipment into the site must be arranged after confirmation of the progress of facility improvement works at the target hospital. The placement and installation of equipment must be planned to be completed efficiently in a short period so as not to impede the routine medical practice of the hospital. With respect to large medical equipment requiring substantial installation work, careful arrangement must be made with the manufacturers' factories before shipping to shorten the time required for the installation work. In particular, the installation of the CT scanner must be arranged after confirmation of the progress of improvement works on the Syrian side.

(6) Policy Regarding Setting of Scope and Grade of the Equipment

The plans will be prepared so as to provide basic equipment that will make possible diagnosis and treatment of generally prevalent ailments in the area in question taking into account ease of maintenance and operation, sureness and compatibility with the other equipment of the hospital. Also included must be peripheral equipment for utilization of automatic voltage stabilization devices, power supply devices immune to outages, tool sets for routine maintenance of machinery and equipment, etc.

The scope of the cooperation will be limited to what is considered to be appropriate in terms of necessity, urgency, priority, cost-benefit effect, etc., to what is considered to be appropriate for implementation as Japanese grant aid and to the extension to which it is considered to contribute to development of Syria's self-reliance as based on the above-mentioned principles.

2-2-2 Basic Plan (Equipment Plan)

Based on the design plan in 2-2-1, the equipment plan is formulated according to the following principles:

Priority Principles:

(1) Equipment items for renewal of aged equipment items.
(2) Equipment items for supplementation of equipment items in which quantitative shortage is evident.
(3) Equipment items that are indispensable to the basic practice of the hospital.
(4) Equipment items that can be operated and maintained easily.
(5) Equipment items expected to provide much beneficial effect.
(6) Equipment items with high cost-benefit effectiveness.
(7) Equipment items having established medical efficacy.
(8) Equipment items that can be operated with the existing skill level of the target hospital.
(9) Equipment items for which maintenance personnel (including contracted external personnel) is available or expected to become available at the target hospital.
(10) Equipment items that are appropriate for the social situation of the target hospital (with respect to the referral system and local needs).
(11) Equipment items expected to be used in conjunction with equipment provided by other donors.

Exclusion Principles:

(1) Equipment items requiring a large amount of maintenance cost.
(2) Equipment items with little beneficial effect.
(3) Equipment items with little cost-benefit effectiveness.
(4) Equipment items intended for academic study rather than clinical practice.
(5) Equipment items that can be replaced by simpler alternatives.
(6) Equipment items suspected to cause environmental pollution, e.g., due to wastes.
(7) Equipment items without medically established efficacy.
(8) Equipment items for private use of hospital workers (uses other than medical practice).
(9) Equipment items exceeding the minimum number of units (inefficiency and redundant items).
(10) Equipment items involving difficulty in obtaining spare parts and supplies locally.

(11) Equipment items that cannot be operated with the existing skill level of the target hospital.
(12) Equipment items for which maintenance personnel (including contracted external personnel) is not available at the target hospital.
(13) Equipment items that are not appropriate for the social situation of the target hospital (with respect to the referral system and local needs).
(14) Equipment items that require considerable improvement of infrastructures (water, electricity, waste water treatment) before installation.
(15) Equipment items that can be replaced by effective use of existing equipment.

[Principles to be used when there are international standards]
If there are WHO standards, such as the case with radiation equipment, such standards will be applied separately.

2-2-3 Basic Design Drawing

(1) Past Process of Deliberation on Equipment Items

At the time of the basic design survey, the survey team consulted with the Syrian side on the requested equipment for each sector. The consultation was based on the principles of equipment selection, and the team assessed the priority of each equipment item. The equipment items assigned priority "B" in domestic analysis were examined for appropriateness as the target of the project based on the policies of equipment selection. Those assigned priority "C" was generally excluded from the project.

In view of the current situation of aging and quantitative insufficiency of basic medical equipment, the equipment plan was formulated so that the medical equipment will be utilized effectively after execution of the project, appropriate operation and maintenance will be assured, and the burden on Syria will be minimized. During the selection of requested equipment in each sector, we made adjustment of quantities, deletion, etc. based on the judgment from the scale of facility confirmed by the basic design survey.

(2) Equipment Plan

Judging from the above deliberation and the patient demand, personnel plan, details of requested equipment, and skill level of the hospital, and based on the above-mentioned design policies of the equipment covered by this project and the results of survey and consultation, the Japanese side formulate the

equipment plan as follows.

From the basic design policies and conditions, we conclude that the appropriate coverage of this project should include 58 different items. The details and quantities of these equipment items are as shown in the tables below.

Table 2-2 shows the result of equipment analysis. The specifications for major equipment items are attached in Table 2-3.

Table2-2 Result of equipment analysis

M/D No.	Department	Item No.	Equipment	Basic Design		Existing Equipment			Purchased year	New	Result of study		Reference
				Priority	Q'ty	Work	Disorder	Old			Result	Q'ty	
1	Radiology	RA-01	CT scanner	B	1			1	1978		○	1	
2	Central Laboratory	CL-01	Automatic urine analyzer	B	1					◎	×	0	
3	Central Laboratory	CL-02	Spectrophotometer	C	*	1					×	0	
4	Central Laboratory	CL-03	General centrifuge	C	*	3					×	0	
5	Central Laboratory	CL-04	Table top sterilize	B	2			2	1994, 1994		○	2	
6	Central Laboratory	CL-05	pH Meter	C	*	1					×	0	
7	Central Laboratory	CL-06	Biological microscope	C	*	4					×	0	
8	Central Laboratory	CL-07	Fluorescence microscope	C	*	1					×	0	
9	Operation Theater	OP-01	Anesthesic machine	A	2	5		2	1988, 1988		○	2	
10	Operation Theater	OP-02	Defibrillator	A	2			2	1981, 1981		○	2	
11	Operation Theater	OP-03	Operation table	A	2	5		2	1973, 1985		○	2	
12	Operation Theater	OP-04	Operation light	A	3	4		3	1970, 1992, 1992		○	3	
13	Operation Theater	OP-05	Patients monitor	A	2	3		2	1980, 1994		○	2	
14	Operation Theater	OP-06	Orthopedic operation table	B	1			1	1990		○	1	
15	Operation Theater	OP-07	Laparoscope set	B	1			1	1996		○	1	
16	Operation Theater	OP-09	Arthroscope set	B	1			1	1983		○	1	
17	Operation Theater	OP-10	Pediatric urethroscope set	B	1			1	1983		○	1	
18	Operation Theater	OP-13	Electric suction unit	A	4	1	2	2	1980, 1980, 1980, 1980		○	4	
19	Operation Theater	OP-14	Electrical surgical unit	A	1	4		1	1980		○	1	
ADD	Operation Theater	OP-15	Endoscopic table	B	1			1	1994		○	1	
20	Emergency Section	EM-01	Operation table	A	2		1	1	1983, 1990		○	2	
21	Emergency Section	EM-02	Operation light	A	1	1		1	1990		○	1	
22	Emergency Section	EM-03	Anesthetic machine	A	2			2	1988, 1988		○	2	
23	Emergency Section	EM-04	Electric suction unit	A	2	2		2	1980, 1980		○	2	
24	Emergency Section	EM-05	Electrical surgical unit	A	1	1	1	1	1988		○	1	
25	Emergency Section	EM-06	Patient monitor	B	2			2	1994, 1994		○	2	
26	Emergency Section	EM-07	Heating sterilizer	C	*			1	1985		○	1	
ADD	Emergency Section	EM-08	Examination Set for Emergency	B	1			1	1990		○	1	
ADD	Emergency Section	EM-09	Resuscitation unit	B	1	1					○	1	
ADD	Emergency Section	EM-010	Defibrillator	B	1	1					○	1	
27	Gastroenterlogy	GE-01	Gastrofiberscope with TV	B	1			1	1996		○	1	
28	Gastroenterlogy	GE-02	Duodenofiberscope with ERCP set	B	1					◎	○	1	Confirmed the necessity and the propriety.
29	Gastroenterlogy	GE-03	Colonofiberscope with TV	B	1			1	1994		○	1	
ADD	Gastroenterlogy	GE-04	Endoscopic table	B	2			2	1990, 1990		○	2	
30	Respiratory	RR-01	Broncho-fiberscope with TV	B	1		1		1985		○	1	
ADD	Respiratory	RR-02	Endoscopic table	B	1			1	1990		○	1	
31	Cardiology and CCU	CC-01	Color doppler echo machine	B	1			1	1990		○	1	
32	Cardiology and CCU	CC-02	Multi channel E.C.G.	A	1	1		1	1995		○	1	
33	Cardiology and CCU	CC-03	Defibrillator	A	1	1		1	1985, 1985		○	1	
34	Cardiology and CCU	CC-04	Mechanical ventilator	B	2					◎	○	2	Confirmed the necessity and the propriety.
35	Cardiology and CCU	CC-05	Infusion pump (to be replaced to syringe pump)	A	1		1		1997		○	1	
36	Cardiology and CCU	CC-06	Patient monitor (to be replaced to central system)	B	1	1		1	1990		○	1	
37	Cardiology and CCU	CC-07	Pulse oximeter	C	*					◎	×	0	Apply by Patient Monitor
ADD	CCU	CC-08	Examination Set for CCU	B	1			1	1990		○	1	
38	Emergency /Ambulance	EA-01	Emergency set for Ambulance	C	*					◎	×	0	Requested to include the ambulance.
39	Pediatric	PA-01	Pediatric examination set	B	3			1	1990		○	1	
40	Pediatric	PA-04	Neonate resuscitator	A	1			1	1990		○	1	
41	Pediatric	PA-05	Infant care unit	A	1			1	1993		○	1	
42	Pediatric	PA-06	Bilirubin meter	A	1					◎	○	2	Confirmed the necessity and the propriety.
43	Pediatric	PA-07	Ultrasonic nebulizer	A	1			1	1994		○	4	
44	Pediatric	PA-08	Infant incubator	B	3	14		3	1993, 1993, 1993		○	3	
ADD	Pediatric	REP-1	Echocardiography with color doppler	C	*						×	0	Common use in others denartments.
ADD	Pediatric	REP-2	Portable echography for newborn and infants	C	*						○	1	
ADD	Pediatric	REP-3	Concentrated phototherapy incubator	C	*	12					×	0	

