

**Ministry of Labour, Health and Social Affairs
Georgia**

**BASIC DESIGN STUDY REPORT
ON
THE PROJECT
FOR
IMPROVEMENT OF MEDICAL EQUIPMENT
OF THE NATIONAL REFERRAL HOSPITALS
IN
GEORGIA**

JUNE 2001

**JAPAN INTERNATIONAL COOPERATION AGENCY
CRC OVERSEAS COOPERATION Inc.**

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PREFACE

In response to a request from the Government of Georgia, the Government of Japan decided to conduct a basic design study on the project for Improvement of Medical Equipment of the National Referral Hospitals and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Georgia a study team from November 12 to December 14, 2000.

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

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

I wish to express my sincere appreciation to the officials concerned of the Government of Georgia for their close cooperation extended to the teams.

June, 2001

Kunihiko Saito
President
Japan International Cooperation Agency

June, 2001

Letter of Transmittal

We are pleased to submit to you the basic design study report on the project for Improvement of Medical Equipment of the National Referral Hospitals in Georgia.

This study was conducted by CRC Overseas Cooperation Inc., under a contract to JICA, during the period from November 8, 2000 to July 6, 2001. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Georgia and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

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

Very truly yours,

Yoshiharu HIGUCHI

Project manager,
Basic design study team on
the project for Improvement of Medical
Equipment of the National Referral Hospitals
in Georgia
CRC Overseas Cooperation Inc.



The Centre of Urgent Cardiology

The Prof. O. Gudushauri General Hospital

Ministry of Labour, Health and Social Affairs

Location Map of the Prof. O. Gudushauri General Hospital and the Centre of Urgent Cardiology



Location Map of Georgia



Prof. O. Gudushauri General Hospital before renovation work



**Renovation work of the hospital
(Prof. O. Gudushauri General Hospital)**



**X-ray unit with technical troubles
(Prof. O. Gudushauri General Hospital)**



**Unequipped laboratory
(Prof. O. Gudushauri General Hospital)**



**Obsolete manual operation table
(Prof. O. Gudushauri General Hospital)**



**Consultation at surgery department
(Prof. O. Gudushauri General Hospital)**



Centre of Urgent Cardiology



**Obsolete sterilizer
(Centre of Urgent Cardiology)**



**Ventilator with technical troubles
(Centre of Urgent Cardiology)**

Abbreviations

CCU	Coronary Care Unit
CIS	Commonwealth of Independent States
CT	Computed Tomography
ECG	Electrocardiograph
ELV	Elevator
E/N	Exchange of Notes
EU	European Union
GEL	Georgian Lari
GDP	Gross Domestic Product
ICU	Intensive Care Unit
JICA	Japan International Cooperation Agency
M/D	Minutes of Discussions
MRI	Magnetic Resonance imaging
NIBP	Non-Invasive Blood Pressure
USA	United States of America
US\$	U.S. Dollar
WHO	World Health Organization

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Chapter 1

Background of the Project

Chapter 1 Background of the Project

1-1 Background

Georgia (pop. 4.67m. total area: 69, 700km²) is located on the Caucasus, surrounded by the Black Sea and the Caspian Sea, and has borders with Turkey, Armenia, and Azerbaidjan.

Since gaining independence from the Soviet Union, Georgia has been progressing with a reform program aimed at a market-based economy. It was, though, faced from the outset with the problems common to all the old Socialist countries, namely an almost stagnant industry, severely reduced exports, and an unreliable taxation system, with the result that the GDP in the 1994 fiscal year had dropped to 30% of 1990's GDP. However, since 1995 the economy has clearly stabilized, structural reforms are well underway and, in spite of being greatly affected by the Russian Financial Crisis of 1998, the agricultural sector and the partially revitalized industrial sector are supporting development, and as of fiscal 1999 the Georgian economy is sustaining positive growth (an actual growth rate of 3.0%).

