3-3-3 Outline of Equipment

(1) Expendables and Semi-expendables (medical material) Equipment

Taking the shortages of various items into consideration, the medical equipment planned for the four mainstay hospitals in Ulan-Bator City, the District Hospitals and the various Aimak Hospitals level, Somon and Somon Joint Health Institutions level hospitals were simple diagnosing equipment such as Stethoscopes, Thermometers etc., equipment to diagnose the cause of external wounds, sprains, lacerations, fractures and the extent of injuries as equipment common to all departments regardless of whether for child or adult patients. Minor Surgery Instruments (Sutures, Needles, etc.) for treating out patients with light ailments and expendables such as Suture Needles, and semi-expendables such as Stomach and Urine Catheters, Endotracheal Tubes, etc., were also included. These equipment are planned the mainstay hospitals from Ulan-Bator City and Aimak hospitals to Somon level Institutions.

(2) Basic Equipment

1) Equipment for Clinical Laboratory

a) Equipment for Biochemical Tests and Blood Tests

Blood tests may be divided broadly into biochemical tests and blood tests. In the biochemical test, the content of the serum such as iron, magnesium, phosphorus, and inorganic substances such as protein and bilirubin are calculated. In the blood test, the content of the blood such as number of erythrocytes, leukocytes and plastocyte are calculated and the shape of these contents are examined. The basic related equipment planned for these tests are as shown below. These equipment are planned for hospitals from Aimak level to the four mainstay hospitals of Ulan-Bator.

* Spectrophotometer
* Colorimeter
* Pipette
* Microscope
* Hemacytometer (Manual Type)
* Centrifuge

b) Equipment for Bacteria Tests

This equipment is for the qualitative and quantitative examination of the presence of bacteria in blood, bone marrow fluid, urine, sputum, and fecal

matter of organisms. Since susceptibility to chemical treatment of pathogens will be examined after finding the biomass from the test matter and deciding the type and form of diagnosis as reference for treatment, the following equipment are planned for Aimak level hospitals to the four mainstay hospitals of Ulan-Bator City.

* Microscope
* Anaerobic Jar

c) Equipment for Pathologic Tests

Although pathological examination specimens have been prepared in the past from surgical operation and pathological autopsy materials, and microscopic diagnoses are being conducted, the proportion of examinations of specimens with Hypodermic biopsy and Endoscope is also, recently, on the increase in Mongolia together with cytodiagnosis of cells in which cells that have separated in the body fluid are examined. The quipment capable of coping with these examinations were followings.

* Microscope
* Microtome (Coldtome)
* Centrifuge
* Molding Instrument

2) Ophthalmic Equipment

Retinoscopes for examining changes with time and recording changes due to high blood pressure, arteriosclerotic retina disease, diabetic retina disease, papill edema and other retina changes, Slit Lamps for examining clouding of the cornea and extent of cataracts, checking depth of change in addition to diagnosis of iritis, and Opthalmoscopes to grasp the extent of depression and the approximate value of refraction were planned to provide.

3) Equipment for Obstetrics and Gynecology

Gynecological Examination Tables and unit for overall diagnosis and treatment, including gynecological diseases, Colposcopes effective for improving diagnostic capability of internal examinations, and Portable Doppler Fetus Detectors for early discovery of premature births and miscarriages because of the high neonatal death rate in Mongolia were planned for the mainstay hospitals in Ulan-Bator centered on the National Center for M.C.H.

(3) Modern Equipment and Expensive Equipment

1) Endoscope

Upper Digestive Tract Fiberscopes principally for routine screening for upper digestive tract diseases of the esophagus, stomach and duodenum, and equipped with a device enabling polypectomy (for removing polyps with endoscope), Duodeno Fiberscopes highly effective for diagnosing duodenal ulcers, which is difficult with X-ray diagnosis, observing progress of treatment and judging recovery, diagnosing cancer of the nipples, and which is recently being applied in radical operations, and Lower Digestive Tract Fiberscopes, which can also be used for polypectomy, for examining the lower digestive tract for diseases from the colon to the ileocecal region are planned for the mainstay hospitals in Ulan-Bator.

2) Ultrasound Scanner

Ultrasound Scanners available for a wide range of diagnosis is planned to be installed at the National Center for M.C.H. Similarly, some portable type Ultrasound Scanners are expected to be furnished in coumpliance with the request of the First Hospital and Oncological Center under this Project so that these institutions may use them in the wards and regional clinical activity, covering the shortage of the existing equipment. The Oncological Center is to be provided with various type of probes for expanding present examination capability while having an eye on the convertibility with the existing equipment. In addition, excavator adaptors and needles are to be attached as accessories when installing the Ultrasound Scanners so that physicians involved may use them for ultrasound scanner-oriented biological examination and diagnosis and treatment including drainage. In addition, video printers will also be furnished for use in recording and training.

3) Equipment for Surgery, Anesthesia and Recovery Room

Equipment planned for the operating room include Operating Lights, Universal Operating Tables, Electro-Surgical Units and Suction Units, etc. The Operating Light is the removable type and suitable for microscope surgery. The Operating Table is a universal type suitable for general surgery. Equipment for anesthesia and the recovery room are an Anesthesia Apparatus, Respirator, and Bedside Monitoring System. Since over half of the surgical operations are conducted under general anesthesia, Anesthesises Apparatuses are planned and Respirator are necessary to control respiration of the patient under general anesthesia and recovery and sustaining of respiration after the operation. The Bedside Monitoring System is equipment required to assure the safety of the patient during an operation by monitoring the physiological functions during the operation (e.g., electrocardiogram, body temperature, respiratory count and pulse). This system is therefore planned for installation in the mainstay hospitals at Ulan-Bator, District Hospitals and also in Aimak level hospitals.

One Artificaial Dialysis Unit for Children use is expected to be installed in the National Centre for M.C.H. under thfis project. The First Hospital will be provided with correlated expendables and fittings enabling the continuous use of the existing Artificial Dialysis Unit.

4) Equipment for Clinical Laboratory

Tests of clinical examinations has advanced considerably in Japan to the extent that accurate test results can be obtained simply and quickly, automation is still not advanced in Mongolia and the actual need for such a capability at present is a matter of concern. Although simplification of use is recognized, conversely, it is a fact that scrupulous checks are required in controlling the accuracy of the equipment, and also that steady procurement of reagents and expendables required to realize the primary objective of the equipment will greatly affect its effective use. However, the following equipment was included in this Project for the four mainstay hospitals in Ulan-Bator on a test base regarding automation.

* Blood Gas Analyzer
* Elebtrolyte Analyzer
* Automatic Blood Cell Counter (RBC, WBC; HGB, HCT)

5) Equipment for Physiological Function Tests
(Test of Heart Function, Lung Function and Electroencephalograph)

Equipment such as Electrocardiographs used for supplementary diagnosis of arrhythmia, electrolyte ataxy, and coronary heart disease, and also for rehabilitation and examination before surgery of respiratory patients, Spirometers used for testing lung functions were planned for the four mainstay hospitals of Ulan-Bator City.

6) X-ray Diagnostic Equipment

Remote Control Type X-ray TV System was planned since the patients are observed through lead glass from a separate control room and the operator can converse with the patient and observe position changes on an X-ray TV monitor, select fluoroscopy radiation, carry out pressure operations, instant X-ray photography, and selection of fluoroscopic conditions, and since the operator can be completely protected from exposure to X-rays. The hospitals for which these are planned are the mainstay hospitals in Ulan-Bator and the various Aimak General Hospitals. Regarding the operating situation of Mongorian side as stated in Page 157 (General-purpose Radiography System and Fluoroscopic Radiography System are operated by one operating panel), General-purpose Radiography System having a similar function of existing system would be also planned be be procured.

3-3-4 Maintenance and management Plan

(1) System and Method of Maintenance and Management

A system for effective use of the planned equipment will be necessary to attain the anticipated objectives of this Project. From the functions and characteristics of the medical equipment in particular, there are those that are used on a routine basis and those that are most effective in an emergency. Depending on the type, there are therefore those that are used frequently and those that are not used frequently but are required unexpectedly. The system must therefore be such that the medical equipment are always in a usable state so they can be used at any time.

Several engineers (repair engineers) and technicians (semi-engineers) will be stationed at General Hospitals and Special Hospitals as the national centre, District Hospitals and each Aimak General Hospital, which are the object facilities of this Project, and a maintenance and management system will be established for the equipment on hand, so it is judged that maintenance and management will be possible in relation to the equipment.

The target of this Project is uniform improvement of treatment from the Somon level to the centre level and, though priority is placed on repair of basic equipment, this Project will include new equipment, though few in number, for which repair techniques must be acquired by the present staff taking into consideration transition of medical treatment to automation in Mongolian People's Republic.

The following means are listed as the methods of maintenance and management.

1) Maintenance and Management through Own Efforts

Standard management of medical equipment included in this Project shall be implemented in each hospital in accordance with the Operation Manual and Service Manual supplied with the equipment.

2) Maintenance Centre, and Repair by Manufacturer

Recent medical equipment has become less prone to breakdowns since mechanically operated parts are being replaced by electronics. However, once trouble occurs, trouble-shooting will be difficult in most cases because of the complex internal mechanisms. Typical equipment of this nature are Bedside Monitoring Systems, electronically controlled Respirators, Laboratory Equipment, Ultrasound Scanners and X-ray Diagnostic Equipment. In Mongolia, the various medical organizations presently request repairs of special equipment repair and assembly organs when repair is beyond the capacity of each hospital unit. It will also be necessary to request repairs directly of the manufacturer in relation to high precision equipment.

As already explained, it may be said that priority should be placed on equipment that can be repaired in the Maintenance Centre in Mongolia and those

on which routine maintenance and checks are within the capability of each hospital.

3) Establishment of Maintenance and Management System in each Facility (Hospital)

Checks and repairs before and after use are essential to maintain efficient performance of equipment and this is especially true of medical equipment. It is desirable that routine checks be carried out by the medical staff using the equipment. Establishment of such the system will therefore be necessary in which a training program is set up for guidance in routine checking methods to the medical staff of each object facility (hospital) to be conducted adequately and their cooperation can be obtained in maintenance and management of the medical equipment. In addition, as far as main equipment concerns, it is desirable to cope with a situation by the Mongorian side to provide a good guidance to medical equipmet personnels who should come and study gethering together at the same time when the direction over the methed of operation and repair is carried out by the Japanese engineers despatched from related manufacutures.

4) Cooperation System after Implementation of the Project

Of the medical equipment in this Project, there are those that require daily expendables. For diagnosis, they are various recording papers for Electrocardiographs and Ultrasound Scanners, and reagents and special gases for Laboratory Equipment. If stocks of these expendables become depleted, operation of the equipment will become impossible. Since the equipment used in this Project will all be Japanese products, it means that Mongolia will have no means of procuring practically any of the expendables in that country. It will therefore be necessary to give adequate consideration in relation to means of procurement of expendables and spare parts associated with the equipment in this Project, and consideration will also be necessary on establishing a cooperative system to maintain the effectiveness of this Project in the future.

(2) Estimation of Maintenance and Running costs

1) Costs Involved in Procuring Expendables and Spare Parts

Since the procurement cost of expendables and spare parts required for operation of the equipment will be influenced by the frequency of use, it will be necessary to grasp this based on experience of trials over a fixed period of time. However, since statistics on procurement costs of expendables for existing Japanese equipment in Mongolia are not clear, the unit cost of expendables for each type of equipment procured will be calculated in line with the usage conditions of the pertinent part in country.

Cost estimation of expendables and spare parts for 1 year are calculated as belows.

Department		
* Ultrasound Diagnostic Equipment	¥1,889,000.-	(51,750Tug)
* Equipment for Surgery, Anesthesia and Recovery Room	¥3,726,600.-	(102,080Tug)
* Equipment for Clinical Laboratory	¥6,142,000.-	(168,270Tug)
* Pulmonary Function Equipment	¥526,000.-	(14,410Tug)
* Equipment for Ear, Nose, Throat	¥160,000.-	(4,380Tug)
* Equipment for Dental	¥140.000.-	(3,840Tug)
* X-ray Diagnostic Equipment	¥4,800,000.-	(131,510Tug)
Total	¥17,383,001.-	(476,240Tug)

2) Cost for Periodic Checks

Of the object equipment, there are those that require periodic checks by engineers in addition to routine checks. Periodic checks are indispensable for efficient use of the equipment over many years. This estimate was calculated based on information from the manufacturer. This estimate takes into consideration dispatching of engineers from Japan.
(These costs are excluding of an air fare and accommodation for the dispatching engineers.)