Table2-2 Result of equipment analysis

M/D No.	Department	Item No.	Equipment	Basic Design		Existing Equipment			Purchased year	New	Result of study		Reference
				Priority	Q'ty	Work	Disorder	Old			Result	Q'ty	
ADD	Pediatric	REP-4	Concentrated (double) phototherapy incubator	C	*	4					×	0	
ADD	Pediatric	REP-5	Concentrated phototherapy to be replaced underneath the baby cloth	C	*						×	0	
ADD	Pediatric	REP-6	Ultrasonic nebulizer	C	*						×	0	Duplicated with No.43
ADD	Pediatric	REP-7	Sphygmomenometer for children	C	*						×	0	Included in instrument set (lab.)
ADD	Pediatric	REP-8	Weight scale for children	C	*						×	0	Included in instrument set (lab.)
ADD	Pediatric	REP-9	Weight scale for infants	C	*						×	0	Included in instrument set (lab.)
ADD	Pediatric	REP-10	Pediatric examination set	C	*						×	0	Included in instrument set (lab.)
ADD	Pediatric	REP-11	Otoscope (wall fixed)	C	*						×	0	Included in instrument set (lab.)
ADD	Pediatric	REP-12	Height scale	C	*						×	0	Included in instrument set (lab.)
ADD	Pediatric	REP-13	Heating mattres	C	*						×	0	
ADD	Pediatric	REP-14	Resuscitation set	C	*						×	0	Duplicated with No.40
ADD	Pediatric	REP-15	Infant incubator	C	*						×	0	Duplicated with No.44
ADD	Pediatric	REP-16	Infant warmer	C	*						×	0	Duplicated with No.41
ADD	Pediatric	REP-17	Gluco-meter	B	1						×	0	Common use in others devartments.
ADD	Pediatric	REP-18	Bilirubin meter (trancutan)	C	*						×	0	Duplicated with No.42
ADD	Pediatric	REP-19	Bilirubin meter (capillary)	C	*						×	0	Duplicated with No.42
ADD	Pediatric	REP-20	Three channel E.C.G	C	*						×	0	Common use in others devartments.
ADD	Pediatric	REP-21	Defibrillator with pediatric padel	C	*						×	0	Common use in others devartments.
ADD	Pediatric	REP-22	Peritoneal Dialyse Cycler	C	*						×	0	Common use in others devartments.
ADD	Pediatric	REP-23	Infant incubator (portable)	B	1					◎	○	1	Confirmed the necessity and the propriety.
ADD	Pediatric	REP-24	Infusion pump	B	5	2	1	1	1993, 1993		○	2	
ADD	Pediatric	REP-25	Examination Set for Pediatic	B	1						×	0	
45	Gynecology	GY-02	Electric suction unit	A	5					◎	○	5	Confirmed the necessity and the propriety.
46	Gynecology	GY-04	Heating sterilizer	B	1					◎	○	1	Confirmed the necessity and the propriety.
47	Gynecology	GY-05	Dressing carriage	B	4					◎	○	4	Confirmed the necessity and the propriety.
48	Gynecology	GY-06	Wheel chair	B	3					◎	○	3	Confirmed the necessity and the propriety.
ADD	Gynecology	GY-07	Colposcope	B	1					◎	○	1	Confirmed the necessity and the propriety.
ADD	Gynecology	GY-08	Examination Set for Gynecology	B	1			1	1990		○	1	
49	Obstetric	OB-02	Fetal Doppler monitor	A	2					◎	○	2	Confirmed the necessity and the propriety.
50	Obstetric	OB-03	Pelvimeter	B	1	1					×	0	
51	Obstetric	OB-04	Height and Weight scale	C	*	2					×	0	
52	Obstetric	OB-06	Heating sterilizer	C	*	2					×	0	
ADD	Obstetric	OB-07	Examination Set fot Obstetric	B	1			1	1990		○	1	
53	Neonatology	NN-01	Infusion pump	C	*					◎	×	0	
54	Neonatology	NN-02	Direct retinoscope	C	*					◎	×	0	
55	Neonatology	NN-03	Bilirubin meter	C	*					◎	○	1	Confirmed the necessity and the propriety.
56	Neonatology	NN-04	Fetal monitor unit	C	*					◎	×	0	
57	Neonatology	NN-05	Ultrasonic nebulizer	C	*					◎	×	0	
58	Neonatology	NN-06	Laryngoscope set for infant	C	*	2					×	0	
ADD	Neonatology	NN-07	Infant incubator for neonatology	B	2					◎	○	1	Bring (1) to Pediatric Department.
ADD	Neonatology	NN-08	Examination Set for Neonatology	B	1			1	1990		○	1	
59	Operation Theater of Ob/Gy	NO-01	Electric suction unit	A	3			1	1985		○	3	Insufficiency of quantity. 3 operation rooms
60	Operation Theater of Ob/Gy	NO-02	Defibrillator	A	1					◎	○	1	Confirmed the necessity and the propriety.
61	Operation Theater of Ob/Gy	NO-03	Infant laryngoscope	B	2			2	1990, 1990		○	2	
62	Operation Theater of Ob/Gy	NO-04	Obstetric operation instrument set	B	2	2		2	1990, 1990		○	2	
63	Operation Theater of Ob/Gy	NO-05	Gynecological operation instrument set	B	2	2		2	1990, 1990		○	2	
64	Operation Theater of Ob/Gy	NO-06	Laparoscope operation set	B	1	1					×	0	Requested to include Histeroscope
65	Operation Theater of Ob/Gy	NO-08	Pulse oximeter	C	*					◎	×	0	
66	Function Examination Section of Ob/Gy	FE-01	One channel E.C.G. (to be replaced to multi-channel)	B	1					◎	○	2	Confirmed the necessity and the propriety.
67	Function Examination Section of Ob/Gy	FE-02	Three channel E.C.G. (to be replaced to multi-channel)	B	1						×	0	Included in No.66.
68	Family Planning Section of Ob/Gy	FP-01	Video with TV set	C	*	1					×	0	
69	Family Planning Section of Ob/Gy	FP-02	Phantom sets for family planning education	A	1					◎	○	1	Confirmed the necessity and the propriety.
70	Family Planning Section of Ob/Gy	FP-03	Basic examination set for family planning	C	*	2					×	0	
ADD	Out-patient clinic	OC-1	Examination set for Out Patient Clinic	B	1			1	1990		○	1	
ADD	Out-patient clinic	OC-2	Pulseoximeter	B	1					◎	○	3	Confirmed the necessity and the propriety.
ADD	Out-patient clinic	OC-3	Gypsum cutter	B	1		1		1990		○	1	

Table2-2 Result of equipment analysis

M/D No.	Department	Item No.	Equipment	Basic Design		Existing Equipment			Purchased year	New	Result of study		Reference
				Priority	Q'ty	Work	Disorder	Old			Result	Q'ty	
ADD	Out-patient clinic	OC-4	Defibrillator	B	1					◎	○	1	Confirmed the necessity and the propriety.
ADD	Out-patient clinic	OC-5	Electric suction unit	B	1		1	1	1980, 1980		○	2	
ADD	Out-patient clinic	OC-6	Ultrasonic nebulizer	B	1					◎	○	2	Confirmed the necessity and the propriety.
ADD	Out-patient clinic	OC-7	Resuscitator	B	1					◎	○	2	Confirmed the necessity and the propriety.
ADD	Out-patient clinic	OC-8	Slit lamp	B	1		3	1	1990, 1990, 1992		○	1	
ADD	Out-patient clinic	OC-9	Sight tester	B	1			1	1980		○	1	
ADD	Out-patient clinic	OC-10	Contact tonometer	B	1			1	1976		○	1	
ADD	Out-patient clinic	OC-11	Ophthalmoscope direct and indirect	B	1			1	1980		○	1	
ADD	Out-patient clinic	OC-12	Automatic projector	B	1			1	1990		○	1	
ADD	Out-patient clinic	OC-13	Auto-refractometer	B	1			1	1993		○	1	
ADD	Out-patient clinic	OC-14	Automatic urine analyzer	B	1					◎	○	1	Confirmed the necessity and the propriety.
ADD	Out-patient clinic	OC-15	Automatic chemical analyzer	B	1					◎	○	1	Confirmed the necessity and the propriety.

Table 2-3 List of Equipment Under the Project

Code No.	Name of Equipment	Specifications or Configuration	Q'ty	Appropriateness of the Grade of Equipment
1	CT scanner	Scan type: helical (spiral) Scan time: whole scan 1-4 sec./area X-ray tube voltage: 100-130kV X-ray tube heat capacity: 2.0MHU With laser imager	1	X-ray beams and a detector rotate around the patient to produce cross-sectional images of the body generated by a computer, allowing the physician to identify promptly the exact location to be operated, such as in the case of brain hemorrhage. Commonly-used spiral type.
2	Table top sterilizer	Temperature range: 50-260˚C Capacity: 100 liter Tabletop type with timer & safety device	2	Sterilizes metal and other instruments in dry condition with long-lasting high heat. Equivalent grade to the existing ones.
3	Anesthesia machine (A)	3-gas (O_2, N_20, Air) type For infants to adults, with respirator, 2 vaporizers (isoprene/halothane), hypoxia safety device, and SpO_2/CO/ECG/respiration/ noninvasive/temperature monitor	2	For abolishing pain of the patient to carry out surgery safely. Equivalent grade to the existing ones used in the operating room.
4	Defibrillator	Output: 2-360J Puddle: 2 types (for adults & infants) With ECG, monitor, and table (w/storage)	2	For resuscitating the patient having ventricular fibrillation. Equivalent grade to the existing ones used in the operating room.
5	Operation table	Hydraulic (manual) type Vertical moving range: 60-100cm Longitudinal rotation: 25˚ up/down Lateral rotation: 20˚ left/right Outer dimension: 190(L) x 50(W)cm or larger With X-ray film cassette holder	2	For placing the patient on to be operated. Its positions and shapes can be adjusted to change the posture of the patient according to the type of surgery. X-ray photography is possible during operation. Equivalent grade to the existing ones used in the operating room.
6	Operation light	Main/sub-lamp type, concentric ceiling suspension type Main lamps: 8 or more (140,000 Lux or higher) Sub lamps: 4 or more (90,000 Lux or higher) Main lamp diameter: 70 cm or more Sub lamp diameter: 50 cm or more	3	For properly lighting the region of the patient to be operated so that surgery can be performed efficiently. Ceiling type that does not get in the way of surgeons and assistants is chosen. Equivalent grade to the existing light used in the operating room.

Code No.	Name of Equipment	Specifications or Configuration	Q'ty	Appropriateness of the Grade of Equipment
7	Patients monitor	Monitor: TFT color LCD, 10 inches or larger Measurement: 5 or more items (ECG, respiration, temperature, pulse, noninvasive) With printer & table Cable connectable	2	Used to monitor the vital signs of the patient. Measures basic ECG, respiration, pulse, epidermal oxygen concentration, and blood pressure. Equivalent grade to the existing one.
8	Orthopedic operation table	Elevator: hydraulic (electric) Moving range: 60-100cm Longitudinal rotation: 25° up/down Lateral rotation: 20° left/right Outer dimension: 190(L) x 50(W)cm or larger 1 set of orthopedic traction device With X-ray film cassette holder	1	For placing patient on to be operated. Leg traction surgery is possible with the addition of the general surgery and leg traction device. Universal grade similar to the existing table.
9	Laparoscope set with TV	Rigid type Camera control unit Light: halogen or better grade With TV monitor & electric scalpel	1	For observing the surface of the liver and can be used for diagnosing hepatitis, cirrhosis, and other diseases. Equivalent grade to the existing one.
10	Arthroscope set with TV	Rigid type Camera control unit Light: halogen or better grade	1	For diagnosing and treating the joints of patients. Universal type and equivalent grade to existing one.
11	Pediatric urethroscope set with TV	2 rigid types Light: halogen or better grade With TV monitor	1	For observing, diagnosing, and treating the urethra of infants. Equivalent grade to the existing one.
12	Electric suction unit	Pump: rotary Grass suction bottle: 2-bottle type (3L x 2) Suction pressure: 700 mmHg or more Evacuation volume: 40L/min or more, with overflow prevention	4	Used for suction treatment of blood, pus, wash liquid, etc. during surgical operation. Mounted on a frame with casters, it will not be a hindrance to safe and efficient operation.
13	Electrical surgical unit	Output modes: monopolar, bipolar Output: incision 250W or more, coagulation 100W or more, mixed 150W or more, bipolar 18W or more With a foot switch	1	Used during surgical operation. Electricity is passed through the electrode parts for incision and coagulation of the patient's tissues. Of the same grade as the existing equipment in the operation room.

Code No.	Name of Equipment	Specifications or Configuration	Q'ty	Appropriateness of the Grade of Equipment
14	Endoscopic table	Hydraulic Table top: adjustable height, adjustable forward-backward and left-right tilts Outer dimensions: about 60(W) x 170(D) x 70-104(H) cm	1	Used during endoscopy. The table supporting the patient's body can be moved up/down and tilted. Of the grade usable for general purposes with existing equipment.
15	Anesthesia machine (B)	3-gas (O2, N2O, Air) type anesthesia machine For adults and children. With respirator, 2 types of vaporizers (isoprene and halothane), low-oxygen safety mechanism, SpO2/CO2 monitor	2	Delivers anesthesia for safe surgical operation without pain to the patient. Equivalent to the existing apparatus used in the operation room.
16	Gastrofiberscope with TV	Light source: halogen or better With camera control unit, electrocautery, suction unit, washing (disinfection) unit	1	Enables observation of the patient's stomach interior, diagnosis of diseases, etc. through the fiber scope. Of the same grade as the existing equipment.
17	Duodenofiberscope with ERCP set	Light source: halogen or better With camera control unit, electrocautery, suction unit, washing (disinfection) unit	1	Enables observation of the patient's duodenal interior, diagnosis and treatment of diseases, etc. through the fiber scope. Of the same grade as the existing equipment.
18	Colonofiberscope with TV	Light source: halogen or better With TV monitor, electrocautery, suction unit, washing (disinfection) unit	1	Enables observation of the patient's rectal interior and diagnosis, treatment, etc. of diseases such ass colon cancer, polyps, and ulcers. Of the same grade as the existing equipment.
19	Bronchofiberscope with TV	Light source: halogen or better With TV monitor With camera control unit, electrocautery, suction unit, washing (disinfection) unit	1	Enables observation of the bronchial interior and diagnosis, treatment, etc. of bronchial diseases through the fiber scope inserted into the patient's bronchus. Of the same grade as the existing equipment.