As a result of the stagnation of the economy, the low-cost approach to public services seen right across the former Socialist states, and the lack of any health care strategy based on a market economy, the Health Service of Georgia is not functioning effectively, and is now in a condition whereby it cannot offer sufficient medical services. The Ministry of Labour, Health, and Social Affairs of Georgia perceives the medical sector to have a number of problems. These are summed up below:

- 1) Deterioration in the health index covering Maternal and Child Health, caused by poor early diagnosis and prevention measures.
- 2) Declining quality of health care services due to insufficient medical equipment and facilities.
- 3) Lack of health care services for the economically deprived.
- 4) Excessive medical facilities (around two times more than the demand)
- 5) Lack of funds for health care services.

In order to improve this situation, the Ministry of Labour, Health, and Social Affairs of Georgia is proceeding with a "Restructure Plan". This is aimed at 1) integration and part privatization of medical facilities that ballooned and became excessive during the former system, 2) bringing medical facilities down to a number suitable for the beneficiary population, 3) maintenance of medical facilities and equipment, and 4) improvement of

hospital administration. As part of the Plan, the Ministry is pressing ahead with the privatization and restructuring of clinics and ambulatory hospitals. However, “Prof. O. Gudushauri General Hospital” (hereinafter referred as Gudushauri General Hospital) and “Centre of Urgent Cardiology”, the two hospitals our plan focuses on, are ranked as strategically vital medical facilities under this Restructure Plan, and as such they will continue to be run as state-owned national referral hospitals. However in spite of their important role as national referral hospitals both hospitals are in a decrepit state, in particular the inferior condition of the existing medical equipment is remarkable, and in addition to this there is a shortage in the absolute quantity of equipment, which is presenting a serious obstacle to medical treatment. The Ministry of Labour, Health, and Social Affairs is carrying out a program of repairs on the facilities and renewing equipment out of its own budget, but it is not progressing sufficiently well due to financial difficulties and cannot at present provide adequate medical care.

Under the above circumstances, the Ministry of Labour, Health, and Social Affairs of Georgia submitted a request to the Japanese Government for provision of medical equipment for the Gudushauri General Hospital and the Centre of Urgent Cardiology. Upon receiving this request, JICA carried out a project formulation study in Georgia and Azerbaijan and, having confirmed the necessity and the validity of this project, conducted a basic design study for this project.

1-2 Outline of the Project

Request Date	: 5 November, 1998
Responsible Authority	: Ministry of Labour, Health and Social Affairs of Georgia
Project Site	: Prof. O. Gudushauri General Hospital, Centre of Urgent Cardiology
Contents of Request	: Procurement of total 338 items of medical equipment to 2 hospitals in Tbilisi

(1) Prof O. Gudushauri General Hospital

The Gudushauri General Hospital will resume services in April 2002. It has 180 beds, and it should provide treatment for those people who live in the western part of Georgia. The hospital is ranked as a strategic medical facility in the health care sector of Georgia, and, under the Restructure Plan which is currently being carried out in this sector, it will be

henceforth run by the state as one of 4 top referral hospitals in the country.

Main Requested items:

MRI, CT-scanner, Radiological unit, US scanner, Patient monitor, Anesthetic unit, Ventilator, Operation table, Surgical instrument, Endoscope, etc - total 234 items

(2) Centre of Urgent Cardiology

The Centre of Urgent Cardiology's role, under the Georgian health care system, is to provide all levels treatment for cardio-vascular diseases for the whole of Georgia. Furthermore, under the Restructure Plan currently being carried out, it will remain as a public medical facility dealing with cardio-vascular diseases.

Main Requested items:

US scanner, ECG equipment, Defibrillator, Patient monitor, Ventilator, Laboratory equipment, Operation table, etc. – total 104 items

Chapter 2

Contents of the Project

Chapter 2 Contents of the Project

2-1 Objectives of the Project

(1) Objective of the Project

The project for Improvement of Medical Equipment of the National Referral Hospitals (hereinafter referred as the project) has as its object the Gudushauri General Hospital and the Centre of Urgent Cardiology in Georgia. The objective is to restore and improve the medical function of both the above hospitals and to work towards improvement of the quality of Georgia's national medical health services. Furthermore, the project will support the 'Georgia Medical Sector Restructure Plan' being promoted by the Government of Georgia with the cooperation of the World Bank.