-1. Technical Expenditure

* Remote Control Type X-ray TV Seytem and General-purpose Radiography System	2 Engineers	¥250,000.-(6,850Tug)
* Ultrasound Diagnostic Equipment	1 Engineer	¥100,000.-(2,740Tug)
* Equipment for Clinical Laboratory	1 Engineer	
Blood Gas Analyzer		¥100,000.-(2,740Tug)
Electrolyte Analyzer		¥80,000.-(2,190Tug)
Blood Cell Counter		¥100,000.-(2,740Tug)
* Electrocardiograph and Bedside Monitoring System	1 Engineer	¥100,000.-(2,740Tug)
Total	5 Engineers	¥730,000.-(20,000Tug)

-2. Air Fare and Staying Fee

Unit Price : Air Fare @¥215,600.- (5,907 Tug)
: Staying Fee @¥11,600.- (317.8 Tug)

5 engineers x 6 days

Air Fare ¥215,600.- x 5 engineers = ¥1,078,000.-
(29,534 Tug)

Staying Fee ¥11,600.- x 6 days x 5 engineers
= ¥348,000.- (9,534 Tug)

Total = ¥1,426,000.-
(39,038 Tug)

-1. and -2. Total ¥2,156,000.- (Japanese Yen) (59,068 Tug)

3-4 Technical Cooperation

At present, over 60 percent of the medical equipment used in Mongolia were made in the Soviet Union and the balance in Eastern Europe. Import and usage of Japanese equipment such as Endoscopes, Ultrasound scanners, CT Scanners, and Cineangio X-ray Diagnostic Systems commenced from about 1986, but it may very well be said that experience in relation to repair techniques of Japanese equipment are practically nil. Since this Project will be imple-

mented centered on Japanese equipment, acqusition of repair techniques on some of the Japanese equipment will be a matter of urgency. Although the soundness of basic repair techniques of the Mongolian engineers has already been explained, transfer of technology relative to the major equipment will be desirable within the scope of the grant aid from Japan. However, request of the Technical Cooperation such as short-term assignment experts, training in Japan in the field of operational and maintenance techniques of Clinical Laboratory Equipment and Automatic Dialysis Unit, and training in Japan the engineers of the Maintenance Centre will be requested in the near future.

Training of personnels in charge of planning policies of the MHSS are requested by the Mongolian side for the effective implementation of this Project and for investigation of items necessary for consideration on the strategy of modernization of medical status of Mongolia.

CHAPTER 4

BASIC DESIGN

CHAPTER 4 BASIC DESIGN

4-1 Design Policy

(1) Policy Relative to Natural Conditions

The object facilities (hospitals) of this Project are scattered throughout practically all of the Mongolian People's Republic. Of the equipment included in this Project, there is practically none for which the place of installation is influenced by the natural environment. However, prevention of static electricity caused by the dry climate of Mongolia must be considered because of the special nature of the precision medical equipment.

(2) Policy Relative to Equipment Procurement from Third Countries

Judging from the present conditions, procurement of equipment which are to be repaired will be from the Soviet Union and Eastern Europe. However, under the Japanese Grant Aid System the equipment suppliers should be Japanese trading firms. Hence difficulties in managing this Project are anticipated in such aspects as the process from delivery to shipment, after service of the equipment and so forth. In relation to the introduction of Japanese equipment in the Mongolian People's Republic, it is basically considered that procurement of Japanese equipment is appropriate since its accuracy is higher than equipment from the Soviet Union and Eastern Europe, and althouhgh Japanese equipment presently introduced in Mongolia few in number, it is highly evaluated and no problems have been experienced in its usage. It is necessary to consider over the procurement of equipment from the third country when the Mongolian Goverment strongly request it in the aspects of function, price and maintenance services.

(3) Policy Relative to Maintenance and Operation Capability of the Implementing Organization.

Cost calculations are being conducted related to the required major equipment to assure adequate maintenance and operating costs. In addition, the necessary costs of periodic checks can be calculated with reference to Japan as an example, and it was explained to ascertain those cost to the Mongolian side at the meeting over the draft final report. As the MHSS promised

arrange for the budget of procurement, it would be considered to be provided fully enough.

(4) Policy in Relation to Equipment Plan

1) Provision of Basic Equipment

If consideration is given to the important role that the equipment plays at each level and the present equipment levels are taken into account, substantial results may be anticipated by upgrading these basic functions. Since the MHSS is also unable to list all of the small needed tools and instruments on the request, they are anticipating consideration by the Japanese side to actively provide all items required based on needs revealed by site surveys regardless of the contents of the request. Provision of a basic capability for diagnosis and treatment will be given priority in relation to Aimak General Hospitals and the mainstay hospitals in Ulan-Bator.

2) Provision of Equipment for Upgrading Present Clinical Examination Capability

The state of the clinical laboratories is such that chipped test tubes and colorimatric cells have been used for many years and, when the prevalence of hepatitis in the country is considered, there is great urgency for upgrading the present examining instruments such as test tubes, cells, dispensers and pipettes.

Automation of clinical examinations is a problem for the future in the Mongolian People's Republic and is not a matter of urgency at present, but it is desirable to take its future spread into consideration and allow for peripheral improvements such as various needs and budgets. Although a referral system has still not been set up relative to diagnosis examination at this stage, when viewed by department, MHSS is in favor of establishing a laboratory first and to provide this in the Project largely on an experimental basis. It may be said that this will be significant in providing an opportunity for procuring expendables and required techniques, and for gaining experience and information useful for future plans when the opportune time arises to provide automated equipment.

3) Provision of Modern Medical Equipment and Expensive Equipment

New equipment corresponding to the respective centre functions of the mainstay hospitals of Ulan-Bator will be provided in accordance with priority within the budget after giving priority to upgrading the foregoing two points. Feasibility of a procurement system will be considered based on urgency as viewed from needs other than the desire of each hospital, usage techniques (doctors or engineers), replaceability with existing equipment, costs required for maintenance and running, repair techniques and spare parts. Of these, the needs are clear and it is important that maintenance and running costs be within the permissible range. Creation of routes enabling steady procurement of expendables and spare parts will be studied and examined when selecting the equipment.

4) Peripheral Improvement Relative to Basic Design

Upgrading of the following two points will be especially considered from the viewpoint of continued effective applications relative to equipment procured in this Project.

-1. Types involving minimum risk of interrupted manufacturing due to model changes will be selected.
-2. Establishment of routes for steady procurement of spare parts and expendables will be a prereqisite.

5) Policy Relative to the Implementation Schedule

This Project will be implemented with the construction period divided into 2 (two) phases. Equipment will be installed in the medical facilities (hospitals) centered in Ulan-Bator City in the 1st Phase and in the medical facilities (hospitals) in Darkhan City and Aimak and Somon levels in the 2nd Phase. Eight months is estimated to be required for the respective implementation schedule after concluding the Supply Contract, and the process schedule will be as shown in the Plan of Implementation Schedule (refer to paragraph (3) on page 209 for the Phase II of implementation). In setting the implementation schedule, the severe winter period of the Mongolian People's Republic should be avoided when shipping the provided equipment in order that endeavors to control the accuracy of the equipment will not be needlessly frustrated.

4-2 Basic Policy of the Object Facilities (Hospitals) of This Project

(1) Republican Medical Facilities (Hospitals)

The First Hospital, the National Centre for M.C.H and the Oncological Centre all function as national centres and are the final referral hospitals with the highest medical functions in the Mongolian People's Republic. Taking the survey results into consideration, these medical organs will also be provided with basic equipment such as expendables/semi-expendables and surgical instruments for general surgery, ophthalmology, otolaryngology, plastic surgery (face), basic clinical examination equipment (Microscope, Centrifuge, Spectrophotometer, Chemical Balance for preparing reagents), and modern medical equipment including Surgery, Anesthsia and Recovery Room (Operating Tables, Respirators, Bedside Monitoring Systems). In addition, the equipment enhanceing the speciality of each hospital, like the Remote Control Type X-ray TV System, Blood Gas Analyzer and Electolyte Analyzer will be provided. In case of the National Centre for M.C.H., it will be provided with Automatic Dialysis Unit for accute children kidney troubles.

(2) Hospitals Managed by the City of Ulan-Bator

Hospitals managed by the city are the Third Hospital and four (4) District Hospitals. The Third Hospital is a national centre scale general hospital but these hospitals lack basic equipment to improve diagnosis and treatment, and therefore require basic equipment and modern medical equipment corresponding to centre functions. Equipment planning policy will therefore be about the same as for the mainstay hospitals on a national level.

All four (4) of the District Hospitals are medical organs having treatment facilities of the same scale. Since these hospitals are in Ulan-Bator City and were overshadowed by the national centre level medical organs and were insufficiently equipped, they will be provided with equipment centered on basic diagnostic equipment and clinical examination equipment.

(3) Darkhan City General Hospital and Aimak General Hospitals (6 Hospitals)

These hospitals are medical organizations in overall charge of provincial medical care. They are the final referral hospitals of area medical facilities (hospitals) serving as backup hospitals for hospitals or health clinics between Somons. These hospitals will be better equipped with the Remote Control Type X-ray Diagnostic System which the district hospitals in Ulan-Bator City are not equipped with. However, the speciality which the National-level main hospitals are supposed to possess is not considered. Further, as regards the contents of the improvement plan for this level of institutions and other level of institutions provided for in the following paragraph (4), apprehensions are entertained wondering whether this plan has been formulated successfully based on the actual situation of these institutions and the perspective of them since only an extremely limited number of institutions involved were inspected under this basic design study for the reason of restriction in time. Equipment intended for these levels of institutions are expected to be procured in the Phase II of this Project. Therefore, efforts should be made to select equipment in a reasonable way by watching how the equipment to be procured in the Phase I will be made use of and by confirming the actual situataion of these levels of institutions as many as possible through the coming field survey again.

(4) Somon Health Institutions and Somon Joint Health Institutions

These are institutions that directly benefit the area residents but are positioned at the bottom of the rung as functioning hospitals in the Mongolian People's Republic. Maximum emphasis they will be provided with equipment as expendables (Suture and Needles) and semi-expendables (Tubes and Catheters), and basic equipment needed to diagnosis in primary stages and administration of first aid for each department (surgery, anesthesia, recovery room, clinical laboratory, otolaryngology and dental) to make implementation of basic medical service possible within their wide area of jurisdiction.

4-3 Basic Design

4-3-1 Plan of Equipment

The selection criteria of equipment are shown below table.

Point of criteria

(1) Experience of equipment operation, existence of operation staff

(2) Maintenance and operation capability

(3) Equipment for contribution to modernization of medical technology

Note :Equipment marked ○ are applyed to above point (1), (2), (3) of criteria and marked △ need much enough operating instructions by Japanese Engineers

Item No. Name of Equipment	Hospitals
[Endoscope Equipment]	
A- 1 Gastrointestinal Fiberscope (1) (2) (3) ○ ○	:The Third Hospital :National Centre for M.C.H :Oncological Centre
A- 2 Colono Fiberscope (1) (2) (3) ○ ○	:The First Hospital :The Third Hospital
A- 3 Broncho Fiberscope (1) (2) (3) ○ ○	:The Third Hospital :The Third Hospital :District Hospital
A- 4 Duodeno Fiberscope (1) (2) (3) ○ ○	:The Third Hospital

Item No. Name of Equipment	Hospitals
[Ultrasound Diagnostic Equipment] B- 6 Ultrasound Scanner (1) (2) (3) △ ○	:National Centre for M.C.H.
B-12 Ultrascoud Scanner, Potable Type (1) (2) (3) ○ ○	:The First Hospital :The Third Hospital
[Equipment foe Surgery, Anesthesia and Recovery Room] C- 4 Infant Ventilator (1) (2) (3) △	:The First Hospital :National Centre for M.C.H. :District Hospital
C-11 Automatic Dialysis Unit (1) (2) (3) △ ○	:National Centre for M.C.H.
[Equipment for Clinical Laboratory] D- 1 Fluorescence Microscope (1) (2) (3) ○	:The First Hospital
D- 7 Blood Cell Counter (1) (2) (3) △	:The First Hospital :The Third Hospital :National Centre for M.C.H.
D-13 Blood Gas Analyzer (1) (2) (3) △ ○ ○	:National Centre for M.C.H.
D-22 Electolyte Analyzer (1) (2) (3) ○ ○	:National Centre for M.C.H.