Code No.	Name of Equipment	Specifications or Configuration	Q'ty	Appropriateness of the Grade of Equipment
20	Color doppler echo machine	For cardiology and general diagnosis Modes: B, M, B/M Monitor: color, 12" or more With 4 types of probes (convex, linear, sector, micro-convex), prove hangers, printer	1	Used for imaging diagnosis of disease morphology and tissue conditions by sending ultrasound to the patient's body and analyzing the transmitted or reflected waves. Of the same grade as the existing equipment, as this is procured for renewal of existing equipment.
21	E.C.G.	No. of channels: 6 or more With cart, cord hanger, printer Built-in battery	1	Diagnoses arrhythmia, ischemic heart disease, cardiomegaly, etc. by recording the ECG of the patient.
22	Mechanical ventilator	Ventilation modes: 4 (SIMV/SMV/ PEEP/CPAP) or more For adults and children Tidal volume: about 20 mL-1500 mL/min With CO2/SpO2 monitor, moisturizer, compressor	2	Performs ventilation for the patient lacking spontaneous respiration and assists ventilation for the patient with weakened respiration. Of the same grade as the existing equipment.
23	Syringe pump	Syringe type Injection volume measurement range: about 0.1-999.9 mL With stand, rechargeable battery, safety functions	1	Used for continuous safe delivery of drugs to the patient. Of the same grade as the existing equipment.
24	Electric suction unit for delivery	Motor output: 100W or more Pump: rotary type Max. suction pressure: 700 mmHg or more With suction cup and tube	3	Vacuum extractor is used when forced delivery is necessary because of imminent risk to the mother or the fetus, such as in the case of abnormal labor. Of the same grade as the existing equipment.
25	Central monitoring system	Wired, wall mount Central monitor: color 15" or more Display items: 5 or more (ECG, respiration, temperature, pulse, non-invasive). With printer	1	Used for monitoring the patient's vital information. Basic ECG, respiration, pulse, cutaneous oxygen, and blood pressure are monitored using bedside monitors and a central monitor. Of the same grade as the existing equipment.
26	Infant care unit	With suction, heating/moisturizing unit, oxygen hood, resuscitation set, skin temperature sensor	1	Used for temperature management of neonatal hypothermia, prevention of body temperature drop, etc. Of the same grade as the existing equipment.

Code No.	Name of Equipment	Specifications or Configuration	Q'ty	Appropriateness of the Grade of Equipment
27	Bilirubin analyzer	Measurement method: Total bilirubin level Range: about 0-30 mg/dL With centrifuge	1	Used to measure blood bilirubin level in neonatal jaundice. Of a grade usable for general purposes.
28	Ultrasonic nebulizer	Ultrasound frequency: about 1.7 MHz Nebulization volume: about 1-5 mL/min With stand Capable of nebulization time setting	1	Used for treatment of the respiratory system, where liquid medicines are made into fine mist-like particles by the action of ultrasound. Of the grade usable for general purposes.
29	Infant incubator	Temperature adjustment: servo, manual With IV pole With oxygen flow meter, suction unit	3	Used to keep premature neonates and sick neonates under adequate temperature, high oxygen, and appropriate humidity. Of the same grade as the existing equipment.
30	Infant incubator for transportation	Temperature adjustment: manual With oxygen cylinder, oxygen flow meter, battery	2	Used for transportation of neonates within the hospital and between hospitals. Of the grade usable for general purposes.
31	Dressing carriage	2-tiers Stainless steel With versatile jar stands, poultice jar, waste jar, casters	4	Used for storing and transporting instruments for physical and surgical examination and treatment. Of the common grade.
32	Wheel chair	Rear wheel drive Front and rear wheels: solid tires Foldable	3	Used for patients with trouble in gait. Of the common grade.
33	Fetal doppler monitor	Ultrasound frequency: about 2.5 MHz Ultrasound output: about 10 mW/cm^3 With rechargeable battery	2	Detects heart sound using doppler effect for the diagnosis of its enhancement, weakening, etc. Simple type usable for general purposes.
34	Infant laryngoscope	Macintosh type Blades: 2 types or more With case	2	Used for examination and treatment of neonate's larynx through the mouth. Simple type usable for general purposes.
35	Obstetric operation instrument set	Small items for normal delivery and cesarean section (over 25 items)	2	General purpose set of instruments used for normal delivery, abnormal delivery, and operations such as cesarean section.
36	Gynecological operation instrument set	Small items for hysterectomy and artificial abortion (over 30 items)	2	General purpose set of instruments used for hysterectomy and artificial abortion.

Code No.	Name of Equipment	Specifications or Configuration	Q'ty	Appropriateness of the Grade of Equipment
37	Phantom sets for family planning education	Over 10 types of items including models of male and female neonates, labor training apparatus, etc.	1	General purpose medical models used for appropriate education, instruction, and practical training in family planning.
38	Colposcope	Stand type, with casters Luminance settings: 3 or more Eyepiece power: 10x or more	1	Apparatus used for observation and diagnosis through enlarged stereoscopic inspection of the patient's uterine cervix. Of the grade usable for general purposes.
39	Examination set for Pediatric	Sphygmomanometer, stethoscope, diagnosis set Height scale, body weight scale, laryngoscope, syringe pump, bilirubin meter, etc. (11 items)	1	Necessary and general instruments used for pediatric examination.
40	Examination set for Obstetric	Sphygmomanometer, stethoscope, diagnosis set, height scale, body weight scale, laryngoscope, etc. (9 items)	1	Necessary and general instruments used for obstetric examination.
41	Examination set for Gynecology	Sphygmomanometer, stethoscope, diagnosis set, height scale, body weight scale, laryngoscope, etc. (9 items)	1	Necessary and general instruments used for gynecological examination.
42	Examination set for Neonatology	Sphygmomanometer, stethoscope, diagnosis set, height scale, body weight scale, laryngoscope, bilirubin meter, etc. (10 items)	1	Necessary and general instruments used for neonatal examination.
43	Resuscitation unit	Demand respirator, mask, airway, laryngoscope, Ambu back, tracheal incubation set	1	Basic instruments necessary for emergency resuscitation Of the grade used commonly for general purposes.
44	Examination Set for CCU	Sphygmomanometer, stethoscope, diagnosis set, height scale, body weight scale, laryngoscope, etc. (9 items)	1	Necessary and routinely used instruments for examination of ICU patients.
45	Examination Set for Emergency	Sphygmomanometer, stethoscope, diagnosis set, height scale, body weight scale, laryngoscope, resuscitation set, etc. (10 items)	1	Necessary and simple instruments for examination of emergency patients.

Code No.	Name of Equipment	Specifications or Configuration	Q'ty	Appropriateness of the Grade of Equipment
46	Examination set for Out Patient Clinic	Sphygmomanometer, stethoscope, diagnosis set, height scale, body weight scale, pulse oximeter, slit lamp, etc. (18 items)	1	Necessary and commonly used instruments for examination of outpatients (internal medicine, surgery, ophthalmology, etc.)
47	Treatment set for Out Patient Clinic	Defibrillator, gypsum cutter, suction unit, ultrasound nebulizer, resuscitator	1	Necessary and general purpose instruments used for treatment of outpatients.

2-2-4 Implementation Plan

2-2-4-1 Implementation Plan Policy

(1) System for Implementation

1) Project Implementing Organ

The Ministry of Higher Education of Syria will be responsible for the management and implementation of this project. The target facility, Aleppo University Hospital, will be the actual managing organization. General control of the affairs concerning this project will be taken by the Minister of Higher Education, who was the representative from the Syrian side at the time of basic design survey. Practical matters will be handled by the director of the target hospital. The maintenance of equipment will be in charge of the Maintenance and Management Section of the target hospital. The procurement and management of expendable supplies will be in charge of the hospital's secretariat department.

2) Consultant

Immediately after the Exchange of Notes (E/N) between the governments of Japan and Syria, the Japanese consultant will enter into a consultant contract with the Ministry of Higher Education as the representative of Syria according to the procedures of Japanese grant aids. This contract will take effect after accreditation by the Japanese government. Based on this contract, the consultant will perform the following services:

① Tender Stage : Cooperation concerning the selection of equipment procurement contractor and conclusion of procurement contract.

② Procurement Stage : Management of equipment procurement and pre-shipping inspection.

③ Installation Stage : Supervision of equipment installation and of instruction on operation and maintenance.

The consultant will assign a team of 3 engineers, i.e., a supervisor , an equipment planner1, and an equipment planner 2, who will supervise implementation design and construction.

Supervisor: The supervisor is responsible for all services from implementation design to completion, and in this responsibility manages the consultation with the governments of Japan and Syria.

Equipment Planner: The equipment planners conduct the final confirmation of the specifications for equipment at the time of detailed design through discussion with the Ministry of Higher Education, the target hospital, and manufacturers of the equipment items. Afterwards, the equipment planner prepares necessary documents submitted to the governments of Japan and Syria. The equipment planner also takes charge of the inspection at the time of delivery.

3) Equipment Procurement Contractor

The equipment procurement contractor is selected by a tender and enters into the contract with Aleppo University Hospital. This contract also takes effect after accreditation by the Japanese government. According to the contract, the equipment procurement contractor procures and delivers required equipment. It also provides technical instruction concerning the installation, operation, and maintenance of respective equipment items. In addition, the contractor establishes a system for maintenance after delivery of equipment items, including the procurement of spare parts and expendable supplies as well as technical instruction. The equipment procurement contractor will provide the manuals and other technical materials that are necessary for maintenance after procurement and the list of the agencies of the manufacturer of each equipment item located in adjacent countries. With respect to the timing of delivery and installation, the equipment procurement contractor will secure sufficient coordination with the implementing organization to ensure smooth execution of the project.

4) Japan International Cooperation Agency

For the smooth execution of this project, JICA takes charge of confirmation of various documents directed to the Japanese government.

(2) Implementation Policies

1) After Exchange of Notes (E/N), the consultant should make sufficient arrangement with government organizations of Syria, government-related organizations of Japan, the equipment procurement contractor, and other relevant organizations, and also conduct necessary procedures, so that the process will proceed smoothly through the steps of tender, selection the equipment procurement contractor, conclusion of the contract with the equipment procurement contractor, confirmation of production schedules,

pre-shipping inspection, and the payment of project expenses

2) Because the target facility is a hospital, it is difficult to stop routine operation of the facility for the sake of delivery and installation of equipment. Hence, detailed arrangement concerning work schedule and other factors must be made between the consultant and the persons related to the target hospital at the stage of detailed design to avoid impediment to the progress of this project. Strict attention should be paid to noise control and hygiene measured during installation work. In particular, special attention should be paid to safety management when medical equipment items are carried into the hospital.

3) Equipment items that will be procured in Japan should be subjected to sufficient quality control, production inspection, pre-shipping inspection, etc. in Japan.

4) With respect to the dispatch of engineers, it is basically desirable to use the engineers at local agents having much experience, since there are many such engineers. However, with respect to the CT scanner and endoscopy equipment, the Syrian side has requested the provision of detailed training, and installation of these items will require specialists. Basically, the plans concerning these items will include the dispatch of Japanese engineers.

5) At the time of the delivery of equipment, the consultant should provide training on the site, correctly ascertain the result of the deployment of equipment items in each department, and confirm the completion of the delivery of equipment in this project.

6) To ensure that the relevant hospital personnel have the complete knowledge concerning the methods of operation, maintenance, etc., the equipment procurement contractor should provide training and orientation for the relevant personnel grouped by department. In the case of equipment items for which sufficient knowledge can be obtained through operation and maintenance manuals, these manuals are used and no training will be given. In addition, occasions should be given to make sure about the methods of regular inspection and other work by personnel of the maintenance department for the purpose of reinforcing this training.

7) With respect to the CT scanner, the Syrian side strongly requested the provision of training in the methods of operation for a period of about 2 weeks. However, in view of the content of training and the technical level of the local staff, it is considered that a training course for about one week will be sufficient. Thus, the dispatch of specialists will be planned based on this period of training.

2-2-4-2 Important Points in Supervision of Procurement

(1) Japanese Side

Products of manufacturers in Japan or third countries are planned to be landed at Latakia Port and transported to the project site. The condition of the road from Latakia to Aleppo is very good, similarly to other trunk highways in Syria.

There is a possibility that the procurement of medical equipment may be subject to export restraints under Export Trade Control Order. It is necessary to confirm the applicability of this Order to the equipment procured in this project.

(2) Syrian Side

It is necessary to conduct prior coordination with relevant organization to facilitate the delivery and installation of equipment.

2-2-4-3 Allocation of Procurement Burden

The scope of work related to this project covered by the Japanese side and that covered by the Syrian side are as outlined in the followings:

(1) Scope of Work Covered by the Japanese Side

① To procure the equipment items in the project.
② To bear marine transport costs and to conduct land transport to the target medical facility.
③ To conduct placement and installation of equipment.
④ To provide technical instruction on test runs, operation, maintenance, inspection, management concerning all procured equipment.

(2) Scope of Work Covered by the Syrian Side

① To provide information and data required for placement and installation of equipment.
② To provide a space in the target hospital to be used temporarily as the office during the implementation period.

③ To provide the facilities, equipment, and spaces required for the installation of procured equipment.

④ To conduct and make available the appurtenant work on the primary side of peripheral facilities (electricity, water supply, sewage, other facilities) required for the installation of equipment before the placement of equipment, to remove the existing equipment in the places used for installation of new equipment, and to conduct work related to the installment of equipment.