The loan for the Gudushauri General Hospital from the World Bank is planned to go towards renovation work to its facilities and the procurement of some equipment. This equipment will not suffice for the hospital's activities as a general hospital, therefore this project will bear the costs of part of the medical equipment improvement.

The improvement of a hospital, which treats cardio-vascular diseases –accounting for 70% of all causes of death among Georgians – has been taken up greatly by the Government as an important topic in the Georgian Health Sector. The fit out of the Centre of Urgent Cardiology is expected to contribute greatly to improvements in health among the Georgian people.

(2) Input of the Project

The Project will procure 150 items to the Gudushauri General Hospital and the Centre of Urgent Cardiology.

Gudushauri General Hospital:

CT-scanner, Radiological unit, US scanner, Patient monitor, Anesthetic unit, Ventilator, Operation table, Surgical instrument, Endoscope, etc - total 107 items

Centre of Urgent Cardiology:

US scanner, ECG equipment, Defibrillator, Patient monitor, Ventilator, Laboratory equipment, Operation table, etc. – total 43 items

(3) Project sites and main government office

Project area: Over all Georgia
Responsible Authorities: Ministry of Labour, Health and Social Affairs of Georgia
Project site: The Prof. O. Gudushauri General Hospital
The Centre of Urgent Cardiology

2-2 Basic Concept of the Project

This project has focused on the procurement of equipment that is essential, gives reasonable benefits and can be used continuously. The project also has weighed up the procurement of equipment giving due thought to the facilities' installation environment, operations and maintenance, and has investigated the supply of equipment to both hospitals. The project team has planned and selected medical equipment with reference to the equipment requests from both hospitals. Selections have been made in accordance with the basic cooperation principles of Japanese Grant Aid and based on the following basic concept.

Basic Concept of the Project

- To incorporate within the scope of the project consideration of the health care system, hospital scale and organization best suited to Medical Sector Restructure Plan.
- This project aims to coordinate with the World Bank's Rehabilitation Plan and the equipment supplied by the World Bank.
- To make administration of maintenance and operations possible by the Ministry of Labour, Health and Social Affairs of Georgia, the Gudushauri General Hospital and the Centre of Urgent Cardiology.
- Medical equipment with limited beneficiaries, non-essential equipment, simple equipment possible to obtain by own budget at local market, consumable goods, furniture and stationary are considered beyond the scope of the project.
- To give due attention to administration of maintenance and operations and consider the supply system of consumable goods, and a sustainable service system. Minimum consumable goods necessary at the time of installation for the first operation of the equipment will be supplied.

2-3 Basic Design

2-3-1 Design Policy

(1) Policy concerning natural environment conditions

Both hospitals are situated in Tbilisi (460m above sea level) which lies in a mountainous region in the Caucasus. Tbilisi annual average temperatures are slightly lower than those of Tokyo: 22 degrees Centigrade in summer and 0 degrees in winter. It receives an average rainfall of just 550mm per year, and annual days of sunshine reach 200 on average. The water supply is amply provided for by a man-made lake behind Tbilisi. The water is slightly hard but the quality is comparatively good.

The natural climate described above is unlikely to affect normal efficiency of the supplies covered within this project and additional measures due to natural conditions are no considered necessary.

Concerning transportation one of the main ports of Georgia – Poti is secured as a transportation route all the year around and problems such as freeze in wintertime are not envisaged.

(2) Policy concerning the scope and grade of equipment

1) Policy concerning medical equipment

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

2) Policy concerning consumable goods and spare parts

This project will prioritize the procurement of equipment which supply system of consumable goods and spare parts is prompt and inexpensive, and frequent repair is unnecessary. Consumable goods will be supplied at the time of installation in order to conduct smooth start of operation. It is confirmed that the quantity of consumable goods should be suited to the above objectives and the Ministry of Labour, Health and Social Affairs and the both hospitals will be responsible for further procurement.