Item No. Name of Equipment	Hospitals
[Equipment for Pulmonary Function Tests] E- 9 Spirometer (1) (2) (3) △	:The First Hospital :The Third Hospital :Oncological Centre
[Euiqpment for Otolaryngology] F-65 Audiometer (1) (2) (3) △ ○ ○	:The First Hospital :National Centre for M.C.H. :District Hospitals
[Equipment foe Ophthalmology] and Recovery Room] G- 4 Ultrasound Scanner for Ophthalmic (1) (2) (3) △ ○	:The First Hospital
[Dental Equipment] H- 6 Dental Operative Instrument (1) (2) (3) ○	:The First Hospital :National Centre for M.C.H. :The Third Hospital :District Hospitals
[X-ray Diagnostic Equipment] I- 1 Remote Control Type X-ray Diagnostic (1) (2) (3) △ ○ ○	:The First Hospital :The Third Hospital :National Centre for M.C.H. :Oncological Centre :Darkhan City General Hospital :Aimak General Hospitals

Item No. Name of Equipment	Hospitals
[Equipment for Gynecology] J- 5 Gynecological Examination Table (1) (2) (3) ○	:National Centre for M.C.H.
[Urological Equipment] K- 4 Percutaneus Nephroscope Set (1) (2) (3) ○ ○	:The First Hospital

4-4 Implementation Plan

4-4-1 Implementation Plan

This Project will be implemented in accordance with the Japan's Grant Aid System, and based on mutual cooperation between Japan and Mongolia after conclusion of the official Exchange of Notes (E/N) between both parties. After the conclusion of the E/N, authorities of the Mongolian People's Republic concerned with this Project will select a Japanese consulting firm for the smooth execution of the Project implementation. After finishing the Detailed Design Study with the cooperation of the Mongolian counterparts, the consultant will prepare the tender documents for this Project's tendering. After the resulting tender, the successful tenderer, a Japanese trading firm will implement the supply and installation of the medical equipment for this Project.

Basic points for implementing the Project are as follows.

1) Implementation Organization

This Project will be implemented by the Ministry of Trade & Cooperation and the MHSS. The Ministry of Trade & Cooperation will procure the equipment and the MHSS will act as the responsible implementing organization. For the implementing of the Project, the Mongolian side will prepare the Project Committee with Madam Nasanbuyan, Officer of the Ministry of Trade & Cooperation, Dr. Ulaankhuu, Medical Officer of the MHSS and Mr. Buyan, Technical Officer of the MHSS as leaders.

2) Consultant

Upon the signing of the offical Exchange of Notes (E/N) by both governments, a Japanese consultant firm shall immediately enter into a Consultant Agreement with the Ministry of Trade & Cooperation, and conduct the Detailed Design Study in accordance with the grant aid system procedures laid down by Japan. In addition, the consultant will conduct the tendering work smoothly for the Mongolian side.

3) Equipment Supplier

The equipment supplier selected by the tendering process shall carry out the fabrication, supply and delivery of the required equipment in accordance with the contract and provide technical instruction on installation and operation of the equipment to be carried out in accordance with the Japanese Grant Aid System.

4) Plan of Implementation

In regards to the implementation plan, the Mongolian counterpart and the consultant will duly consider the time schedule and methods concerning the responsibilities of the work for each side, and the Project shall be implemented by mutual cooperation between Japan and Mongolia for its smooth execution. As mentioned in article 4-4-5, the scope of work covered by the Mongolian side will be conducted on time before the installation of the supplied equipment. In addition, the severe winter period of the Mongolian People's Republic should be avoided when shipping the procured equipment and transport should be accomplished so that the accuracy of the equipment is not affected by damage.

5) Necessity of Dispatching Supervisors from Japan

The following equipment (refer to page.204, Fig.8) shall require the dispatching of supervisors from Japan for supervision of installation and giving operation instructions for the procured equipment. And the installation period for the each equipment is estimated to be 3 to 5 days.

Fig. 8 Equipment necessary for installation by manufacturers

	Apparatus Discription		Install.	Operation
1	Remoto control Type X-ray TV System and General-purpose Radiography System	2 engineer	○	○
2	Automatic Dialysis Unit for Child	1 engineer	○	○
3	Anesthesia Apparatus			○
4	Ventilator			○
5	Operating Microscope			○
6	Electro Surgical Unit			○
7	Patient Monitoring System	1 engineer		○
8	Electrocardiograph			○
9	Auto Spirometer			○
10	Ultrasound Scanner			○
11	Audiometer			○
12	Blood Gas Analyzer	1 engineer		○
13	Spectrophotometer			○
14	Blood Cell Counter			○
15	Densitometer			○
16	Electolyte Analyzer			○
17	Freezing Microtome			○
18	Electrophoresis Apparatus			○
19	Ultra Centrifuge			○

Note : " ○ " MARK shows necessity of installation or instruction for operation.

4-4-2 Implementation Management Plan

Under the Japanese Grant Aid System, the consultant is obligated to form a Project team to conduct smooth execution of the Project based on the Basic Design Study.

(1) Policy of Implementation Management

1) Based on a close relationship through communications and reports, the competent authorities of both countries shall aim for the smooth completion of the Project.

2) Consultant shall give appropriate advice to the equipment supplier.

3) As regards the supervisory work on the equipment installation and operation instructions, the consultant shall manage the technical know-how transfer to the Mongolian engineers with due respect to the grant aid cooperation.

4) The consultant shall properly advise the Mongolian side on the maintenance and management of the equipment procured through the Project.

5) Consultant shall review and approve working diagrams, equipment specifications and other related documents.

6) During the process of the installation of the procured equipment the consultant shall check the work activities of the equipment supplier based on the contract conditions, and confirm the completion of the Project together with the Mongolian counterparts and upon receipt of their approval and completion certificate.

In addition to the work listed above, the consultant shall submit to the Japanese Government a report of the progress regarding the percentage-of-completion, payment procedures, matters concerning delivery after work completion, and other incidentals.

(2) Personnel Plan

The consulting services throughout the detailed design study stage, tendering stage and procurement stage. The consultant personnel are as follows:

1) Project Manager 1
   ; to conduct management of the whole consulting works

2) Medical Equipment I Planner 1
   ; to analyze planned equipment and to make out specifications of them
   ; to confirm the concerned facilities and items not being investigated during the basic design study

3) Medical Equipment II Planner 1
   ; to analyze planned equipment and to make out specifications of them
   ; to confirm the concerned facilities and items not being investigated during the basic design study
   ; to make explanations and instructions concerning applications and co-nstructions which are to be borne by the Mongolian government
   ; to give instructions concerning installation of planned equipment

4) Cost Estimator 1
   ; to calculate the cost of exection of the project in details

5) Translator 1
   ; to interpret Mongol into Japanese on site

4-4-3 Equipment Procurement Plan

Select equipment for which repairs and maintenance can be carried out easily, carry out adequate discussions in advance with representatives of the Mongolian People's Republic relative to equipment on which maintenance and management is difficult and explain maintenance methods (cost of expendables and spare parts, procurement procedures, repairs, etc.) of the equipment being procured.

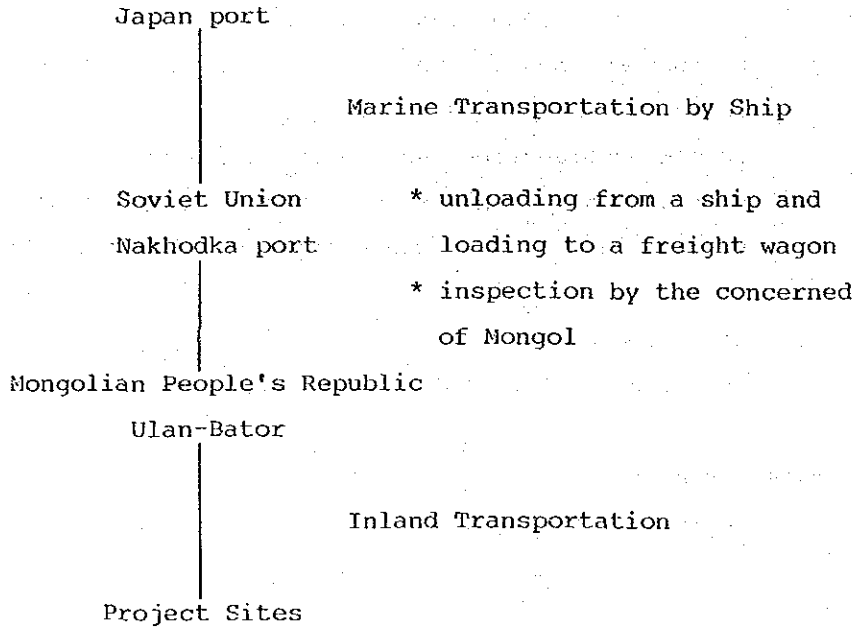
(1) Matters for Consideration in Equipment Procurement

Procurement of equipment in the implementation of this Project shall be done in Japan. However, this will not apply if the equipment and expendables in question is available from a third country and is clearly superior in performance, price and maintenance to Japan's domestic products.

Also, if handling and maintenance of the equipment are difficult, it will be necessary to prepare operation manuals and service manuals in the Mongolian language or Russian language.

(2) Transportation Method of Equipment

1) Transportation Route



2) Transportation Time (Required Time)

* Japan port to Nakhodka port	about 7 days
* Transship onto a train at Nakhodka port	about 2 days
* Nakhodka to Ulan-bator	about 14 days

Although 23 days are considered necessary for the equipment to arrive in Ulan-Bator after leaving a port in Japan, this is the shortest transportation schedule, provided that no trouble occurs enroute. When referring to records

of projects implemented in the past with the Mongolian People's Republic, it can be seen that a period of about 35 to 45 days will probably be required.

4-4-4 Implementation Schedule

(1) Phase I

The First Hospital, The Third Hospital, National Centre for M.C H, Oncology Centre,and 4 District (October, Worker's, Sukhebaator, Nairamdal) Hoapitals in Ulan-Bator City

* Detailed Design Study	3 months
* Equipment Manufacturing, Transportation, Installation and Operation Instruction	8 months

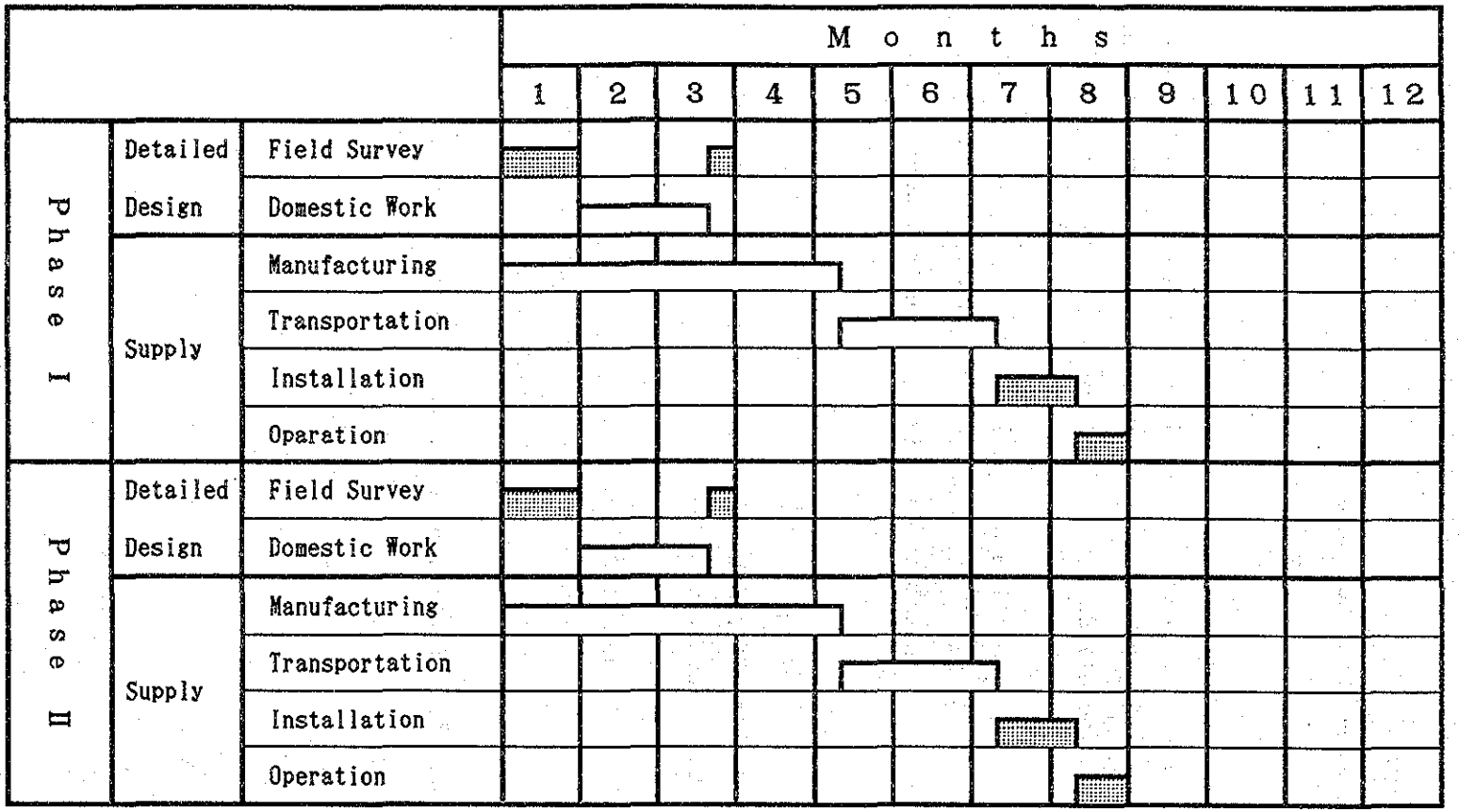
(2) Phase II

Darkhan City General Hospital, Aimak General Hospitals and Somon Level Institutions

* Detailed Design Study	3 months
* Equipment Manufacturing, Transportation, Installation and Operation Instruction	8 months

Plan of Implementation Schedule is indicated on attached sheet.