⑤ To provide the space for storage of equipment after arrival until the beginning of the work for placement of equipment.

⑥ To take necessary measures to facilitate smooth unloading, customs clearance, and intra-country transport of imported equipment.

⑦ To exempt the Japanese persons staying in Syria for the implementation of this project from the payment of customs duties and other taxes.

⑧ To afford facility for the Japanese citizens entering and staying in Syria for the purpose of supplying necessary equipment and labor for the implementation of this project, and to take sufficient measures to ensure the safety of these persons.

⑨ To bear the costs required for the procedures of Bankers Acceptance (B/A) and Authority to Pay (A/P).

⑩ To allocate the budget and personnel (including the O/M costs concerning the equipment procured by the grant aid) that are required for effective implementation of this project.

⑪ To prepare the plan for the usage of equipment procured by the grant aid covering 5 years, and to report regularly on the actual usage of equipment to the Japanese embassy in Syria.

⑫ To conduct and to bear the costs of appropriate and effective maintenance of equipment procured by the grant aid.

⑬ To grant necessary permissions, license, and other authorization for the implementation of the grant aid project.

⑭ To bear the costs accompanying the procedures of tax exemption.

⑮ To bear the costs required for the implementation of this project that are not included in the above-mentioned scope of work covered by the Japanese side and that covered by the Syrian side.

2-2-4-4 Procurement Supervision Plan

According to the method of Japanese grant aids, the Japanese consultant firm will enter into a consultant contract with the Ministry of Higher Education, which is the implementing organ on the Syrian side, to perform the detailed design and procurement supervision for this project. The purpose of procurement supervision is to confirm whether or not the execution of work processes and the nature of work are in accordance with the design documents and drawings, to ensure the appropriate execution of the equipment procurement contracts, to provide impartial guidance, advice, and coordination during the period of work, and thus to improve quality. Procurement supervision consists of the following services:

(1) Services Related to Tender and Contract

For the bidding to select the Japanese contractor for the procurement of equipment and installation work, the consultant prepares tender documents, issues public notice of tender, receives applications for tender, examines eligibility, distributes tender documents, receives documents from bidders, evaluates the result of bidding, and conducts other services related to the tender. At the same time, the consultant provides advice concerning the procurement of equipment and the conclusion of the contract between the Ministry of Higher Education of Syria and the contracting company.

(2) Guidance, Advice, and Coordination to Equipment Procurement Contractor

The consultant examines the work processes, work schedules, machinery and materials procurement plans, medical equipment procurement and installation plans, etc., and provides guidance, advice, and coordination to the equipment procurement contractor.

(3) Inspection and Accreditation of Fabrication Drawings, Construction Drawings, etc.

The consultant conducts inspection and guidance concerning the construction drawings, fabrication drawings, documents, etc., and provides accreditation.

(4) Confirmation and Accreditation of Procured Equipment

The consultant confirms that the medical equipment procured by the equipment procurement contractor are consistent with the contract document and drawings, and then provides accreditation concerning the adoption of the equipment.

(5) Factory Inspection

Whenever necessary, the consultant attends inspections at the factories producing medical equipment to ensure quality and performance.

(6) Reporting of the Progress of Work

The consultant monitors the progress of work and the condition of the work sites, and reports the progress of work to the relevant organizations of the both countries.

(7) Completion Inspection and Test Runs

The consultant performs the completion inspection and test runs of medical equipment and facilities to confirm the consistency with the contract documents and drawings, and submits the report of inspection to Syria.

(8) Guidance Concerning Operation and Maintenance Trainings

Because some of the equipment items covered by this project require technical knowledge for operation and maintenance, it is necessary to provide training on site during the period of adjustment and test runs so that the personnel in charge of each equipment item will be acquainted with the method of operation, the method of inspection, the techniques for repair, etc. The consultant provides guidance and advice concerning these trainings.

In performing the above services, the consultant will not dispatch personnel over the entire period of work, because of the judgment from the scale of this project. Instead, engineers will be sent to the project site when necessary according to the progress of work, and perform inspection, guidance, and coordination. At the same time, engineers in charge will be posted in Japan to establish liaison and support systems. They submit reports to the government-related organizations in Japan on relevant matters concerning the progress, payment procedures, delivery, etc. There are no notable obstacles with respect to relevant legislation and labor conditions.

2-2-4-5 Machinery and Materials Procurement Plan

(1) Local Procurement

Most of the medical equipment widely used in the target country is the product of Europe, the United States of America, and Japan. For some of the simple equipment (instrument stands, wheelchairs, etc.), there are local products.

(2) Possibility for the Use of Third-Country Products

Procurement of a third-country product can be considered if there is an agency of the manufacturer in the target area, there are no problems related to maintenance and the procurement of spare parts and expendable supplies, and the price is advantageous. Specifically, such items include anesthesia machines, artificial respirators, etc.

(3) Transport Modalities

Modalities for transportation could be almost 1.5 months.

2-2-4-6 Process of Implementation

When the Exchange of Notes concerning the implementation of this project is concluded between Japan and Syria, subsequent process of implementation is divided into the 3 stages of detailed design, tender, and equipment procurement, as described below. Implementation design is divided between the stages of detailed design and tender.

(1) Detailed Design Stage

After the consultant contract is concluded between the Ministry of Higher Education representing the Syrian government and the Japanese consultant firm and the contract is accredited by the Japanese government, the consultant commences the final confirmation of the content of project based on the detailed design drawings prepared during the stage of basic design survey, specification documents, and the package of tender design documents including tender requirements. Meanwhile, the consultant conducts consultation with the Syrian side concerning the details of facilities and equipment. In the end, approval of the package of tender design documents should be obtained from the Syrian side. The time required for the final confirmation of the content of project is expected to be about 1.5 months.

(2) Tender Stage

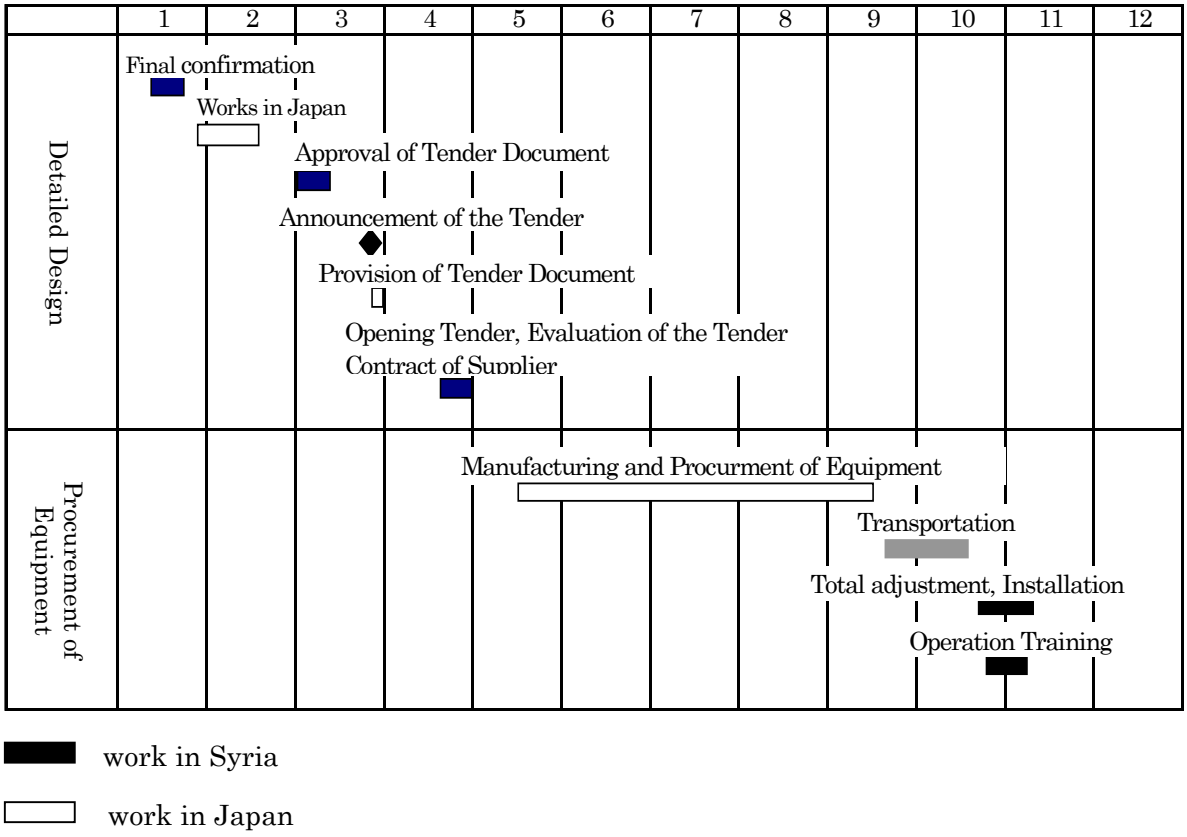
The companies contracted for equipment procurement will be selected based on tender documents. The process of tender proceeds from the public notice of tender to the receipt of applications for tender, eligibility examination, distribution of tender documents, bidding, reporting of the result of tender, designation of the equipment procurement contractor, and conclusion of contract for equipment procurement. The whole process will take about 2.0 months.

(3) Equipment Procurement Stage

After the conclusion of the procurement contract, the contractor commences the contracted services following the accreditation of the contract by the Japanese government. The period of work required in this project will be about 7.5 months, according to the estimation considering the situation of the target facility, the scale of the project, the content of the contract, weather conditions, etc.

The process of implementation from the Exchange of Notes to completion is as shown in the Table 2-4 Table of implementation schedule.

Table2-4 Implementation schedule



2-3 Obligations of Recipient Country

Because this project mainly consists of the renewal and supplementation of existing equipment, most items are planned to be installed in the places where the existing units are located. As an exception, the CT scanner is planned to be installed in a room in the new emergency department, which has been made available by the extension/reconstruction works on the Syrian side. The installation of the CT scanner will require additional works such as X-ray protection and the provision of electric power.

Table 2-5 Works to be conducted by the Syrian Side

Name of Work	Description	Required Budget
Building improvement work	Change of the position of partition walls in the CT room. Closure of windows with concrete. X-ray protection (walls and doors).	about 1.20 million yen
Electric wiring work	Provision of independent high-voltage electric power from the power reception facility to the CT room. Provision of electric power for the control panel.	about 1.00 million yen
Air conditioning work	Installation of air conditioner for the CT room.	about 1.00 million yen
Total		about 3.20 million yen

2-4 Project Operation Plan

The target hospital has one specialist engineer in medical equipment, who is a clinical laboratory technician, but maintenance and servicing are commissioned, as necessary, to local medical equipment dealers. Thus, in this project, all plans have been formulated assuming the use of manufacturers having local agents. For the plans concerning Aleppo University, the maintenance and servicing of the equipment procured under this project will also be commissioned to local dealers. Because there are many agents of Japanese manufacturers and third-country manufacturers and they have sufficient experience, they are expected to provide adequate services with respect to the provision of replacement parts and expendable supplies.

This section describes the system and measures used for maintenance (including technical servicing and repair) of equipment after implementation of the project. We also provide rough estimates of the costs required for maintenance, repair (including the purchase of repair parts), etc., and describe the plan for manpower recruitment and budget considerations.

(1) Hospital's Maintenance System and Measures

The medical equipment procured by this project mainly consists of basic medical equipment, and the project basically covers the renewal of existing equipment and supplementation of quantitative shortage. Therefore, it is intended to minimize the burden of maintenance. However, it is necessary to construct an effective system for maintenance as follows, for the purpose of resolving the problems of current maintenance system.

1) Provision of Spare Parts and Expendables Supplies

With respect to the spare parts and expendable supplies required for the maintenance of equipment, it should be stated in the procurement contract that the equipment procurement contractor should ensure the availability of these items for purchase for at least 5 years after the expiration of the warranty, i.e., until the time for renewal of equipment. For the spare parts that may require frequent replacement and expendable supplies, estimates of costs should be submitted in advance to the accounting section of the target hospital. The accounting section then should estimate the costs for the purchase of spare parts and expendable supplies, and make budgetary arrangements.

2) Training of Maintenance Personnel

Maintenance personnel perform rounds of inspection to monitor the condition of facilities and equipment, keep periodic maintenance records, and receive the reports of problems from various departments. After the problems are sorted out by the person in charge and reviewed by the policy-making organization in the hospital, necessary budgetary arrangements are made and orders for repair and maintenance work are placed. Repair of equipment should be commissioned to the manufacturer, depending on the type of equipment and the nature of repair.

3) Training Given by Equipment Procurement Contractor

The equipment procurement contractor should, at the time of equipment installation, dispatch engineers who transfer technical skills concerning the proper operation methods, routine inspection, trouble-shooting, etc. to the relevant personnel of the target hospital. As a part of tender requirements, the equipment procurement contractor should provide operation manuals, maintenance manuals, etc. required for this training.