Implementation Schedule Plan



4-4-5 Scope of Work

The Project shall be implemented by mutual cooperation between Japan and Mongolia. Items to be carried out by the Japanese Government and those which are Mongolia's responsibility are listed below.

(1) Scope of work to be covered by the Japanese Government

-1. Procurement of the Project equipment and transportation to each designated Project site in Ulan-Bator (Phase I).

-2. Instruction on the Project equipment's installation and trial-running operations and adjustments.

-3. Explanation of the maintenance and operation method of the Project equipment

(2) Scope of work to be covered by the Mongolian Pepole's Republic

-1. Transportation to each designated Project site located out of Ulan-Bator (Phase II)

-2. The Mongolian side is to cover the following works which are not borne by The Japanese Government, concerning the installation works of the Project equipment

a. Construction work required for setup and installation of the large equipment that are provided through this Project, the assurance of space for the above installation by removing the existing equipment

b. Construction of water supply, drainage and electricity to the specified places as required for operation of the installed Project equipment

c. Provision of storage area for the Project equipment until the installation work

d. Exemption of Project equipment from import duties, internal taxes, or other fiscal charges in Mongolia and or, if such duties on foreign goods are unavoidable

-3. Provision of every convenience for quick and efficient customs clearance and for inland transportation of supplied equipment

-4. Arrangements for entry into and stay in Mongolia of Japanese nationals to work implementation of the Project

-5. Issue or approval of necessary certificates, tax exemption, and other incidental permission related to this Project shall be issued under the laws of the Mongolian Government

-6. All the necessary expenses other than borne by the Japanese Government

(3) Estimation of Costs to be covered by the Mongolian Side in this Project

1) Phase I

-1. Manpower costs and Man-days for installation

Total Equipment Volume	/	(worker/M3)			
= 200 M3	/	2.5 workers/m3	=	80 workers	
10 Tug./worker	x	80 worker	=	800 Tug.	

-2. Installation

a) Electronic Engineer : 2 workers x 60 days = 120 man/days
120 man/days x 20 Tug. = 2,400 Tug.

b) Common Worker : 3 workers x 60 days = 180 man/days
180 man/days x 10 Tug. = 1,800 Tug.

2) Phase II

-1. Manpower costs and Man-days for installation

Total Equipment Volume / (worker/M3)
= 250 M3 / 2.5 workers/m3 = 100 workers
10 Tug./worker x 100 man/days = 1,000 Tug.

-2. Installation

a) Electronic Engineer : 2 workers x 42 days = 84 man/days
84 man/days x 20 Tug. = 1,680 Tug.

b) Common Worker : 3 workers x 64 days = 189 man/days
189 man/days x 10 Tug. = 1,890 Tug.

3) Inland Transportation charge from Ulan-Bator to each site

Related Facilities	Transportation fee	Transportation means
Tov Aimak	1,584 Tug	Truck
Dorno-gobi Aimak	3,330	Truck
Dornod Aimak	36,000	Air-freight
Ar-hangai Aimak	29,295	Air-freight
Ovor-khangai Aimak	28,565	Air-freight
Khovd Aimak	60,060	Air-freight
Dharkhan city	2,880	Truck
Other 25 Som Joint Hospitals	66,495	Air-freight and others
	228,209 Tug	

(1Tug = 36.5Yen)

CHAPTER 5

PROJECT EVALUATION AND CONCLUSION

CHAPTER 5 PROJECT EVALUATION AND CONCLUSION

5-1 Effect of Implementation of the Project

The following effects may be anticipated with the implementation of this Project.

* Back up of primary health care
* Improvement of treatment techniques in provincial level (Aimak) hospitals
* Improvement of urban hospital functions
* Contribution to modernization of medical technology

(1) Back up of Primary Health Care

Initial diagnostic capability of Somon Health Institutions and Somon Joint Health Institutions are still not being displayed at this stage due to the lack of basic equipment, inadequate care and low grade of the existing equipment. Therefore, the functions of the BAGAEMCHI (semi-doctors) dispatched by the hospitals to provide medical services to the people scattered over a wide range cannot be adequately displayed. This also impedes the transferring of patients from hospitals between Somon Health Institutions and Somon Joint Health Institutions to the Aimak General Hospitals.

Through the supply of equipment at this time, basic equipment that were lacking will become available and with the improvement of diagnostic capability and diagnostic functions, the strengthening of the primary health care support system of the Somon Health Institutions and Somon Joint Health Institutions can be anticipated.

(2) Improvement of Treatment Techniques of Provincial Level (Aimak) Hospitals

The Aimak General Hospitals provide medical services to the provincial area residents and, with the exception of special diseases, are ranked as the final hospital in each area for carrying out general diagnosis and examinations. For this reason, consideration was centered on medium type equipment such as testing equipment and surgery equipment together with basic equipment with the aim of improving hospital functions because of the need for giving

priority to the provincial area residents. In addition, expansion of medical services to a wide range of area residents is also anticipated by providing X-ray Screening Cars for group medical examinations. Therefore, as the rusult of improvement of the medical equipment it is expected that the medical service for patients transfered from Somon Health Institutions and Somon Joint Health Institutions will be improved (Operation, Clinical Exmaination, Radiography), and also the diagnosis level for inhabitants will be advanced.

(3) Improvement of Urban Hospital Functions

The urban hospitals situated in the vicinity of Ulan-Bator City are principally composed of same district hospitals in several places, and the national hospital and the district hospitals with the area residents as the beneficiaries of the district hospitals and patients from the district hospital and from throughout the nation as the beneficiaries of the national hospitals.

As a result, the national hospitals are in sore need of equipment for coping with various diseases and special diseases and, though equipment used in the past have been improved several times, they are still not considered adequate so it will be necessary to consider improvement of equipment in this respect. Cases of special diseases are comparatively few whereas there are many high priced devices for treating these special cases. The necessity to consider conformity with the basic policy of this Project of "providing medical benefits to the majority of the inhabitants" will have to be smoothed out since only a limited number of patients will benefit from the use of this expensive equipment. Nevertheless it is believed that acquiring new modern medical equipment will enable the medical staff to come into contact with and experience the new methods of examining techniques which will lead to further effective results.

(4) Contribution to Modernization of Medical Technology

Although the prime objective of this Project is to provide basic medical equipment, it may be said that a certain amount of modern equipment should be provided when future development of medical technology is considered. The reasons for this are the noticeable positive attitude of the hospital staffs towards improvement and modernization of the medical system and the capability observed of actively applying the equipment procured at this time.

Although the medical system of Mongolia has been improved to a considerable level and modernization is commencing, it may be anticipated that provision of Project equipment at this time will be effective in devising peripheral improvement plans on a long-term basis for improvement of medical equipment.

In tangible form, the importance of estimating the maintenance and running costs of modern medical equipment (expendables cost, spare parts cost, periodic check-up cost, repair cost, and costs required for maintenance and management) and establishment of management methods (personnel training, routine equipment management) as peripheral improvements in maintaining the equipment in topnotch form can be recognized together with the need for meeting the maintenance and running costs where modern medical equipment is being used.

For the future it is forecasted that modern medical equipment will become indispensable in Mongolia. If implementation of the above matters is possible after procuring the equipment, the Project for Improvement of Medical Equipment at this time will be appreciated as having been a highly significant decision.

5-2 Conclusion

Since this Project will play an important role in assuring safe medical treatment and maintaining the health of the people of Mongolia as explained in the preceding chapters, and since it will contribute to improving the livelihoods of the majority of the people, it is judged that implementation of this Project is highly significant. After implementing this Project, however, it will be necessary that the following matters should be arranged by the Mongolian side to maintain and improve the effects of the foregoing undertaking.

(1) Proper management will be necessary to maintain this Project after implementation. Management means procurement of expendables such as recording paper and reagents required by the equipment, and procurement of spare parts and repair parts for maintenance. It will be necessary to provide a budget every year without fail to maintain the equipment in the best possible state and to always have it functioning normally.

(2) Efforts should emphasize implementation of education and technical training for technicians to be in charge of maintenance, check-ups and repairs of the equipment in this Project and stationing of technicians in appropriate places to keep the equipment operating normally at all times. A plan proposed for this purpose is to have the Japanese specialist who attended to the installation of the equipment, set up an equipment training period (to acquire operating techniques, simple repair techniques and check-up methods) and carry out the technology transfer to the technicians in Mongolia. It is desirable that such a chance of technology transfer will be utilized by the Mongolian side positively and effectively.

ADDENDA

1. Members of Basic Design Study Team

1. Members of Basic Design Study Team

1-1 Basic Design Study Team (March 25th to April 17th, 1990)

Leader	Mr. Yasuo Saito	Director, Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs
Hospital Management Advisor	Naruo Uehara, M. D.	Dept. of International Cooperation, National Medical Center Hospital, Ministry of Health and Welfare
Project Coordinator	Mr. Mitsuyoshi Kawasaki	First Basic Design Study Division, Grant Aid Planning & Survey Department, JICA
Chief Consultant	Mr. Seijiro Omura	International Total Engineering Corporation
Equipment Planner I	Mr. Kojiro Minato	International Total Engineering Corporation
Equipment Planner II	Mr. Tamotsu Nozaki	International Total Engineering Corporation
Translator	Ms. Atsuko Henmi	Japan International Cooperation Service Center

1-2 Basic Design Study Team for Explanation of Darft Final Report
(July 22th to August 7, 1990)

Leader	Mr. Tadashi Isobe	Deputy Direcor Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs
Hospital Management Advisor	Naruo Uehara, M. D.	Dept. of International Cooperation, National Medical Center Hospital, Ministry of Health and Welfare
Project Coordinator	Mr. Hiroshi Yoshimura	First Project Management Division, Grant Aid Project Management Department, JICA
Chief Consultant	Mr. Seijiro Omura	International Total Engineering Corporation
Equipment Planner I	Mr. Kojiro Minato	International Total Engineering Corporation
Translator	Mr. Tsuyoshi Shiromizu	Japan International Cooperation Service Center

2. Survey Schedule

2. Survey Schedule

2-1 Basic Design Study Team (March 25th to April 17th., 1990)

No.	Date	Place	Survey Schedule
1.	Mar. 25 (Sun)	Movement	Lv. Narita, Ar. Beijing
2.	Mar. 26 (Mon)	Movement	Lv. Beijing, Ar. Ulan-Bator Meeting with the counter part of Mongolia side at the Guest House
3.	Mar. 27 (Tue)	Embassy M.E.E.R.S.	Courtesy call to the Embassy of Japan in Mongolia Brief explanation of survey schedule
4.	Mar. 28 (Wed)	M.E.E.R.S.	General meeting with the persons concerned of each medical facility in Ulan-Bator
5.	Mar. 29 (Thu)	G.H.W.D. M.O.H.	Survey of G.H.D. Explanation of the Grant Aid Discussion of Minutes
6.	Mar. 30 (Fri)	M.C. Danbaruja	Survey of each function Listening of activities
7.	Mar. 31 (Sat)	R.O.R.C. Movement	Survey of R.O.R.C. Signing of the Minutes Lv. Ulan-Bator, Ar. Tov Aimak
8.	Apr. 1 (Sun)	Movement	Lv. Tov Aimak, Ar. Ulan-Bator Team meeting
9.	Apr. 2 (Mon)	M.O.H.	Discussion of required medical equipment
10.	Apr. 3 (Tue)	N.C.M.C.H.	Survey of functional conditions Listening of equipment maintenance

11.	Apr. 4 (Wed)	C.R.C.H.	Survey of functional conditions Discussion of required medical equipment
12.	Apr. 5 (Thu)	U.C.C.C.H. S.J.H.I.	Survey of functional conditions Discussion about equipment
13.	Apr. 6 (Fri)	G.H.O.D. G.H.W.D.	Listening of District Hospital's condition Survey of functional conditions Comfirmation of equipment
14.	Apr. 7 (Sat)	G.H.S.D.	Listening of District Hospital's condition Survey of functional conditions Comfirmation of equipment
15.	Apr. 8 (Sun)		Team meeting
16.	Apr. 9 (Mon)	R.O.R.C. G.H.N.D.	Comfirmation of equipment Survey of pediatrics hospital
17.	Apr. 10 (Tue)	Guest House	Explanation of the system of Grant Aid Survey of the medical educational system in Mongolia
18.	Apr. 11 (Wed)	S.J.H.I. N.C.M.C.H.	Survey of functional conditions Discussion of equipment
19.	Apr. 12 (Thu)	G.H.D.C. Tov Aimak H.	Survey of functional conditions Discussion of equipment
20.	Apr. 13 (Fri)	C.R.C.H. U.C.C.C.H. N.H.	Comfirmation and discussion of equipment Survey of maternity hospital
21.	Apr. 14 (Sat)	M.O.H. M.E.E.R.S.	Recomfirmation of contents of survey Courtesy call to the newly-appointed Minister of Health
22.	Apr. 15 (Sun)		Team meeting

23.	Apr. 16 (Mon)	Return JICA Baijing Office	Lv. Ulan-Bator, Ar. Narita Stay at Paking & Report to the JICA China Office (Mr. Omura)
24.	Apr. 17 (Tue)	Return	Lv. Baijing, Ar. Narita (Mr. Omura)

*M.E.E.R.S.	Ministry of External Economic Relations & Supplies (present: Monistry of Trade & Cooperation)
*G.H.W.D.	General Hospital of Workers' District
*M.O.H.	Ministry of Health (present: Ministry of Health & Social Services)
*M.C.	Meintenance Centre
*R.O.R.C.	Republican Oncological Research Centre
*N.C.M.C.H.	National Centre for M.C.H.
*C.R.C.H.	Central Republican Clinical Hospital (The First Hospital)
*U.C.C.C.H.	Ulan-Bator City Central Clinical Hospital (The Third Hospital)
*S.J.H.I.	Somon Joint Health Institution
*G.H.O.D.	General Hospital of October District
*G.H.S.D.	General Hospital of Sukhebaatar District
*R.H.N.D.	General Hospital of Nairamdal District

2-2 Basic Design Study Team for Explanation of Draft Final Report
(July 22th to August 7th, 1990)

No.	Date	Place	Survey Schedule
1.	Jul. 22 (Sun)	Movement	Lv. Narita, Ar. Baijing (JL-781)
2.	Jul. 23 (Mon)	Movement Ulan-Bator	Lv. Baijing, Ar. Ulan-Bator (OM-224) Courtesy call to M.H.S.
3.	Jul. 24 (Tue)	Ulan-Bator	Courtesy call on Embassy and M.T.C. Meeting with M.H.S.
4.	Jul. 25 (Wed)	Hojiruto	Survey of Hojiruto Somon Joint Health Institutions
5.	Jul. 26 (Thu)	Harahorin	Survey of Harahorin Somon Joint Health Institutions
6.	Jul. 27 (Fri)	Choibarusan	Survey of Aimak Hospitals
7.	Jul. 28 (Sat)	Ulan-Bator	Movement
8.	Jul. 29 (Sun)		Team meeting
9.	Jul. 30 (Mon)	Ulan-Bator	Arraival of Mr. ISOBE, Dr. UEHARA, Mr.YOSHIMURA Meeting at M.H.S. Team meeting
10.	Jul. 31 (Tue)	Ulan-Bator	Discussion at M.H.S. & M.T.C. Survey of hospitals Team meeting
11.	Aug. 1 (Wed)	Ulan-Bator	Discussion at M.H.S. & M.T.C. Survey of hospitals Team meeting

12.	Aug. 2 (Thu)	Ulan-Bator	Discussion at M.H.S. & M.T.C. Survey of hospitals Team meeting
13.	Aug. 3 (Fri)	Ulan-Bator	Signing of Minutes Discussion at M.H.S. & M.T.C. Survey of hospitals Team meeting
14.	Aug. 4 (Sat)	Ulan-Bator	Discussion at M.H.S. & M.T.C. Survey of hospitals
15.	Aug. 5 (Sun)	Ulan-Bator	Team meeting Report to the Embassy
16.	Aug. 6 (Mon)	Return	Lv. Ulan-Bator, Ar. Narita (Mr. MINATO, Mr. SHIROMIZU)
		China	Report to JICA Beijing Ofice (Mr. ISOBE, Dr. UEHARA, Mr. YOSHIMURA, Mr. OMURA)
17.	Aug. 7 (Tue)	Return	Lv. Beijing, Ar. Narita (Mr. ISOBE, Dr. UEHARA, Mr. YOSHIMURA, Mr. OMURA)

*M.H.S. Ministry of Health & Social Services

*M.T.C. Ministry of Trade & Cooperation

3. Attendant's List

3. Attendant's List

3-1 Mongolia Side

Name	Position
Mr. Nyamdavaa	Minister of Ministry of Health & Social Services
Mr. Dashizebeg	First Deputy Minister, "
Mr. D. Ulaankhuu	Medical Officer, "
Mr. Buyan	Technical Officer, "
Mr. G. Battsengel	Chief of Department, Ministry of Trade & Cooperation
Ms. R. Nasanbuyan	Officer of Ministry of Trade & Cooperation
Ms. S. Yurbonia	Officer of Ministry of Health & Social Services
Mr. N. Munkhtubshin	Officer "
Mr. Jigjid	Translator

Hospital

Central Republican Clinical Hospital

Mr. Khandsuren	Assistant Director
Mr. Jambaldorji	Assistant Director
Mr. Sonin	Dr. of Ultrasound Diagnosis
Mr. Mendbayar	Dr. of Endoscope Diagnosis
Mr. Ganbold	Dr. of Recovery Room
Mr. Baigalmaa	Ophthalmologist
Mr. Dandar	Surgeon (for surgical operation)
Mr. Khaltar	Surgeon (Plastic Surgery)
Mr. Naranbyamba	Dental Surgeon
Mr. Gombodorji	Dr. of Radiotherapeutic
Mr. Oyontsetseg	Dr. of Kidney diseases
Mr. Namsarai	Dr. of Kidney Surgery
Mr. Nyamcuren	Dr. of Cardiovascular Diseases
Mr. Tsogtjargal	Otorhinolaryngologist
Mr. Lodonsharab	Technician of Clinical Laboratory

Natioanl Centre for M.C.H.

Mr. Malchinkhuu	Director
Mr. Enkhjargal	Assistant Director (Dr. of Pediatrics)
Mr. Janchibdorji	Dr. of Gynecology
Mr. Namjilmaa	Otorhinolaryngologist
Mr. Sanjaa	Ophthalmologist

Republican Oncological Resarch Centre

Mr. Nyamdavaa	Director
Mr. Purebjab	Assistant Director
Mr. Arabdan	Assistant Director

Ulan-Bator City Central Clinical Hospital

Mr. Dugerjab	Director
Mr. Khaltar	Assistant Director
Mr. Khisigtseren	Technician of Clinical Laboratory
Mr. Tserenlaasi	Anesthetist
Mr. Pureb	Technician of X-ray CT
Mr. Subd	Physician (Internist)
Mr. Oljimaa	Ophthalmologist
Mr. Serjee	Dr. of Ultrasound Diagnosis

District Hospital

General Hospital of Workers' District

Mr. Khandgait	Director
Mr. Badarchi	Dr.
Mr. Tserendolgor	technician of X-ray
Mr. Namjil	Technician of Clinical Laboratory

General Hospital of October District

Mr. Damdinsuren	Director
Mr. Ganbaatar	Chief of Doctors

General Hospital of Sukhebaatar District

Mr. Tserennadmid	Assistant Director
Mr. Batochir	Chief of Doctors

General Hospital of Nairamdal District (Pediatrics Hospital)

Mr. Adek	Director
Mr. Tuya	Assistant Director

Darkhan City General Hospital

Mr. Sambuu	Director
Mr. Aanchig	Assistant Director
Mr. Altantuya	Assistant Director

Jargalant Somon Joint Health Institution (Bayan-khongor Aimak)

Mr. Dorjibyamba	Assistant Director (Otorhinolaryngologist)

Health Bureau of Darkhan City

Mr. Erkhembayar	Chief of Bureau

Maintenance Centre

Mr. Serendorji	Chief of Centre
Mr. Togoldur	Repair Technician
Mr. Hamsarai	"
Mr. Mumeglaixan	Worker (Manufacturing)
Mr. Oyonchimeg	Worker (Manufacturing)

3-2 Japanese Side

Name	Position
Mr. Shuichi Takase	Ambassador Extraordinary and Plenipotentiary
Mr. Takenori Shimizu	First Secretary
Mr. Minoru Kikuchi	Second Secretary
Mr. Makoto Yoshitani	Medical Attach'e (Second Secretary)

4. Copy of Minutes of Discussion

4-1 Basic Design Study

MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY
ON
THE PROJECT FOR IMPROVEMENT OF MEDICAL EQUIPMENT
IN
THE MONGOLIAN PEOPLE'S REPUBLIC

In response to the request made by the Government of the Mongolian People's Republic, the Government of Japan decided to conduct a Basic Design study on the Project for Improvement of Medical Equipment (hereinafter referred to as "the Project") and Japan International Cooperation Agency (JICA) has sent the Basic Design Team headed by Mr. Yasuo Saito, Director, Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs, from March 26 to April 16, 1990.

The Team had a series of discussions with the authorities concerned of the Government of the Mongolian People's Republic and conducted a field survey.

As the result of the study, both parties have agreed to recommend to their respective Governments that the major points of understanding reached between them as attached herewith should be examined towards the realization of the Project.

Ulan- Bator, March 31, 1990

Yasuo Saito
Leader,
Basic Design Study Team,
JICA

Sh. Jigjidsuren
First Deputy Minister,
Ministry of Health,
M.P.R.

G. Battsengel
Chief of Department,
Ministry of External Economic
Relations and Supplies,
M.P.R.

ATTACHMENT

1. Objective of the Project

The objective of the Project is to assist the hospitals mentioned below in the improvement of their diagnostic and curative capabilities, taking into consideration the balanced development of the national medical system as a whole, based on the Health and Medical Policy of the Government of the Mongolian People's Republic, through procuring medical equipment, and thus to contribute to the promotion of health for the Mongolian People.

2. Executing Agency

The Ministry of Health is responsible for the execution of the Project.

3. Locations of the Hospitals Concerned

The Locations of the hospitals concerned are listed in Annex I.

4. Tentative List of Major Equipment

The tentative equipment list for each hospital based on the results of the the survey conducted by the Team is shown in Annex II.

5. Selection Criteria of Equipment

The following criteria will be taken into account in the selection of equipment.

(1) Priorities of the needs of the target population and the expected role of the hospitals.

(2) Durability under the local climate conditions, maintenance with the existing capacity and operation with the technology locally available.

(3) Appropriateness in the view of the running cost and available financial resources.

(4) Supply routes of the spare parts and consumables.

6. Request of the Technical Cooperation

Mongolian side requested the acceptance of Government official of MOH and also the dispatch of medical expert from Japan, in order to implement and manage the Project effectively, and to contribute to future development of cooperation in health/medical field through better understanding of each

other.

7. Grant Aid Program

(1) The Mongolian side has understood the Japanese Grant Aid System explained by the Team including the use of a Japanese Consultant Firm and a Japanese Contractor for the implementation of the Project.

(2) The Study Team will convey to the Japanese Government the desire of the Mongolian side that the former takes necessary measures to cooperate by providing appropriate equipment under the Grant Aid.

(3) The Mongolian side will take necessary measures as listed in Annex III on condition that the Grant Aid by the Japanese Government of Japan would be extended to the Project.

Annex I

1. In Ulan-Bator:
   - Central Republican Clinical Hospital
   - Ulan-Bator City Central Clinical Hospital
   - National Centre for M.C.H
   - Republican Oncological Research Centre
   - General Hospital of Workers' District
   - General Hospital of Sukhebaatar District
   *- General Hospital of Nairamdal District
   *- General Hospital of October District

   * These two hospitals are not in the List of Health Institutions Proposed, Annex I of the Minutes of Discussions signed on October 23th, 1989.