In this project, training will not cover all types of the procured equipment. Instead, training will be given concerning certain types of equipment that are considered to require training.

Before commissioning of the equipment to the Syrian side, instruction should be given as listed in the following, so that the users and the personnel in charge of maintenance will be able to acquire necessary knowledge:

(i) Methods of routine maintenance (cleaning, adjustment, etc.)
(ii) Methods of operation and servicing (simple trouble-shooting, etc.)
(iii) Methods of management and storage of expendable supplies and spare parts.
(iv) Methods of management and various manuals.

With respect to complicated equipment units, such as diagnostic X-ray units, diagnostic ultrasound units, blood gas analyzers, automatic biochemical analyzers, automatic blood cell counters, electrolyte analyzers, anesthesia machines, artificial respirators, and patient monitors, the focus of training should be placed on the establishment of the practice to detect problems early and contact the manufacturer promptly.

The equipment procurement contractor should provide technical materials such as operation manuals, maintenance manuals, parts lists, drawings, lists of manufacturers, and lists of manufacturers' agencies as specified in the followings. The equipment procurement contractor should, at the time of equipment installation, dispatch engineers who can conduct the training of equipment operators in the proper methods of operation, routine inspection, trouble-shooting, etc.

(i) Operation manuals:
For operation of equipment, for maintenance section, for hospital archives.
(ii) Maintenance manuals:
For maintenance section, for hospital archives.
(iii) Parts lists:
For maintenance section, for hospital archives.
(iv) Drawings:
For maintenance section, for hospital archives.

(v) Lists of manufacturers:
For maintenance section, for hospital archives.

(iv) Lists of manufacturers' agencies:
For maintenance section, for hospital archives.

(2) Rough Estimate of Project Cost

The breakdown of the expenses to be borne by the Syrian side is estimated as follows:

1) Expenses to be borne by the Syrian Side

Category	Total (1,000 Yen)
1) Building improvement work	1,200
2) Electric wiring work	1,000
3) Air conditioning work	1,000
Total	3,200

2) Basis of Estimation

① Date of estimation: June 2001

② Exchange rate: 1 US dollar = 118.91 yen

③ Duration of working design and supervision: approx. 12 months

④ Purchase order: lump sum

⑤ Other: This project will be implemented according to the Japanese grand aid system. It is assumed that the import duties on the materials and equipment, corporate tax on Japanese corporations, value-added tax, and other internal taxes in Syria will be exempted or paid by the Mongolian government. In addition, the Syrian government should take into account the following charges and taxes:

a. Fees for going though formal procedures for delivering the equipment.
b. Customs duties on the materials and equipment.
c. Service charges on the issuance of B/A and A/P.
d. Exemption fees of internal tax and other financial charges and necessary expenses for added-value payment.

To ensure the smooth implementation of the project and effective utilization of the equipment immediately after the installation thereof, the government of Syria is advised to allocate a budget for the above items in a timely manner.

(3) Operation and Maintenance Costs

Because public medical facilities in Syria are providing medical services basically free of charge, it is considered difficult to collect a part of maintenance costs through cost sharing. It is considered that the increased costs must be covered by either reductions in other expenditure items or an increase in the budget from the Ministry of Higher Education. However, the total increase has been estimated to be only about 2.50 million yen, even including the increase due to the biochemical assay apparatus and the CT scanner, because this project mainly consists of the renewal of existing equipment and also because Syria domestically produces reagents, recording paper, and other expendable supplies, allowing low-cost procurement of these items. This amount is about 6% of the maintenance costs of existing equipment, and thus it is not likely to put pressure on the local facility's maintenance budget. Although cost-sharing has not been accepted nationwide, it has partly been introduced at Al Assad Hospital (Damascus), and the introduction of cost sharing is considered as a possibility also at the medical facilities covered by this project.

Table 2-6 shows the revenue and expenditure projections for the 5 years from 2000 to 2004. The projections for 2000 and later are based on the median yearly growth rate over the preceding 3 years. Because both revenues and expenditures have been showing little changes, these estimations assume that there will be no drastic increases.

Table 2-6 Revenue and Expenditure Projections for Aleppo University and Aleppo University Hospital (2000 – 2004)

【Budget of Aleppo University】

Year	2000	2001	2002	2003	2004
Currency	945,305,009	987,049,891	1,030,638,236	1,076,151,453	1,123,674,544
Dollar Equivalence	18,536,898	18,614,016	18,691,454	18,769,215	18,847,299
Yen Equivalence	2,150,280,188	2,159,225,838	2,168,208,704	2,177,228,941	2,186,286,703

【Budget of Aleppo University Hospital】

Currency	271,413,656	279,010,820	295,190,960	321,165,134	359,059,757
Dollar Equivalence	5,428,273	5,580,216	5,903,819	6,423,303	7,181,195
Yen Equivalence	629,679,682	647,305,101	684,843,028	745,103,111	833,018,637

【Breakdown of Budget of Aleppo University Hospital】

Wages	46,475,406	46,912,057	47,352,810	47,797,705	48,246,779
Medicinal Items	67,428,072	67,917,521	68,410,523	68,907,103	69,407,288
Communications, Electricity, Heating	2,015,465	2,055,774	2,096,890	2,138,827	2,181,604
Building Maintenance	568,349	579,716	591,311	603,137	615,200
Medical Equipment Maintenance	10,899,110	10,850,330	11,871,768	12,989,363	14,212,167

Expendable Supplies	9,479,930	13,189,775	20,989,372	37,599,032	74,872,331
Other	130,663,740	133,277,015	135,942,555	138,661,406	141,434,634
Total Amount (S.P.)	267,530,073	274,782,188	287,255,228	308,696,573	350,970,002
Total Dollar Equivalence (US$)	5,350,601	5,495,644	5,745,105	6,173,931	7,019,400
Total Yen Equivalence (Yen)	620,669,769	637,494,675	666,432,129	716,176,049	814,250,405

【Total Medical Equipment Maintenance Costs (Including Expendable Supplies)】

Total Medical Equipment Maintenance Costs (S.P.)	18,787,481	18,670,199	18,553,650	18,437,828	18,322,728
Total Equipment Maintenance (US$)	375,750	373,404	371,073	368,757	366,455
Total Equipment Maintenance (Yen)	43,586,957	43,314,863	43,044,467	42,775,760	42,508,730

Note) Exchange rates: US$1.00 = S.P.50 = 116 yen

These revenue and expenditure projections suggest that the overall balance of the University Hospital's budgets and expenditures will remain in a manageable range after the implementation of this project. However, because the University Hospital's budget situation is still very tight, it is desirable to introduce cost sharing as soon as possible.

(4) Considerations Concerning the Implementation of Cooperation Project

The equipment procured under this project is intended to facilitate more efficient medical practice at the target hospital in accordance with the renovation plan conducted by the Syrian side. For this end, it is necessary to confirm the consistency between the renovation works on the Syrian side and the equipment plan several times according to the stages of implementation. In particular, because the costs for renovation works will arise on the Syrian side, confirmation concerning construction works and equipment utilities must be conducted at the following stages:

① At the time of final confirmation of the content of project: Confirmation of the consistency between the planned equipment and the renovation works (primary-side works).
② At the time of the preparation of tender documents: Confirmation of the consistency between equipment allocation and utility and renovation works.
③ At the time of contracting with dealers: Confirmation of the consistency between the finalized equipment and renovation works.
④ At the time of equipment delivery: Reconfirmation of equipment specifications before shipment, and confirmation of the consistency with the construction-side.

CHAPTER 3

PROJECT EVALUATION AND RECOMMENDATION

Chapter 3 Project Evaluation and Recommendations

3-1Project Effect

3-1-1 Benefit Areas and Population

The aggravation of economic conditions in Syria is reflected in the aging of key hospitals and the lowering of their diagnostic and therapeutic functions, resulting in the deterioration of health care indices. The target facilities of this project are the most important medical facilities positioned at the top of the referral system, and they are also very important from the standpoint of training of medical workers. The qualitative and quantitative improvement of the medical service capabilities of these facilities is expected to contribute to the "qualitative and quantitative enhancement of medical services" proposed the 8th 5-year program (1996-2000).

The benefit areas of this project are Aleppo, Idleb, Deir Ezzor, Hasake, and a part of Hama, which are covered by the services of Aleppo University Hospital and Obstetric and Gynecology Hospital.

3-1-2 Beneficial Effects

Concrete beneficial effects expected from the implementation of this project include the followings;

(1) Direct Beneficial Effects

1) The renewal of aged or unrepairable medical equipment and the supplementation of quantitatively insufficient equipment will enable the target facilities to recover their proper functions and to promote the improvement of medical services both qualitatively and quantitatively.
2) The improvement of equipment at the target facilities will make it possible to conduct more effective practical training of medical students.

(2) Indirect Beneficial Effects

1) The improvement of equipment at the target facilities will improve the accuracy of diagnosis and enable the provision of appropriate medical services for the patients, thus resulting in the shortening of average duration of hospitalization and the lowering of death rate.

2) The recovery of the proper functions of the target facilities will enable them to act as the top referral facilities, such as the enrichment of technical guidance to other medical facilities and appropriate medical care for referred patients.

3-2 Recommendations

(1) Organization and Manpower

1) A system of central management should be established to utilize the limited equipment effectively.

Although the target facilities of this project have medical equipment maintenance/management departments, there is only one person who is In the present system, maintenance and management of equipment are all commissioned to outside dealers. While maintenance works on equipment can be commissioned to outside parties without problems, it is important to enrich the system on the management side.

To maximize the effective use of the procured equipment after the implementation of this project, it is desirable to construct a system of central management, and regular consultation concerning the management of equipment should be held by a project implementation committee consisting of the president of the University, vice-president, director of the University Hospital, director of the Obstetric and Gynecology Hospital, etc. In particular, the present system of management is not sufficient in terms of the management of hospital assets (such as the inventory of existing equipment, grasping the conditions of equipment, and identification of problems), as well as cost management (such as grasping the actual maintenance costs for medical equipment and the detection of unnecessary expenditures). Also from this standpoint, it is desirable to establish a management system under a central responsibility, in addition to the existing maintenance/management departments.

2) Contract medical workers should be employed in sufficient numbers.

The Obstetric and Gynecology Hospital is planned to be established as the expansion from the existing obstetrics and gynecology department of the University Hospital. Because a department will be expanded to a hospital, new medical workers will have to be recruited, in addition to the current personnel working at the University Hospital.

The recruitment of these medical workers have already started. It must be reconfirmed that all necessary personnel must be employed actually as the basic precondition for the management of the hospital. In Syria, medical workers are often hired on a contract basis, rather than permanent employment. This is also the case with the target facilities of this project, where many physicians, nurses, and technicians are working on a contract bases.

(2) Finance and Financial Planning

1) Introduction of the Cost Sharing System

Generally, medical services are offered free of charge in Syria. However, to operate the hospital financially soundly, introduction of the cost sharing system and charging medical fees for certain services will be necessary.

Because of the free medical service system, the target facility is unable to appropriate sufficient funds for the replacement of equipment, as well as for its maintenance and administration. This could become a serious obstacle to the effective operation and the future development and expansion of the Aleppo University Hospital, which is meant to function fully as the top referral hospital in northern Syria. Although the introduction of the cost sharing system will require revision of related laws and regulations, it must be looked into for the sustenance of the Project and the entire medical system of Syria.

2) Financial plans should be made and the balance of income and expenditure should be grasped at least monthly.

It is necessary to keep track of the income and expenditure of each hospital, not only in terms of the current management costs of the hospitals but also setting an eye to future renewal of equipment and improvement of hospital functions. At least, monthly costs of medical equipment costs must be grasped clearly. In addition to the amounts of these costs, the hospital management officials should also continue to examine whether there are unnecessary costs in the present system, and whether or not the employment of only one maintenance personnel has resulted in easy commissioning of simple maintenance works to outside dealers.

3) In addition to securing the funds for paying the O/M costs of the hospital, funds should be reserved for the renewal of equipment due to the passage of the service life of equipment and the aging of equipment.

The results of our field survey indicated that many of the existing equipment items have been used for over 20 years after procurement, and there are problems of the functionality and safety of equipment. To solve these problems for the future, it is necessary to reserve funds for the renewal of equipment, not depending on the implementation of this project. Projections concerning the service life and aging of equipment should be made for this purpose.

3-3 Feasibility of the Project

The target facilities of this project are the most important medical facilities positioned at the top of the referral system, and they are also very important from the standpoint of training of medical workers. Aleppo University hospital has enough ability to prepare the budget, manpower, and facility. Therefore, this project could reach to the Goal, which is the qualitative and quantitative improvement of the medical service capabilities. And also the improvement of equipment at the target facilities will make it possible to conduct more effective practical training of medical students.

3-4 Conclusions

Through the series of studies and evaluation, the feasibility and sustainability of the project was confirmed. This project will meet the Goal and benefit about 9 million inhabitants of northern Syria (including the central area and Mediterranean coasts).

APPENDICES

Annex1 Member List of the Study Team

【Basic Design on the Project】

Name	Role	Institution
Mr. Yasuhiro MORIMOTO	Leader	Second Project Management Division, Grant Aid Project Department, Japan International Cooperation Agency (JICA)
Dr. Kunihiko HIRABAYASHI	Technical Adviser	Bureau of International Cooperation, Medical Center of Japan Ministry of Health, Labor and Welfare
Mr. Takashi YOZA	Project Manager/Hospital Improvement Planner	Medical Engineering & Planning Co,. Ltd.
Mr. Fumihiko FUJITA	Equipment Planner	Medical Engineering & Planning Co,. Ltd.
Mr. Hideaki KANAYAMA	Facility Planner	Medical Engineering & Planning Co,. Ltd.
Mr. Kazumi UENO	Procurement Planner	Overseas Merchandise Inspection Co., Ltd
Mr. Shinji TOHAMA	Surveyor of Present Situation regarding Medical Care	Medical Engineering & Planning Co,. Ltd.

【Explanation Study for the Draft Report on Basic Design on the Project】

Name	Role	Institution
Mr. Yasuhiro MORIMOTO	Leader	Second Project Management Division, Grant Aid Project Department, Japan International Cooperation Agency (JICA)
Dr. Kunihiko HIRABAYASHI	Technical Adviser	Bureau of International Cooperation , Medical Center of Japan Ministry of Health, Labor and Welfare
Mr. Takashi YOZA	Project Manager/Hospital Improvement Planner	Medical Engineering & Planning Co,. Ltd.
Mr. Fumihiko FUJITA	Equipment Planner	Medical Engineering & Planning Co,. Ltd.
Mr. Kazumi UENO	Procurement Planner	Overseas Merchandise Inspection Co., Ltd

Annex 2 Study Schedule (Basic Design on the Project)

No.	Date		Schedule	Team Leader	Technical Adviser
1	19-Jan	Fri.	11:10(JL405)Narita→Paris15:40		
2	20-Jan	Sat.	13:20(AF610)Paris→Damascus19:10		
3	21-Jan	Sun.	09:30 Courtesy call to JICA		
			11:00 Courtesy call to Embassy of Japan		
			12:00 Courtesy call to Ministry of Higher Education		
			13:00 Courtesy call to Ministry of Health		
4	22-Jan	Mon.	09:00 Visiting Damascus Hospital, Damascus→Aleppo		
5	23-Jan	Tue.	09:00 Visiting the University of Aleppo		
			14:30 Visiting Al-Basel Hospital		
6	24-Jan	Wed.	09:00 Visiting Aleppo University Hospital		
			14:30 Meeting with the University of Aleppo		
7	25-Jan	Thu.	09:00 Visiting Ivn-Rassid Hospital		
			09:30 Visiting Al-Basel Center		
			10:00 Visiting Al-Salam Hospital		
8	26-Jan	Fri.	Internal Meeting		Narita→
9	27-Jan	Sat.	09:00 Meeting with Aleppo University Hospital		Damascus
			20:00 Meeting with the persons of Aleppo University		
10	28-Jan	Sun.	Aleppo→Damascus 16:00 Meeting with JICA		Courtesy call to JICA, Embassy of Japan Visiting Damascus Hospital
11	29-Jan	Mon.	09:00Al-Bassel Heart Institute		Damascus→Aleppo
			11:00 Visiting Damascus Hospital, Damascus→Aleppo		
12	30-Jan	Tue.	09:00 Visiting Al-Basel Hospital	Narita→	Aleppo→Damascus
			11:30 Meeting with the University of Aleppo		
13	31-Jan	Wed.	09:00 Meeting with the University of Aleppo	Damascus	Visiting Kneitra Hospital
			12:30 Visiting Al-Basel Hosiptal Project Manager : Aleppo→Damascus		
14	1-Feb	Thu.	09:00 Meeting with Al-Basel Hospital Project Manager: Visiting Ministry of Higher Education, Damascus→ Aleppo	Courtesy call to JICA, Embassy of Japan and Ministry of Higher Education	
15	2-Feb	Fri.	Internal Meeting	Internal Meeting Damascus→Aleppo	
16	3-Feb	Sat.	09:00 Meeting with the University of Aleppo	Meeting with the University of Aleppo	
			13:00 Meeting with the Director of Aleppo University Facility Planner and Surveyor of Present Situation regarding Medical Care: Aleppo→Damascus		
17	4-Feb	Sun.	09:00 Meeting with the University of Aleppo		
18	5-Feb	Mon.	08:00 Discussions of Minutes	Discussions of Minutes	
19	6-Feb	Tue.	09:00 Visiting Department of Health of Aleppo	Signing Minutes	
			11:00 Meeting with Aleppo University		
			20:30 Signing Minutes		
20	7-Feb	Wed.	09:30 Meeting with Aleppo University		
21	8-Feb	Thu.	09:00 Meeting with Aleppo University	Report to JICA, Embassy of Japan and Ministry of Higher Education	
			11:00 Visiting Ivn-Rassid Hospital		
22	9-Feb	Fri.	Internal Meeting	Damascus→	
23	10-Feb	Sat.	09:00 Meeting with the University of Aleppo	Narita	
24	11-Feb	Sun.	09:00 Meeting with the University of Aleppo		
25	12-Feb	Mon.	09:00 Meeting with the University of Aleppo		
			18:00 Meeting with the University of Aleppo		
26	13-Feb	Tue.	09:00 Meeting with the University of Aleppo		
27	14-Feb	Wed.	09:00 Meeting with the University of Aleppo		
28	15-Feb	Thu.	09:00 Meeting with the University of Aleppo		
			12:00 Visiting Department of Health of Aleppo		
29	16-Feb	Fri.	Internal Meeting		
30	17-Feb	Sat.	09:00 Meeting with the University of Aleppo		
			13:30 Visiting Department of Health of Aleppo		
			18:00 Signing Technical Memorandum		
31	18-Feb	Sun.	09:00 Visiting Al-Kindi Hospital		
			12:00 Meeting with Embassor of Japan		
32	19-Feb	Mon.	Aleppo→Damascus		
33	20-Feb	Tue.	09:00 Report to JICA、10:00 Report to Embassy of Japan		
			11:00 SPC, 12:30 Report to Ministry of Higher Education		
34	21-Feb	Wed.	07:15(AF615)Damascus→11:35Paris, Paris17:55(JL406)→		
35	22-Feb	Thu.	13:45Narita		

Annex 2 Study Schedule (Explanation Study for the Draft Report on Basic Design on the Project)

No.	Date		Team Leader and Technical Advisor	Project Manager, Equipment Planner and Cost Planner
1	14-May	Mon.	Narita10:25→Amsterdam15:10	
			Amsterdam17:45→Damascus22:25	
2	15-May	Tue.	Courtesy call to JICA, Embassy of Japan, Ministry of Higher Education and SPC	
			Damascus→Aleppo	
3	16-May	Wed.	Discussion of Minutes with the University of Aleppo	
4	17-May	Thu.	Discussion of Minutes with the University of Aleppo	
5	18-May	Fri.	Internal Meeting	
6	19-May	Sat.	Discussion of Minutes with the University of Aleppo, Signing Minutes	Discussion of Minutes with the University of Aleppo, Signing Minutes, and Site Survey
			Aleppo→Damascus	
7	20-May	Sun.	Report to JICA, Embassy of Japan, Ministry of Higher Education and SPC	Discussion of Specifications of Equipment with the University of Aleppo
			Damascus23:25→	
8	21-May	Mon.	Amsterdam06:30, Amsterdam12:55→	Discussion of Specifications of Equipment with the University of Aleppo
9	22-May	Tue.	Narita09:00	Discussion of Specifications of Equipment with the University of Aleppo
10	23-May	Wed.		Discussion of Specifications of Equipment with the University of Aleppo
11	24-May	Thu.		Discussion of Specifications of Equipment with the University of Aleppo
12	25-May	Fri.		Internal Meeting, Aleppo→Damascus
13	26-May	Sat.		Survey of Local Agents, Transportation companies, and Execution companies
14	27-May	Sun.		Report to JICA, Embassy of Japan, Ministry of Higher Education and SPC
				Damascus23:25→
15	28-May	Mon.		Amsterdam06:30, Amsterdam12:55→
16	29-May	Tue.		Narita09:00

Annex 3 List of Parties Concerned in the Recipient Country

Ministry of Higher Education	
Dr. Wael A. Basha	Deputy Minister of Higher Education, Professor in Damascus University
Eng. Nabil Rifai	Director of International Organization
State Planning Committee	
Dr. Hassan Al-Salman	Director of Technical and Science Cooperation
Ministry of Health	
Dr. Mhamad Eyad Chattey	Minister of Health
Dr. Hassan Al Hai Hussein	Director of International Relations Office
Dr. Mahmoud Dashah	Director, Department of Planning and Statistical
Damascus Hospital	
Dr. Ahmad Humsip	Chief of Resident, Plastic Surgery
Dr. Hesham Shahla	Chief of Stores
Dr. Mhamad Alhamoit	Chief of Physical Therapy, Director
Dr. Assem Ankav	Chief of X-ray dept.
Dr. Hussam Hamdan	Chief of Engineer
Dr. Mhanad Shohm	Physical Technicalist
Dr. Abd Al Hamid Kouwatly	Director, General Surgery
University of Aleppo	
Dr. Mohamed Said Farhood	President
Dr. Abdul Wahed Najib	Vice Rector, Mechanical Engineer
Pr. Dr. Bashir Al-Kateb	Professor, General, Chest and Heart Surgery
Pr. Dr. Nasr Mourad Agha	Dean, Faculty of Medicine, Maternity and Pediatric Section
Pr. Dr. M. Nizar Akil	Vice Dean, Faculty of Medicine, Maternity and Pediatric Section
Dr. Bassam Al-Halabi	Associate Professor, Cardiology
Dr. Gamil Naolo	Chief of Heart Surgery Section
Dr. Ahmad Mansour	Assistant Professor of Mechanical Engineering
Dr. Iskandar Tfankji	Consultant, Pediatric Department

Dr. Abdallah Khoury	Assistant Professor, Pneumology and Allergology
Dr. Mahmoud Nasser	Assistant Professor, Gastroenterology
Eng. Nazar Oglian	Director, Trechnical Engnieer Office
Eng. George Fahbi	Electrical Engineer
Eng. Anwar Hallak	Mechanical Engineer
Eng. Abdol Rahman Jamil	Civel Engineer
Eng. Ahmed Al-Aasi	Manager of Technical Office
Eng. Authman Jebrilli	Mechanical Engineer
Eng. Walicl Nouh	Electrical Engineer
Eng. Zaher Akkad	Mechanical Engineer
Eng. Iman Faress	Civel Engineer
Eng. M. Moujap Al Abed	Physical Educater

Aleppo University Hospital

Pr. Dr. Al-Araje Mohamed Mahe	Director, Orthopedic Surgery Department
Dr. Mhalli Nihad	Medical Director, Surgery Department
Dr. Hassan Kayali	Head of Department of Surgery
Dr. Hassan Masry	Head of Department of Radiology
Dra. Houda Nasser	Head of Department of Anesthesia
Dr. Khayak Imad	Head of Department of Biochemistry
Dr. Ibrahi Al Hadid	Consultant senior Lecturer, Department of Urology
Dr. Mir Serio	Head of Department of Pediatric
Dra. Zohrnwi Reem	Head of Department of Ophthalmology
Mrs. Najua Bitar	Head of Nurse of Department of Outpatinet

Al-Basel Hospital (in Aleppo University)

Dr. Nasilf Bashrif	General Director, Gyn. & Obst.
Dr. Al-Hogam Abduhgattar	Medical Director, Gyn. & Obst.
Dra. Rosetle Abegjian	Administration

Al-Kindi Hospital

Dr. Nihad Kisri	General Director
Dr. Kamal Najoum	Head of Department of Surgery
Dr. Al Cabania Zakagia	Head of Department of Pediatrics
Dr. F. Kanaa	Head of Department of Medicine

Damascus University Hospital (MOHE)

Dr. Ghassan Moasis	Medical Director

Al-Bassel Heart Institute (MOH)

Dr. Ahmad Ziki Sukkar	General Director, Consultant Cardiac Surgeon

Al-Basal Center for Heat Disease and Surgery (MOH)

Dr. Nidal Habbok	Director

Department of Health of Aleppo

Dr. Baslan Baslan	Director
Dr. Fouad M. Fouad	Primary Health Care Manager, General Surgeon
Dra. Areeg Al-Zohormaki	Statistics and Planning Department

Al-Salam Hopital (Private)

Dr. Pharaf El Deane	Director

Embassy of Japan in Syria

Kihichirou AMAE	Embassor
Shouzou MATSUYOSHI	Second Secretary

JICA in Syria

Katsuhiko OZAWA	Director
Tadanori YASUDA	Coordinator

Japanese Center of Aleppo University

Tsutomu YAMAGUCHI	Director

Annex 4 Minutes of Discussions (Basic Design Study)

MINUTES OF DISCUSSIONS ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR IMPROVEMENT OF MEDICAL EQUIPMENT OF THE HOSPITALS
IN THE UNIVERSITY OF ALEPPO IN THE SYRIAN ARAB REPUBLIC

In response to a request from the Government of Syrian Arab Republic (hereinafter referred to as "Syria"), the Government of Japan decided to conduct a Basic Design Study on the Project for Improvement of Medical Equipment of the Hospitals in the University of Aleppo (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Syria the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Yasuhiro Morimoto, Deputy Director, Second Project Management Division, Grant Aid Management Department, JICA, and the Team is scheduled to stay in the country from January 20, 2001 to February 21, 2001.