2. Aimak General Hospitals:
   - in Hovd
   - in Dornogovi
   - in Uvurhangai
   - in Tuv
   - in Dornod
   - in Darhan
   - in Arhangai

3. Somon Health Institutions:
   - Arhangai Aimak-Somons: Erdenemandal, Battsengel, Tariat
   - Bayan Ulgii Aimak-Somons: Deluun, Tsengel
   - Bayanhongor Aimak-Somons: Jargalant, Bogd
   - Bulgan Aimak-Somons: Ulzit, Orhon, Hutag
   - Govialtai Aimak-Somons: Biger, Tugrug
   - Dornogovi Aimak-Somon: Airag
   - Dornod Aimak-Somons: Sumber, Bayanuul
   - Dundgovi Aimak-Somons: Erdenedalai, Goviugtaal
   - Zavhan Aimak-Somons: Tudevtei, Zavhanmandal, Shiluustei, Tosontsengel
   - Uvurhangai Aimak-Somons: Hujirt, Zuil, Guchin us, Harhorin

- Umnugovi Aimak-Somon: Gurvantes
- Sukhebaatar Aimak-Somon: Ongon
- Selenge Aimak-Somon: Sant
- Tuv Aimak-Somons: Lun, Jargalant
- Uvs Aimak-Somons: Tes, Baruunturun, Umnugovi
- Hovd Aimak-Somon: Bulgan
- Huvsgul Aimak-Somons: Ikhuul, Khatgal, Shinelder
- Hentei Aimak-Somons: Binder, Umnudelger, Herlen

Annex II

1. Ultrasound Diagnostic Equipment

2. Equipment and Instruments for Ear, Nose and Throat

3. Ophthalmic Instruments and Apparatus

4. Obstetric and Gynecology Apparatus

5. Dental Instruments and Apparatus

6. X-ray Equipment and Apparatus

7. Physical Function Test Equipment

8. Endoscope Equipment

9. Operating and Surgical Instruments and Apparatus

10. Clinical Laboratory Instruments and Apparatus

11. Urology Instruments and Apparatus

12. Instruments and Apparatus for "Maintenance Centre for Medical Equipment"

13. Others

Annex III

1. To ensure prompt unloading, tax exemption, customs clearance at ports of disembarkation and prompt internal transportation of the equipment purchased under the Grant Aid.

2. To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangement.
   (1) Advising commission of authorization to pay
   (2) Payment commission

3. To exempt Japanese Nationals involved in the Project from custom duties, internal taxes and other fiscal levies which may be imposed in the Mongolian People's Republic with respect to the supply of the products and services under the Verified Contracts.

4. To accord Japanese Nationals whose services may be required in connection with the supply of the products and the services under the Verified Contracts such facilities as may be necessary for their entry into the Mongolian People's Republic and stay therein for the performance of their works.

5. To bear all the expenses other than those to be born by the Grant, necessary for the execution of the Project.

6. To ensure the proper and effective operation and maintenance of equipment purchased under the Grant.

4-2 Explanation of Draft Final Report

MINUTES OF DISCUSSIONS ON
THE REPORT OF THE BASIC DESIGN STUDY ON
THE PROJECT FOR IMPROVEMENT OF MEDICAL EQUIPMENT
IN THE MONGOLIAN PEOPLE'S REPUBLIC

In response to the request made by the Government of the Mongolian People's Republic, the Government of Japan decided to conduct a Basic Design Study on the Project for Improvement of Medical Equipment (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to the Mongolian People's Republic the study team from March 26 to April 16, 1990.

As the result of the survey and discussions. JICA prepared a Draft Final Report on the study and dispatched the second mission headed by Mr. Tadashi Isobe, Official, Grant Aid Division, Economic Cooperation Bureau, Ministry of Forein Affairs to explain and discuss it from July 23 to August 6, 1990.

Both parties had a series of discussions on the Report and have agreed to recommend to their respective Governments that the major points of understanding reached between them, attached herewith, should be examined towards the realization of the Project.

Ulan-Bator, August 3, 1990

T. Isobe

Tadashi Isobe
Leader,
Draft Final Report Explanation Team
Basic Design Study, JICA

G. Dashzeveg
First Deputy Minister,
Ministry of Health and
Social Services, M.P.R.

G. Battsengel
Chief of Department, Ministry
of Trade and Cooperation,
M.P.R.

ATTACHMENT

1. The Government of the Mongolian People's Republic has agreed in principle to the basic design proposed in the Draft Final Report. The proposed equipment has been confirmed by both parties.

2. Ministry of Trade and Cooperation shall be responsible for acceptance of Grant Aid and procurement of the equipment.
Ministry of Health and Social Service shall be responsible for execution of the Project and operation of the procured equipment.

3. The Government of the Mongolian People's Republic has understood Japan's Grant Aid System and confirmed the necessary measures to be taken by the Government of the Mongolian People's Republic as agreed in the "Minutes of Discussion" signed on March 31, 1990, on condition that the Grant Aid by the Government of Japan would be extended to the Project, as shown in Annex.

4. The Final Report (10 copies in English) on the Project will be submitted to the Government of the Mongolian People's Republic within September 1990.

5. The Government of the Mongolian Peaple's Republic requested necessary personnel training under the Japanese Technical Cooperation Scheme for proper and effective implementation and management of the Project.

ANNEX

1. To ensure prompt unloading, tax exemption, custom clearance at the ports of disembarkation and boarder and internal transportation of the equipment purchased under the Grant Aid.

2. To provide facilities for distribution of electricity, water supply and drainage and other necessary preparation works for installation of the procured equipment.

3. To bear the necessary commisions to Japanese foreign exchange bank

4. To exempt Japanese Nationals involved in the Project from custom duties, internal taxes and other fiscal levies which may be imposed in the Mongolian Peaple's Republic with respect to the supply of products and services under the Verified Contract.

5. 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 Mongolian Peaple's Republic and therein for the performance of their works.

6. To ensure the proper and effective operation and maintenance of the equipment purchased under the Grant, especially to obtain the necessary budget and personnel.

7. To bear all the expenses other than those to be borne by the Grant, necessary for the execution of the Project.

5. Finalized Medical Equipment List

1. Phase I

1. Endoscope Equipment

Generic Title / Hospital	Q'TY C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District	Total	Specification
A- 1 Gastrointestinal Fiberscope	0	1	1	1	4	7	For examination and operation of Upper gastrointestine (esophagas, stomach, etc)
A- 2 Colono Fiberscope	1	1	0	0	0	2	
A- 3 Broncho Fiberscope	1	1	0	0	4	6	
A- 4 Duodenofiberscope	1	0	0	0	0	1	
A- 5 Halogen Light Source	0	0	1	0	4	5	For Fiberscope
A- 7 Video System	1	0	0	0	0	1	
A- 8 Video Cassette	12	0	0	0	0	12	
A- 9 Mobile Disinfection Equipment	1	0	0	0	0	1	
A-10 Electro Coagulator for Surgery	0	0	1	0	0	1	
A-11 Diathermic Snare							
-1 Crescent	4	0	0	0	0	4	
-2 Oval	4	0	0	0	0	4	
-3 Hexagonal	4	0	0	0	0	4	
A-12 Injection Needle							
-1 NM 3K/9L	4	0	0	0	0	4	
-2 NM 13D-15L	4	0	0	0	0	4	

1. Endoscope Equipment

Generic Title / Hospital	Q'TY C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District	Total	Specification
A-13 Aspiration Needle							
-1 NA-1C Standard	4	0	0	0	0	4	
-2 NA-2C Fenistrated	4	0	0	0	0	4	
A-14 Biopsy Forceps	5	0	1	0	0	6	
A-15 Grasping Forceps							
-1 FG-16V	1	0	1	0	0	2	
-2 FG-18Q	1	0	1	0	0	2	
-3 FG-22Q	1	0	1	0	0	2	
-4 FG-23Q	1	0	1	0	0	2	
-5 PAT Tooth FG-8L	1	0	0	0	0	1	
-6 Triped TypeFG-15L	1	0	0	0	0	1	
-7 Pelicon Type	1	0	0	0	0	1	
-8 Focked Jaws FG-3K	1	0	0	0	0	1	
-9 Alligator Jaws FG-6L	1	0	0	0	0	1	
A-16 Papilotomy Knife							
-1 KD-4Q	1	0	0	0	0	1	
-2 KD-5Q	1	0	0	0	0	1	
-3 Push and Pull Type KD-6Q	1	0	0	0	0	1	
A-17 Pre-cutting Knife							
-1 KD-10Q	1	0	0	0	0	1	
-2 Flat Type KD-10Q	1	0	0	0	0	1	
A-18 Mechanical Lithotriptor	2	0	2	0	0	4	
A-22 Halogen Lamp JCM 15-150W	40	10	10	0	40	100	

2. Ultrasound Diagnostic Equipment

Generic Title / Hospital	Q'TY C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District	Total	Specification
B- 6 Universal Echocamera	0	0	1	0	0	1	For abdominal examination
B- 7 Probes							
-1 Linear	0	0	1	1	0	2	
-2 Sector	0	0	1	1	0	2	
-3 Convex	0	0	0	1	0	1	
-4 Biopsy	0	0	0	0	0	0	
-5 Biopsy Adaptor	2	0	1	1	0	4	
B- 8 Monochrome Video Graphic Printer	0	1	1	1	0	3	Thermal print type
B- 9 Printing Paper	0	100	200	200	0	500	
B-10 Biopsy Puncture Needle (3pcs./set)	30	10	10	30	0	80	·18G, 20G, Chiba Needle
B- 11 Ultrasound Sterile Gele	50	30	30	10	0	120	
B- 12 Portable Echocamera	1	0	0	1	0	2	For abdominal use, Portable type

3. Surgical, Anesthetic, Reanimation Equipment

Generic Title / Hospital	Q'TY					Total	Specification
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
C- 1 Universal Operating Table	1	1	1	1	0	4	Universal, Hydrowlic type
C- 2 Electro Coagulator	0	1	1	0	4	6	
C- 3 Anesthesia Apparatus	1	1	1	0	0	3	Whole body type
C- 4 Ventilator	0	1	1	0	0	2	
C- 6 Operating Microscope	1	1	1	0	0	3	
C- 7 Patient Monitoring System with Remote Guidance	0	1	2	2	0	5	Measuring: Cardiograph, Heart rate, Body temp., Respiration rate, etc.
C-10 Suction Unit	2	2	2	2	4	12	Two bottle type
C-11 Auto Dialysis Unit	0	0	1	0	0	1	
C-12 Water Distillation Unit	0	0	1	0	0	1	To make distilled pure water for dialysis Redistillation type
C-14 Hollow Fiber Dialyzer	0	0	500	0	0	500	
C-15 Blood Tubing Set	0	0	500	0	0	500	
C-16 Fistula Needle	0	0	200	0	0	200	

3. Surgical, Anesthetic, Reanimation Equipment

Generic Title / Hospital	Q'TY					Total	Specification
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
C-17 Osmometer	0	0	1	0	0	1	
C-18 -19 Neonatal Monotor	0	0	3	0	4	7	Measuring: Cardiograph, Heart rate, Respiration rate, Body temp., etc.
C-20 Disposable Electrode	0	0	100	0	0	100	
C-21 Surgical Needle Code : T	1000	1000	1000	1000	300	4300	
C-22 Surgical Needle Code : R	1000	1000	1000	1000	0	4000	
C-23 Surgical Needle Code : C	1000	1000	1000	1000	0	4000	
C-24 Surgical Needle Code : V	1000	1000	1000	1000	200	4200	
C-25 Blood Vessel Suture Needle	1000	1000	1000	1000	100	4100	
C-26 Eye Needle	1000	1000	1000	1000	0	4000	
C-27 Small Operating Instrument Set	0	0	0	0	5	5	
C-28 Cholecystotomy Instrument Set	1	1	1	1	0	4	

3. Surgical, Anesthetic, Reanimation Equipment

Generic Title / Hospital	Q'TY					Total	Specification
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
C-29 Gastrectomy Instrument Set	1	1	0	1	0	3	
C-30 Standard Plastic Surgery Instrument Set	2	1	2	1	0	6	
C-31 Nephrectomy Instrument Set	1	0	1	0	0	2	
C-32 Neurosurgery Instrument Set	0	1	0	0	0	1	
C-34 Urethral Silicone Rubber	50	50	200	50	0	350	
C-35 Whistle Tip Urethral Catheter	50	50	50	50	30	230	
C-36 Nasal Oxygen Catheter, Green	50	50	150	50	30	330	
C-37 Intravenous Catheter	50	50	150	50	30	330	
C-38 Polyethilen Tubing 5m ling	50	50	150	50	30	330	