The Team held discussions with the officials concerned of the Government of Syria, and conducted a field survey at the study area.

In the course of discussions and field survey, 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.

Aleppo, February 6, 2001

Mr. Yasuhiro Morimoto
Leader
Basic Design Study Team
Japan International Cooperation Agency

Dr. Mohamed Said Farhood
President of the University of Aleppo

witness

Mr. Hassan Salman
Director
Scientific and Technical Cooperation
State Planning Commission, Syria

ATTACHMENT

1.Objective of the Project

The objective of the Project is to improve the quality of medical services of the Hospitals in the University of Aleppo through the procurement of medical equipment.

2.Project site

The site of the Project is the Hospitals in the University of Aleppo.

3.Responsible and Implementing Agency

3-1. The Responsible Agency is the University of Aleppo.

3-2. The Implementing Agency is the University of Aleppo.

4.Items requested by the Government of Syria

4-1. The Government of Syria had forwarded the original request in July 1999 and the modified one in November 2000. In the course of discussions, the Syrian side requested to include some of the items described in the original request. The Team confirmed that the items described in Annex 1-1 and Annex 1-2 were finally requested by the Syrian side, and the Team will convey the final request to Japan for the assessment of its eligibility and appropriateness. Items to be included in the Project will be finalized after further study in Japan.

4-2. The Syrian side assigned their own priorities on the items in Annex 1-1.

Note: A: 1st priority B: 2nd priority C: 3rd priority

4-3. The Syrian side strongly requested items related to cardiac surgery as described in Annex 1-2. The Team explained that it could not make any commitment because it failed to obtain necessary data from the Syrian side, but promised that it will report to the Japanese Government for further discussions.

5.Japan's Grant Aid Scheme

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

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

6.Schedule of the Study

6-1. The consultants will proceed to further studies in Syria until February 21, 2001.

6-2. JICA will prepare the draft report in English and dispatch a mission in order to explain its contents around May 2001.

6-3. In case that the contents of the report are accepted in principle by the Government of Syria, JICA will complete the final report and send it to the Government of Syria by August 2001.

7.Other relevant issues

7-1. The University of Aleppo shall take all measures to complete the preparation, renovation and clearance work necessary for the installation of equipment in accordance with the schedule which will be indicated by the mission to be dispatched around May 2001.

7-2. The University of Aleppo shall move the Obstetric and Gynecology Department of the Aleppo University Hospital to the Obstetric and Gynecology Aleppo University Hospital so that the all the items could be utilized immediately after the handing over. The University of Aleppo shall inform the mission to be dispatched around May 2001 of the expected date of the movement.

7-3. When a concrete plan, schedule and procedure of the undertakings described in 7-1. and 7-2. is not explained to nor confirmed by the mission, the related items may be eliminated from the Project.

7-4. The University of Aleppo shall take all measures, including coordination among the relevant authorities of the Government of Syria and preparation of budgetary allocation if any, to ensure prompt execution for unloading, customs clearance at the port of disembarkation.

7-5. The University of Aleppo shall take all measures, including coordination among the relevant authorities of the Government of Syria and preparation of budgetary allocation if any, to exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in Syria with respect to the supply of the products and services under the Project.

7-6. The Syrian side requested the consultant services for operation and maintenance on medical equipment as one of the components of the Grant.

Department	Item No.	Equipment	Priority	Quantity
Radiology				
	RA-01	CT scanner	B	1
	RA-02	X-ray unit with TV	C	*
	RA-03	Automatic film processor	C	*
	RA-04	Film viewing lamp	C	*
	RA-05	Angiography	C	*
	RA-06	Auto injector	C	*
Central Supply and Sterilize Department				
	AU-01	High pressure steam sterilizer	C	*
Central Laboratory				
	CL-01	Automatic urine analyzer	B	1
	CL-02	Spectrophotometer	B	1
	CL-03	General centrifuge	B	1
	CL-04	Table top sterilize	B	2
	CL-05	pH Meter	B	1
	CL-06	Biological microscope	B	2
	CL-07	Fluorescence microscope	B	1
Operation Theater				
	OP-01	Anesthesic machine	A	2
	OP-02	Defibrillator	A	2
	OP-03	Operation table	A	2
	OP-04	Operation light	A	3
	OP-05	Patients monitor	A	TDL
	OP-06	Orthopedic operation table	B	1
	OP-07	Laparoscope set	B	1
	OP-08	CUSA	C	*
	OP-09	Arthroscope set	B	1
	OP-10	Pediatric urethroscope set	B	1
	OP-11	Urine flow examination machine	C	*
	OP-12	Hemo filtration unit	C	*
	OP-13	Electric suction unit	A	4
	OP-14	Electrical surgical unit	A	1
Emergency Section				
	EM-01	Operation table	A	2
	EM-02	Operation light	A	2
	EM-03	Anesthetic machine	A	2
	EM-04	Electric suction unit	A	2
	EM-05	Electrical surgical unit	A	2
	EM-06	Patient monitor	B	2
	EM-07	Heating sterilizer	B	1
Gastroenterlogy				
	GE-01	Gastrofiberscope with TV	B	1
	GE-02	Duodenofiberscope with ERCP set	B	1
	GE-03	Colonofiberscope with TV	B	1
Respiratory				
	RR-01	Broncho-fiberscope with TV	B	1
Cardiology and CCU				
	CC-01	Color doppler echo machine	B	1
	CC-02	Multi channel E.C.G.	A	1
	CC-03	Defibrillator	A	1
	CC-04	Mechanical ventilator	B	TDL
	CC-05	Infusion pump (Syringe Pump	A	TDL
	CC-06	Patient monitor	B	TDL
	CC-07	Pulse oximeter	B	TDL
Teaching Unit				
	TU-01	Audio Visual Unit (Projector)	C	*
Emergency /Ambulance				
	EA-01	Emergency set for Ambulance	B	1

TDL: To be discuss later

Department	Item No.	Equipment	Priority	Quantity
Pediatric				
	PA-01	Pediatric examination set	B	3
	PA-02	Infant examination table	C	*
	PA-03	Operation light stand type	C	*
	PA-04	Neonate resuscitator	A	1
	PA-05	Infant care unit	A	1
	PA-06	Bilirubin meter	A	1
	PA-07	Ultrasonic nebulizer	A	1
	PA-08	Infant incubator	B	TDL
Gynecology				
	GY-01	Gynecological examination instrument set	C	*
	GY-02	Electric suction unit	A	TDL
	GY-03	Freezing therapeutic device	C	*
	GY-04	Heating sterilizer	B	1
	GY-05	Dressing carriage	B	TDL
	GY-06	Wheel chair	B	TDL
Obstetric				
	OB-01	Trans vagina echo machine	C	*
	OB-02	Fetal Doppler monitor	A	2
	OB-03	Pelvimeter	B	1
	OB-04	Height and Weight scale	B	3
	OB-05	Obstetric examination instrument set	C	*
	OB-06	Heating sterilizer	B	1
Neonatology				
	NN-01	Infusion pump	B	TDL
	NN-02	Direct retinoscope	B	1
	NN-03	Bilirubin meter	B	1
	NN-04	Fetal monitor unit	B	1
	NN-05	Ultrasonic nebulizer	B	1
	NN-06	Laryngoscope set for infant	B	1
Operation Theater of the Obstetric and Gynecology Aleppo University Hospital				
	NO-01	Electric suction unit	A	TDL
	NO-02	Defibrillator	A	1
	NO-03	Infant laryngoscope	B	2
	NO-04	Obstetric operation instrument set	B	2
	NO-05	Gynecological operation instrument set	B	2
	NO-06	Laparoscope operation set	B	1
	NO-07	Washing hand device	C	*
	NO-08	Pulse oximeter	A	2
Central Laboratory of the Obstetric and Gynecology Aleppo University Hospital				
	NC-01	Haemoglobinometer	C	*
	NC-02	Blood Gas Analyzer	C	*
	NC-03	Automatic Urine Analyzer	C	*
	NC-04	K/Na/Cl/Ca Analyzer	C	*
	NC-05	Centrifuge	C	*
	NC-06	Deep Freezer	C	*
	NC-07	Blood Bank Refrigerator	C	*
	NC-08	Blood Cell Counter	C	*
Function Examination Section for the Obstetric and Gynecology Aleppo University Hospital				
	FE-01	One channel E.C.G.	B	1
	FE-02	Three channel E.C.G.	B	1
	FE-03	Color doppler echo machine	C	*
Family Planning Section of the Obstetric and Gynecology Aleppo University Hospital				
	FP-01	Video with TV set	B	1
	FP-02	Phantom sets for family planning education	A	1
	FP-03	Basic examination set for family planning	B	1

TDL: To be discuss later

Department	Item No.	Equipment	Quantity
Equipment for Coronary Care Unit			
	HS-01	Patients Beds (ICU Bed)	24
	HS-02	Central Monitoring System for 12 Bedside	1
	HS-03	Defibrilator	4
	HS-04	I.V. Pumps	24
	HS-05	Single Chamber Temporary Pacemaker	4
Equipment for Catheterization Laboratory			
	HS-06	X-Ray Tube, Image Intensifier/DSA (for Heart Catheterization)	2
	HS-07	Bedside Monitor with Recorder	1
	HS-08	Defibrilator	1
	HS-09	Ethylene Oxide Gas Sterilizer	1
	HS-10	Lead Aprons	10
	HS-11	Single Chamber Temporary Pacemaker	2
	HS-12	Tools of Cathetrization Needed for 500 Patinets	
	HS-13	Power Injector	2
	HS-14	Monitoring System for Hemodynamic Study	2
Equipment for Cardiac Non-Invasive Laboratory			
	HS-15	Treadmill Exercise System	1
	HS-16	Color Flow Cardiac Ultra Sound System with Various Probes	1
	HS-17	Multi-ch Interpretive Electrocardiograph	1
	HS-18	Image Intensifier- Portable X-Ray	1
	HS-19	Instrument for Thallium and Tc Studies	1
	HS-20	Electrophysiologic Stimulator	1
Equipment for Open Heart Surgery			
	HS-21	Cardiopulmonary Pump (4 pumps base) Supplied with accessories and optional parts	2
	HS-22	Hearting & Cooling System for Operating Theatres	2
	HS-23	Hearting & Cooling System for ICU	1
	HS-24	Intra-Atic Balloon Pump	2
	HS-25	Central Monitoring System for 12 Bedside	1
	HS-26	Defibrillator	2
	HS-27	Single Chamber Temporary Pacemaker	2
	HS-28	I.V. Pumps	12
	HS-29	Surgical Tools	2
	HS-30	Anticoagulation Monitoring System	2
	HS-31	Fridge-Freezer	1
	HS-32	Operation Table	2
	HS-33	Anesthesia System	2
	HS-34	Lightening for Theatre	2
	HS-35	Temperature Sterilizing System	1
	HS-36	Theatre Headlight	2
	HS-37	Stretcher (Electric Beds)	2
	HS-38	Disposable Tools for 100 patients Components: 1) Hollow Fiber Oxygenetor 2) Blood Circuit for Heart Lung Machine 3) Arterial Filter 4) Holder for Oxygenetor (Adult) 5) Holder for Oxygenetor (Children) 6) Sucker 33 cm 13 7) Venous Return Catheter 8) Cardioplegia Cannula 9) Arterial Cannula 10) Vent Catheter 11) Cardioplegia Circuit	 50 50 50 1 1 100 100 50 50 50 50
Equipment for Open Heart Surgery - Cardiac Unit Center			
	HS-39	Mechanical Ventilators	6
	HS-40	Blood Gas Analyzer	1
	HS-41	Ethylene Oxide Gas Sterilizer	1
	HS-42	Complete Dyalisis Unit	2

Japan's Grant Aid Scheme

1. Grant Aid Procedures

1) Japan's Grant Aid Program is executed through 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 the Governments of Japan and the recipient country)

2) Firstly, an application or request for a Grant Aid project submitted by a 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 (Japan International Cooperation Agency) 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.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereafter referred to as "the Study") conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a basic document necessary for the

appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

a) Confirmation of the background, objectives, and benefits of the requested Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation,
b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view,
c) Confirmation of items agreed on by both parties concerning the basic concept of the Project,
d) Preparation of a basic design of the Project,
e) Estimation of the costs 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.
The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations in the recipient country through the Minutes of Discussions.

2) Selection of Consultants
For the smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firms(s) based on proposals submitted by interested firms. The firm(s) selected carry(ies) out the Basic Design Study and write(s) a report, based upon terms of reference set by JICA.
The consulting firm(s) used for the Study which is (are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

3. Japan's Grant Aid Scheme

1) What is Grant Aid?
The Grant Aid Program provides a recipient country with non-reimbursable funds needed to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under the

principals in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)
Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, 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 the one fiscal year in which the Cabinet approves the Project for. Within the fiscal year, all procedure such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed. However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When both Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of the third country. However the prime contractors, namely, consulting contracting 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 "Verification"
The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

6) Undertakings required of the Government of 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 and to clear, level and reclaim the land prior to commencement of the construction,
b) To provide facilities of the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,
c) To secure buildings prior to the procurement in case the installation of the equipment,
d) To ensure 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,

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,

g) To bear an advising commission of an authorization to pay (A/P) and payment commissions to the bank, with which the Government of the recipient country opens an account for the Project.

7) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and the equipment purchased under the Grant Aid properly and effectively and to assign the necessary staff for operation and maintenance of them as well as to bear all the 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 Arrangements (B/A)

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

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

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 BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF MEDICAL EQUIPMENT OF THE HOSPITALS IN THE UNIVERSITY OF ALEPPO IN THE SYRIAN ARAB REPUBLIC (EXPLANATION ON DRAFT REPORT)

In January, 2001, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Basic Design Study Team on The Project for Improvement of Medical Equipment of The Hospitals in The University of Aleppo (hereinafter referred to as "the Project") to The Syrian Arab Republic (hereinafter referred to as "Syria"), and through discussions, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the study.

In order to explain and to consult the Syrian side on the components of the draft report, JICA sent to Syria the Draft Report Explanation Team (hereinafter referred to as " the Team "), which is headed by Mr. Yasuhiro Morimoto, Deputy Director, Second Project Management Division, Grant Aid Management Department, JICA, from May 14 to May 27, 2001.

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

Aleppo, May 18, 2001

Mr. Yasuhiro Morimoto
Leader
Draft Report Explanation Team
Japan International Cooperation Agency

Dr. Mohamed Said Farhood
President of the University of Aleppo

Witness

Mr. Hassan Salman
Director
Scientific and Technical Cooperation
State Planning Commission, Syria

ATTACHMENT

1. Components of the Draft Report

The Government of Syria agreed and accepted in principle the components of the draft report explained by the Team. The items finally requested by the Syrian side are listed in Annex of this Minutes, in which some items were added to the request after signing of the Minutes of Discussions on February 6, 2001. Both parties confirmed that the items to be included in the Project would be finalized after further analysis in Japan.

2. Japan's Grant Aid scheme

The Syrian side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Syria as explained by the Team and described in Annex-2 and Annex-3 of the Minutes of Discussions signed by both parties on February 6, 2001.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the Government of Syria by September, 2001.

4. Other relevant issues

4-1. The University of Aleppo shall take all measures to complete the preparation, renovation and clearance work necessary for the installation of a CT Scanner and other equipment in accordance with the schedule which both parties confirmed in the course of discussion.

4-2. The University of Aleppo explained that the Obstetric and Gynecology Department of the Aleppo University Hospital has

started to move to the Aleppo University Hospital of Obstetric and Gynecology (hereinafter referred to as "the OBGY hospital") and it would have been completed around July, 2001.

4-3. The University of Aleppo shall take all measures, including coordination among the relevant authorities of the Government of Syria and preparation of budgetary allocation if any, to ensure prompt execution for unloading, customs clearance at the port of disembarkation.

4-4. The University of Aleppo shall take all measures, including coordination among the relevant authorities of the Government of Syria and preparation of budgetary allocation if any, to exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in Syria with respect to the supply of the products and services under the Project.

4-5. The University of Aleppo strongly requested that technical guidance on operation and maintenance of the CT Scanner, which would be executed as a component of installation work, should be longer in period and more intensive in content than usual one.

4-6. The University of Aleppo referred to their expectation of receiving future assistance of the equipment related to cardiac surgery from Japan, which was not included in the Project.

Requested Equipment List

Item No.	Department	Equipment	Q'ty	Remark
RA - 1	Radiology	CT scanner	1	
CL - 1	Central Laboratory	Table top sterilizer	2	
OP - 1	Operation Theater	Anesthesia machine	2	
OP - 2	Operation Theater	Defibrillator	2	
OP - 3	Operation Theater	Operation table	2	
OP - 4	Operation Theater	Operation light	3	
OP - 5	Operation Theater	Patients monitor	2	
OP - 6	Operation Theater	Orthopedic operation table	1	
OP - 7	Operation Theater	Laparoscope set	1	
OP - 8	Operation Theater	Arthroscope set	1	
OP - 9	Operation Theater	Pediatric urethroscope set	1	
OP - 10	Operation Theater	Electric suction unit	4	
OP - 11	Operation Theater	Electrical surgical unit	1	
OP - 12	Operation Theater	Endoscopic table	1	
EM - 1	Emergency Section	Operation table	2	
EM - 2	Emergency Section	Operation light	1	
EM - 3	Emergency Section	Anesthesia machine	2	
EM - 4	Emergency Section	Electric suction unit	2	
EM - 5	Emergency Section	Electrical surgical unit	1	
EM - 6	Emergency Section	Patient monitor	2	
EM - 7	Emergency Section	Heating sterilizer	1	
EM - 8	Emergency Section	Examination Set for Emergency	1	*
EM - 9	Emergency Section	Resuscitation unit	1	
EM - 10	Emergency Section	Defibrillator	1	
GE - 1	Gastroenterlogy	Gastrofiberscope with TV	1	
GE - 2	Gastroenterlogy	Duodenofiberscope with ERCP set	1	
GE - 3	Gastroenterlogy	Colonofiberscope with TV	1	
GE - 4	Gastroenterlogy	Endoscopic table	2	
RR - 1	Respiratory	Bronchofiberscope with TV	1	
RR - 2	Respiratory	Endoscopic table	1	
CC - 1	Cardiology and CCU	Color doppler echo machine	1	
CC - 2	Cardiology and CCU	Multi channel E.C.G.	1	
CC - 3	Cardiology and CCU	Defibrillator	1	
CC - 4	Cardiology and CCU	Mechanical ventilator	2	
CC - 5	Cardiology and CCU	Syringe pump	1	
CC - 6	Cardiology and CCU	Central monitoring system	1	
CC - 7	Cardiology and CCU	Examination Set for CCU	1	*
PA - 1	Pediatric	Neonate resuscitation unit	1	
PA - 2	Pediatric	Infant care unit	1	
PA - 3	Pediatric	Ultrasonic nebulizer	4 #	
PA - 4	Pediatric	Infant incubator	3	
PA - 5	Pediatric	Portable echography	1	
PA - 6	Pediatric	Infant incubator for transportation	1	
PA - 7	Pediatric	Examination set for Pediatic	1	*
PA - 8	Pediatric	Infusion pump	2	
PA - 9	Pediatric	Bilirubin analyzer with Hematocrit,centrifuge	2 #	

Requested Equipment List

Item No.	Department	Equipment	Q'ty	Remark
GY - 1	Gynecology	Electric suction unit	5	
GY - 2	Gynecology	Heating sterilizer	1	
GY - 3	Gynecology	Dressing carriage	4	
GY - 4	Gynecology	Wheel chair	3	
GY - 5	Gynecology	Colposcope	1	
GY - 6	Gynecology	Examination set for Gynecology	1	*
OB - 1	Obstetric	Fetal doppler monitor	2	
OB - 2	Obstetric	Examination set fot Obstetric	1	*
NN - 1	Neonatology	Infant incubator for transportation	1	
NN - 2	Neonatology	Examination set for Neonatology	1	*
NN - 3	Neonatology	Bilirubin analyzer with Hematocrit centrifuge	1	
NO - 1	Operation Theater of Ob/Gy	Electric suction unit	3	
NO - 2	Operation Theater of Ob/Gy	Defibrillator	1	
NO - 3	Operation Theater of Ob/Gy	Infant laryngoscope	2	
NO - 4	Operation Theater of Ob/Gy	Obstetric operation instrument set	2	
NO - 5	Operation Theater of Ob/Gy	Gynecological operation instrument set	2	
FE - 1	Function Examination Section of Ob/Gy	Multi channel E.C.G.	2	
FP - 1	Family Planning Section of Ob/Gy	Phantom sets for family planning education	1	
OC - 1	Out Patient Clinic	Examination set for Out Patient Clinic	1	*
OC - 2	Out Patient Clinic	Pulse oximeter	5 #	
OC - 3	Out Patient Clinic	Gypsum cutter	1	
OC - 4	Out Patient Clinic	Defibrillator	1	
OC - 5	Out Patient Clinic	Electric suction unit	2	
OC - 6	Out Patient Clinic	Ultrasonic nebulizer	2	
OC - 7	Out Patient Clinic	Resuscitator	2	
OC - 8	Out Patient Clinic (Ophthalmology)	Slit lamp	1	
OC - 9	Out Patient Clinic (Ophthalmology)	Sight tester	1	
OC - 10	Out Patient Clinic (Ophthalmology)	Contact tonometer	1 #	
OC - 11	Out Patient Clinic (Ophthalmology)	Ophthalmoscope direct and indirect	1	
OC - 12	Out Patient Clinic (Ophthalmology)	Automatic projector	1	
OC - 13	Out Patient Clinic (Ophthalmology)	Auto-refractometer	1	
OC - 14	Out Patient Clinic (Laboratory)	Automatic urine analyzer	1 #	
OC - 15	Out Patient Clinic (Laboratory)	Automatic chemical analyzer	1 #	

Note) # mark: Content of Examination set shall be finalized by further studies.
* mark: Refer to Supplement.

Component of Examination set

Item No.	Department	Sr. No.	Equipment	Q'ty
EM - 8	Examination set for Emergency	1	Sphygmomanometer	3
		2	Stethoscope	3
		3	Diagnostic set	3
		4	Tongue set	3
		5	Hammer set	3
		6	Speculum set	3
		7	Height scale	3
		8	Weighing scale	3
		9	Laryngoscope	3
CC - 7	Examination set for CCU	1	Sphygmomanometer	3
		2	Stethoscope	3
		3	Diagnostic set	3
		4	Tongue set	3
		5	Hammer set	3
		6	Speculum set	3
		7	Height scale	3
		8	Weighing scale	3
		9	Laryngoscope	3
PA - 7	Examination set for Pediatric	1	Sphygmomanometer	5
		2	Stethoscope	5
		3	Diagnostic set	5
		4	Tongue set	5
		5	Hammer set	5
		6	Speculum set	5
		7	Height scale	5
		8	Weighing scale	5
		9	Laryngoscope	5
GY - 6	Examination set for Gynecology	1	Sphygmomanometer	5
		2	Stethoscope	5
		3	Diagnostic set	5
		4	Tongue set	5
		5	Hammer set	5
		6	Speculum set	5
		7	Height scale	5
		8	Weighing scale	5
		9	Laryngoscope	5
OB - 2	Examination set for Obstetric	1	Sphygmomanometer	5
		2	Stethoscope	5
		3	Diagnostic set	5
		4	Tongue set	5
		5	Hammer set	5
		6	Speculum set	5
		7	Height scale	5
		8	Weighing scale	5
		9	Laryngoscope	5
NN - 2	Examination set for Neonatology	1	Sphygmomanometer	3
		2	Stethoscope	3
		3	Diagnostic set	3
		4	Tongue set	3
		5	Hammer set	3
		6	Speculum set	3
		7	Height scale	3
		8	Weighing scale	3
		9	Laryngoscope	3
OC - 1	Examination set for Out Patient Clinic	1	Sphygmomanometer	5
		2	Stethoscope	5
		3	Diagnostic set	5
		4	Tongue set	5
		5	Hammer set	5
		6	Speculum set	5
		7	Height scale	5
		8	Weighing scale	5
		9	Laryngoscope	5

Note) Content of Examination set shall be discussed and finalized after the Siging of Minites.