3. Surgical, Anesthetic, Reanimation Equipment

Generic Title / Hospital	Q'TY C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District	Total	Specification
C-39 Infant Feeding Tube 400mm long	50	50	150	50	30	330	
C-40 Stomack Tube 125cm	50	50	150	50	30	330	
C-41 Trocars 3.0, 3.5-4.0	5	5	5	4	12	31	
C-42 Ascites Trocars, 4 N	3	3	3	4	12	25	
C-43 Silk Suture Braided Non Terile	10	10	10	10	10	50	
C-44 Hepatotomy Instrument Set	1	0	1	1	0	3	
C-45 Endotracheal Tube 8-22041							
-1 - 2.5mm	0	0	40	0	20	60	
-2 - 3.0mm	0	0	50	0	20	70	
-3 - 3.5mm	0	0	100	0	40	140	
-4 - 4.0mm	0	0	90	0	40	130	
-5 - 4.5mm	0	0	90	0	65	150	
-6 - 5.0mm	0	0	90	0	40	130	
-7 - 5.5mm	0	0	80	0	40	120	
-8 - 6.0mm	0	0	80	0	20	100	
-9 - 6.5mm	0	0	80	0	20	100	
C-46 Endotracheal Catheter	0	0	200	50	50	300	

8. Surgical, Anesthetic, Reanimation Equipment

Generic Title / Hospital	Q'TY					Total	Specification
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
C-47 Ventricular Catheter and Ureteral Cathe.	0	0	400	0	1,000	1,400	
C-48 Venepuncture Catheter with Contrast	0	0	500	0	2,000	2,500	
C-49 Gastroesophageal Catheter for Child.	0	0	500	0	200	700	
C-50 Berman Airway	0	0	30	0	100	130	
C-51 Manual Resuscitator	0	0	0	0	8	8	
C-52 Critical Care Ventilator for Child	0	0	2	0	4	6	
C-53 Laryngoscope	0	0	0	0	5	5	
C-56 Colposcope	0	0	2	1	4	7	
C-57 Syringe Infusion Pump	0	0	3	0	0	3	
C-58 Amnioscope Cervical Channel Dilator	0	0	0	0	4	4	
C-59 Laparoscope	0	0	1	0	0	1	

3. Surgical, Anesthetic, Reanimation Equipment

Generic Title / Hospital	Q'TY					Total	Specification
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
C-60 Cusco's Vaginal Speculum	0	0	20	0	80	100	
C-61 VANGERTER's, Large Speculum	0	0	40	0	160	200	
C-62 Vaginah de Vanagi Retractor	0	0	30	0	100	130	
C-63 Uterine Cervical Dilators Set	0	0	2	0	0	2	
C-65 Portable Doppler Fetus Detector	0	0	1	0	0	1	
C-66 Uterine Curette	0	0	10	0	8	18	
C-75 Consumables for Dialysis Unit	0	0	1	0	0	1	

4. Laboratory Equipment

Generic Title \ Hospital	Q'TY					Total	Specifications
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
D- 1 Fluorescence Microscope	1	0	0	0	0	1	
D- 2 Monocular Microscope	0	0	0	0	4	4	
D- 3 Binocular Microscope	2	4	5	0	0	11	
D- 4 Hemometer	5	5	5	0	4	19	
D- 5 Hemacytometer	0	5	5	0	0	10	
D- 6 Differential Leucocyte Counter	0	5	1	0	4	10	
D- 7 Blood Cell Counter	1	1	1	0	0	3	
D- 8 Colorimeter	1	1	1	0	4	7	
D- 9 Clinical Spectrophotometer	1	1	1	0	0	3	
D-13 Blood Gas Analyzer	0	0	1	0	0	1	
D-15 pH Meter	0	0	1	0	0	1	
D-16 Centrifuge	0	0	0	0	4	4	

4. Laboratory Equipment

Generic Title / Hospital	Q'TY					Total	Specifications
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
D-17 Refrigerated Centrifuge	1	1	1	0	0	3	
D-18 Freezing Microtome	1	0	1	0	0	2	
D-19 Microtom Knife	200	0	0	0	0	200	
D-21 Electrophoresis Apparatus	0	0	0	0	4	4	
D-22 Electrolyte Analyzer (Na, K)	0	0	1	0	0	1	
D-26 Anaerobic Jar	1	1	0	0	4	6	
D-28 Hemoglobin Meter	1	1	1	0	4	7	
D-29 Refractometer	1	0	0	0	4	5	
D-31 Urinometer	20	20	20	0	0	60	
D-34 Densitometer	1	0	0	0	0	1	

4. Laboratory Equipment

Generic Title / Hospital	Q'TY					Total	Specifications
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
D-35 Automatic Pipette							
- 1 15 - 25 ml	2	2	2	2	0	8	
- 2 50 - 100	4	10	10	2	12	38	
- 3 200 - 500	10	10	10	2	12	44	
- 4 500 - 1000	10	10	10	2	12	44	
D-36 Dispensor	2	2	2	2	12	20	
D-37 Glass Wares	2	2	2	2	4	8	
D-38 Cell for Spectrophotometer	20	20	20	20	40	120	
D-39 Tip Washer	1	1	1	1	4	8	

5. Pulmonary Function Equipment

Generic Title / Hospital	Q'TY					Total	Specifications
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
E- 1 Electrocardiograph							
-1 3-channel	1	0	0	0	0	1	
-2 6-channel	0	1	0	0	0	1	
E- 5 Ergometer	1	1	1	0	0	3	
E- 9 Pulmonary Function Test System	1	1	0	1	0	3	

6. Equipment for Ear, Nose, Throat

Generic Title / Hospital	Q'TY					Total	Specifications
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
F- 1 OKONOGI's Ear Forceps	20	5	100	0	40	165	
F- 2 HARTMANN's Ear Forceps	20	10	10	0	20	60	
F- 3 Ear Forceps	10	10	10	0	20	50	
F- 4 WILD's Ear Snare	10	10	0	0	0	20	
F- 5 MANASSE-PASSOW's Retractor	10	2	0	0	0	12	
F- 6 JANSEN's Retractor	10	2	5	0	0	17	
F- 7 KABIERSKIE's Powder Blower	10	5	10	0	20	45	
F- 8 KRAUSE's Ear Snare	10	10	0	0	20	40	
F- 9 VOLKMANN's Retractor	10	2	0	0	0	12	
F-10 VOLKMANN's Bone Curettes Set	3	1	0	0	0	4	
F-11 KILLIAN's Pattern Raspatory	10	5	0	0	0	15	

6. Equipment for Ear, Nose, Throat

Generic Title / Hospital	Q'TY					Total	Specifications
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
F-12 LUCAE's Metal Mallet	5	5	0	0	0	10	
F-13 SCHWARTZE's Chisels	3	0	0	0	0	3	
F-14 SCHWARTZE's Gouges	3	0	0	0	0	3	
F-15 - 1 CITELLI's Sinus Bone Rongeur	10	0	0	0	0	10	
F-15 - 2 JANSEN's Bone Rongeur	10	0	0	0	0	10	
F-16 BARTH's Bone Curette double-ended	20	5	0	0	0	25	
F-17 LEMPERT's Nippert	20	5	0	0	0	25	
F-18 ZOELLNER's Typanoptasty Instrument Set	1	1	1	0	0	3	
F-19 SHEA's Scissors	1	0	1	0	0	2	
F-20 SHEA's Teflon Piston	100	0	30	0	0	130	
F-21 Austin Teflon Umbreila	100	0	30	0	0	130	

6. Equipment for Ear, Nose, Throat

Generic Title / Hospital	Q'TY					Total	Specifications
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
F-22 SHEA's Teflon Drain Tube	100	0	30	0	0	130	
F-23 Ear Speculum Set	10	5	10	0	12	37	
F-24 Head Mirror	30	10	30	0	20	90	
F-25 Ear Syringe 50 ml	20	10	20	0	20	70	
F-26 Endoaral Retractor	5	0	5	0	0	10	
F-27 Surgical Suture Needles	100	20	100	0	40	260	
F-28 SLUDER's Tonsillectome	10	0	0	0	0	10	
F-29 MYLES's Lingual Tonsil Guillotine	10	0	0	0	0	10	
F-30 DENKER's Peritonsillar Abscess Knife	20	0	0	0	0	20	
F-31 TAKAHASHI's Tonsil Seizing Forceps	40	5	0	0	0	45	
F-32 KUBO's Tonsil Seizing Forceps	40	5	0	0	0	45	

6. Equipment for Ear, Nose, Throat

Generic Title / Hospital	Q'TY C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District	Total	Specifications
F-33 OKADA's Tonsil Scissors	40	10	0	0	0	50	
F-34 TYDING's Tonsil Snaare	10	10	0	0	0	20	
F-35 JOHNSON's Palate Retractor	20	10	0	0	0	30	
F-36 YOSHIDA's Aspirating Tonsil Dissector	20	40	0	0	0	60	
F-37 Tonsil Abscess Knife curved	40	20	0	0	0	60	
F-38 OKADA's Tonsil Knife and Dissector	10	10	0	0	0	20	
F-39 BROPHY's Staphylorrhaphy Knife	20	10	0	0	0	30	
F-40 MAURICE-SASAKI's Tonsil Ligature Forceps	20	10	0	0	0	30	
F-41 Laryngeal Mirror	20	20	0	0	40	80	

6. Equipment for Ear, Nose, Throat

Generic Title / Hospital	Q'TY					Total	Specifications
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
F-42 KUZUME's Laryngeal Syringe	20	10	0	0	40	70	
F-43 TOBOLD's Laryngeal Forceps	10	10	0	0	20	40	
F-44 FRAENKEL's Laryngeal Knife	10	10	0	0	20	40	
F-45 LABORDE's Tracheal Dilator, 3 pronges	10	10	0	0	15	35	
F-46 TROUSSEAU's Tracheal Dilator	10	10	0	0	20	40	
F-47 FRAENKEL's Laryngeal Forceps	3	1	0	0	4	8	
F-48 KOCHER's Thyroid Probe	10	5	0	0	4	19	
F-49 LUER's Tracheal Tube	5	3	0	0	4	12	
F-50 Tracheotomy Instrument Set	2	20	0	0	4	26	

6. Equipment for Ear, Nose, Throat

Generic Title / Hospital	Q'TY C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District	Total	Specifications
F-51 Nasal Speculum							
- 1 - LENPERT's	10	10	10	0	20	50	
- 2 - WATSUJI's	10	10	10	0	20	50	
- 3 - HARTMANN's	10	10	10	0	20	50	
- 4 - KILLIAN's	10	5	10	0	0	25	
F-52 KRAUS's Nasal Snare	10	5	0	0	12	27	
F-52 HARTMANN's Nasal - 1 Forceps, cupped jaw	12	5	0	0	0	17	
F-52 GRUENWALD's Nasal - 2 Cutting Forceps	10	5	0	0	0	15	
F-52 BRUENING's Septum - 3 Forceps, 1-2	15	5	0	0	0	20	
F-52 SAKAKI's Septum - 4 Forceps	10	5	0	0	0	15	
F-52 KUKUCHI's Nasal - 5 Forceps	10	2	0	0	0	12	
F-52 Maxillary Sinus - 6 Forceps	10	5	0	0	0	15	
F-52 GRUENWALD's Nasal - 7 Forceps	10	5	0	0	0	15	

6. Equipment for Ear, Nose, Throat

Generic Title / Hospital	Q'TY C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District	Total	Specifications
F-52 NISHITATE's Ethmoid - 8 Forceps							
- up-curved	5	5	0	0	0	10	
- slightly courved	5	3	0	0	0	8	
- Straight	5	3	0	0	0	8	
F-53 HEYMANN's Turbinate - 1 Scissors	10	10	0	0	0	20	
F-53 BECKMANN's Turbinate - 2 Scissors	10	5	0	0	4	19	
F-53 BECKMANN's Middle - 3 Turbinate Scissors	10	5	0	0	4	19	
F-54 KILLIAN's Maxillary - 1 Sinus Mucosa Elevators	10	5	0	0	0	15	
F-54 TORII's Maxillary - 2 Sinus Mucosa Elevators, double-ended	10	5	0	0	0	15	
F-55 TADOKORO's Gingival - 1 Incising Knife	20	5	0	0	4	29	
F-55 KYOTO Univ. pattern - 2 Mucosa Knife, of maxillary sinus	20	5	0	0	0	25	

6. Equipment for Ear, Nose, Throat

Generic Title / Hospital	Q'TY					Total	Specifications
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
F-56 KILLIAN's Frontal - 1 Sinus Cannula	10	10	0	0	4	24	
F-56 KILLIAN's Ethmoid - 2 Cannula	10	0	0	0	0	10	
F-57 HAJEK's Ethmoid - 1 Cellulitis Operating Instrument Set	5	0	0	0	0	5	
F-57 Frontal Sinus Rasps - 2	10	5	0	0	0	15	
F-57 KILLIAN's Eyeball - 3 Protector	10	5	0	0	0	15	
F-58 KUBO's Maxillary - 1 Antrum Probe	10	0	0	0	4	14	
F-58 KILLIAN's Maxillary - 2 Antrum Probe	10	0	0	0	4	14	
F-58 MIKULICZ's Maxillary - 3 Antrum Cannula	10	0	0	0	4	14	
F-58 KILLIAN's Frontal - 4 Sinus Probe	10	0	0	0	0	10	

6. Equipment for Ear, Nose, Throat

Generic Title / Hospital	Q'TY					Total	Specifications
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
F-59 KASHIWABARA's Nasal - 1 Retractor	10	0	0	0	0	10	
F-59 STERNBERG's Lip - 2 Retpractor	10	0	0	0	0	10	
F-59 DENHART's Mouth Gogs - 3	10	0	0	0	0	10	
F-59 WHITEHEAD-JENING's - 4 Mouth Gogs	10	5	0	0	0	15	
F-60 KILLIAN's Gouge	10	5	0	0	0	15	
F-61 MIKULICZ's Maxillary Antrum Trocar	10	10	0	0	4	24	
F-62 TANAKA's Sinus Rasps	20	5	0	0	4	29	
F-63 TAKAHASHI's Suture Needle Holder	1	1	0	0	0	2	
F-65 Automatic Recording Audiometer	1	0	1	0	0	2	
F-66 Binocular Microscope for ENT	1	1	1	0	0	3	

6. Equipment for Ear, Nose, Throat

Generic Title / Hospital	Q'TY					Total	Specifications
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
F-68 Otoscope	1	0	0	0	0	1	
F-69 Antroscope	1	0	1	0	0	2	
F-70 Oto Nasal Scope	1	0	0	0	0	1	

7. Equipment for Ophthalmic

Generic Title / Hospital	Q'TY C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District	Total	Specification
G- 2 Slit Lamp	1	0	1	0	0	2	
G- 3 Compact Slit Lamp	0	1	0	0	4	5	
G- 4 Ultrasonic Scanner	0	1	0	0	0	1	
G- 5 Ophthalmoscope	1	1	1	0	4	7	
G- 6 Ophthalmoscope with Battery	1	0	1	0	0	2	
G- 7 Trail Lens Set	2	0	2	0	4	8	
G- 8 Microsurgical Set for Cataract and Glaucoms	2	0	1	0	0	3	
G- 9 Microsurgical Set for Crystlline Lens	1	0	0	0	0	1	
G-10 Microsurgical Suture with Needle							
- 6-0	100	0	100	0	0	200	
- 7-0	0	0	100	0	0	100	
- 8-0	0	0	100	0	50	150	
- 9-0	200	0	200	0	50	450	
- 10-0	500	0	200	0	0	700	
G-12 Needle Holder	5	0	5	0	0	10	

7. Equipment for Ophthalmic

Generic Title / Hospital	Q'TY					Total	Specification
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
G-13 Scissors, Corneal Section	5	0	5	0	0	10	
G-14 Forceps, Corneal	5	0	5	0	0	10	

8. Dental Equipment

Generic Title \ Hospital	Q'TY					Total	Specification
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
H- 1 Laboratory Micromotor	0	2	0	0	4	6	
H- 3 Dental Pulp Tester	1	1	1	0	0	3	
H- 5 Centrifugal Casting Machine	1	1	0	0	4	6	
H- 6 Dental Operative Instrument	2	1	1	0	4	8	

9. X-ray Equipment

Generic Title / Hospital	Q'TY					Total	Specification
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
I- 1 ~14 Remote Control Type X-ray TV System and General-purpose Radiography System	1	1	1	1	0	4	

10. Equipment for Gynecology

Generic Title / Hospital	Q'TY					Total	Specification
	C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District		
J- 1 Hystero-salpingography Set	0	0	1	0	0	1	
J- 2 Amniotic Fluid Suction Catheter	0	0	4	0	0	4	
J- 3 Hysteroscope System	0	0	1	0	0	1	
J- 4 KEIO-Univ. Type Salpingoplasty Apparatus	0	0	1	0	0	1	
J- 5 Gynecological Examination Table	0	0	2	0	0	2	
J- 6 Light Source	0	0	1	0	0	1	

11. Urological Equipment

Generic Title / Hospital	Q'TY C.R.C.H. First	U.B.C.C. Third	M.C.H.	O.C.	District	Total	Specification
K- 1 Light Source for Light Guide Bundle	1	0	0	0	0	1	
K- 4 Percutaneus Nephroscope Set	1	0	0	0	0	1	
K- 9 Nephrostomy Catheter							
-1 14x4	20	0	0	0	0	20	
-2 14x5	20	0	0	0	0	20	
-3 16x6	20	0	0	0	0	20	
-4 16x8	30	0	0	0	0	30	
-5 18x8	30	0	0	0	0	30	
-6 20x8	30	0	0	0	0	30	
-7 22x8	30	0	0	0	0	30	
K-10 Balloon Catheter							
- 1 - 8 Fr.	10	0	0	0	0	10	
- 2 - 10 Fr.	10	0	0	0	0	10	
- 3 - 12 Fr.	30	0	0	0	0	30	
- 4 - 14 Fr.	50	0	0	0	0	50	
- 5 - 16 Fr.	100	0	0	0	0	100	
- 6 - 18 Fr.	500	0	0	0	0	500	
- 7 - 20 Fr.	300	0	0	0	0	300	
- 8 - 22 Fr.	300	0	0	0	0	300	
- 9 - 24 Fr.	200	0	0	0	0	200	

12. Repair Equipment for Maintenance Center

	Generic Title	Q'ty	Specification
L- 1	Bacuum Gauge for X-ray Tube	1	
L- 2	X-ray Tube Voltage Meter	1	
L- 3	Memory Oscilloscope	1	
L- 4	Gauge for mA, mAS	1	
L- 5	2 Channel Portable Digital Oscilloscope	2	
L- 6	Condensor Type mA Gauge	1	

2. Phase II

1. (Endoscope Equipment)

Generic Title / Hospital	Q'ty		Total	
	Aimak	Somon		
A- 1 Gastrointestinal Fiberscope	5		5	
A- 5 Halogen Light Source	5		5	
A- 9 Mobile Disinfection Equipment	5		5	
A-22 Halogen Lamp JCM 15-150W	10		10	

2. (Ultrasound Diagnostic Equipment)

Hospital / Generic Title	Q'ty		Total	
	Aimak	Somon		
B-12 Portable Echocamera	7		7	

3. (Surgical, Anesthetic, Reanimation Equipment)

Generic Title / Hospital	Q'ty		Total	
	Aimak	Somon		
C- 4 Ventilator	7		7	
C-21 Surgical Suture Needle Code : T	5	10	15	
C-22 Surgical Suture Needle Code : R	1	10	11	
C-23 Surgical Suture Needle Code : C	1	10	11	
C-24 Surgical Suture Needle Code : V	5	10	15	
C-25 Blood Vessel Suture Needle	1	10	11	
C-26 Eye Suture Needle	3	10	13	
C-27 Small Operating Instrument Set	7		7	
C-29 Gastrectomy Instrument Set	7		7	
C-33 Operating Light	7	10	17	

3. (Surgical, Anesthetic, Reanimation Equipment)

Generic Title / Hospital	Q'ty		Total	
	Aimak	Somon		
C-34 Urethral Silicone Rubber		200	200	
C-35 Whistle Tip Urethral Catheter		200	200	
C-36 Nasal Oxygen Catheter, Green	50	200	250	
C-37 Intravenous Catheter	50	200	250	
C-38 Polyethilen Tubing 5m ling	50	200	250	
C-39 Infant Feeding Tube 400mm long	50	200	250	
C-40 Stomack Tube 125cm	50	200	250	
C-41 Trocars 3.0, 3.5-4.0	8	40	48	
C-42 Ascites Trocars, 4.N	15	40	55	
C-43 Silk Suture Braided Non Terile	10	10	20	

8. (Surgical, Anesthetic, Reanimation Equipment)

Hospital / Generic Title	Q'ty Aimak	Q'ty Somon	Total	
C-45 Endotracheal Tube 8-22041				
- 1 - 2.5mm	50		50	
- 2 - 3.0mm	50		50	
- 3 - 3.5mm	50		50	
- 4 - 4.0mm	50		50	
- 5 - 4.5mm	50		50	
- 6 - 5.0mm	50		50	
- 7 - 5.5mm	40		40	
C-46 Endotracheal Catheter	50		50	
C-47 Ventricular Catheter and Ureteral Cathe.	500		500	
C-48 Venepuncture Catheter with Contrast	500		500	

3. (Surgical, Anesthetic, Reanimation Equipment)

Generic Title / Hospital	Q'ty		Total	
	Aimak	Somon		
C-49 Gastroesophageal Catheter for Child.	200		200	
C-50 Berman Airway	50		50	
C-51 Manual Resuscitator	21		21	
C-53 Laryngoscope	7	40	47	
C-58 Amnioscope Cervical Channel Dilator		40	40	
C-60 Cusco's Vaginal Speculum		200	200	
C-62 Vagina de Yanagi Retractor		200	200	
C-64 Cesarean Incision Set	7		7	
C-65 Portable Doppler Fetus Detector	7		7	
C-66 Uterine Curette	7	40	47	

3. (Surgical, Anesthetic, Reanimation Equipment)

Generic Title / Hospital	Q'ty		Total	
	Aimak	Somon		
C-67 Electrocardiograph 3 Channel	6		6	
C-68 Electrocardiograph 1 Channel Portable		40	40	

4. (Laboratory Equipment)

Generic Title \ Hospital	Q'ty		Total	
	Aimak	Somon		
D- 2 Monocular Microscope	7	40	47	
D- 3 Binocular Microscope	15		15	
D- 4 Hemometer	10	40	50	
D- 5 Hemacytometer		40	40	
D- 6 Differential Leucocyte Counter		40	40	
D- 8 Colorimeter	7		7	
D-28 Hemoglobin Meter	7		7	
D-29 Refractometer	7		7	

5. (Pulmonary Function Equipment)

Generic Title / Hospital	Q'ty		Total	
	Aimak	Somon		
E- 9 Pulmonary Function Test System	7		7	

6. (Equipment for Ear, Nose, Throat)

Generic Title / Hospital	Q'ty		Total	
	Aimak	Somon		
F- 1 OKONOGI's Ear Forceps	50	200	250	165
F- 2 HARTMANN's Ear Forceps	25	100	125	60
F- 3 Ear Forceps	30		30	50
F- 4 WILD's Ear Snare	25	100	125	20
F- 5 MANASSE-PASSOW's Retractor	35		35	12
F- 7 KABIERSKIE's Powder Blower	25	250	275	45
F- 8 KRAUSE's Ear Snare	25	100	125	40
F- 9 VOLKMANN's Retractor	25		25	12
F-10 VOLKMANN's Bone Curettes Set	5		5	4
F-18 ZOELLNER's Typanoptasty Instrument Set	5		5	3

6. (Equipment for Ear, Nose, Throat)

Generic Title / Hospital	Q'ty		Total	
	Aimak	Somon		
F-23 Ear Speculum Set		80	80	
F-24 Head Mirror	25	120	145	
F-25 Ear Syringe 50 ml	25	120	145	
F-28 SLUDER's Tonsillectome	25		25	
F-29 MYLES's Lingual Tonsil Guillotine	30		30	
F-41 Laryngeal Mirror		120	120	

7. (Equipment for Ophthalmic)

Generic Title \ Hospital	Q'ty		Total	
	Aimak	Somon		
G- 5 Ophthalmoscope	5		5	
G- 6 Ophthalmoscope with Battery	5		5	
G-10 Microsurgical Suture with Needle				
- 8-0	1		1	
- 9-0	1		1	
G-12 Needle Holder	20		20	
G-13 Scissors, Corneal Section	20		20	
G-14 Forceps, Corneal	20		20	

8. (Dental Equipment)

Generic Title / Hospital	Q'ty		Total	
	Aimak	Somon		
H- 5 Centrifugal Casting Machine	7		7	
H- 6 Dental Operative Instrument	7	40	47	
H- 7 Table Anesthesia		40	40	
H- 8 Physician Bag		40	40	
H- 9 Hair Washing Trolley		40	40	
H- 10 Kelly's Pad		80	80	

9. (X-ray Equipment)

Generic Title / Hospital	Q'ty		Total	
	Aimak	Somon		
I- 1 ~14 Remote Control Type X-ray TV System and General-purpose Radiography System