(3) Policy concerning maintenance and management

Both hospitals are perceived to have an understanding of the latest medical equipment

and are considered able to deal with the maintenance and management – mainly focused on daily maintenance - of the apparatus introduced through this project. Further, they intend to employ new staff in accordance with the new supply of medical equipment. A system for the effective use of equipment after the procurement is being drawn up. Therefore, there are no problems concerning maintenance and management.

(4) Policy concerning local agents of manufacturer of the equipment

As for the equipment that requires periodical maintenance or a continuous supply of consumable goods and reagents, it is essential to consider procurement from Japanese or third-party countries (USA and / or EU) manufacturers that have distributors or agents in neighboring countries of Georgia, i.e. Armenia, Azerbaidjan, etc.

(5) Inland transportation policy

The goods are to be unloaded at one of the main ports of Georgia - Poti and transported over-land across to Tbilisi. This is thought to be the best route for transportation of goods to Georgia.

(6) Policy for the installation work period

This project is estimated to take effect within one financial year.

To ensure there are no hindrances to the implementation schedule including supply from third country, transportation and installation times will be adequately investigated.

2-3-2 Basic Plan

2-3-2-1 Total concept of project planning

This project targets 107 items of equipment confirmed as appropriate for the Gudushauri General Hospital and 43 items for the Centre of Urgent Cardiology. The renovations to the Gudushauri General Hospital using the World Bank loan have been carried out, whilst at the Centre of Urgent Cardiology, the aforementioned apparatus will mostly be replacing obsolete equipment and thus there will be no difficulty in accommodating it within the building. However, this project has given due consideration to the amount of time needed for the completion of the above work. Attention has also been paid to the operations and maintenance of the equipment after installation and to the continuous supply of technical services and consumables.

2-3-2-2 Equipment Plan

Table 2-1 lists the equipment planned for procurement.

Table 2-1 Equipment List (Gudushauri General Hospital)

Item No	Name of Medical Equipment	Q'ty
1	Abdominal hysterectomy instrument set	1
2	Abrams pleural biopsy set	4
3	Caesarian instruments set	2
4	Gall bladder surgical instrument set	2
5	Intestinal surgical instruments set	1
6	Lamp, surgical, batteries, mobile	2
7	Lamp, surgical, ceiling	5
8	Skin biopsy set	4
9	Skin graft surgical instrument set	3
10	Surgical instruments set, large	3
11	Surgical minor set	2
12	Thyroidectomy surgical instrument set	1
13	Vasectomy surgical instrument set	2
14	Abdominal Tubal ligation set	1
15	Cholecystectomy instruments set	1
16	Orthopedic surgical instruments small set	1
17	Orthopedic surgical instruments big set	1
18	Anesthetic unit with ventilator	4
19	Electrosurgical unit	4
20	Operating table (general and cesaria)	2
21	Operating table (general and ortho.)	2
22	Suction pump, gynecological	6
23	Suction pump, high pressure	6
24	Suction pump, low pressure	6
25	Table mayo instrument patt	4
26	Intra venous cut down set	2
27	Infusion pump, syringe	10
28	Infusion pump, volumetric	6
29	Instrument set intubation	8
30	Instrument set for intubation of the trachea	2
31	Laryngoscope, 3 curved blades	2
32	Laryngoscope, 3 curved blades, infant	1
33	Laryngoscope, adult/pediatric	2
34	Laryngoscope, straight blade, infant	1
35	Monitor, ECG/HR/NIBP/Temp./SpO2	14
36	Patient monitoring central w/printer	1
37	Ventilator volumetric, adult	4
38	Ventilator volumetric, neonatal	2
39	Bed (ICU)	10
40	Infant incubator, intensive care	3
41	Infant warmer	4
42	Bassinet mobile detach crib w/mattress	10
43	Gynecology basic set	4
44	Instrument set for delivery	2
45	Instrument set for Obs. & Gyn. consulting	3
46	US fetal detector	1
47	Vaginal repair & hysterectomy inst. set	2
48	Vaginal suture set	4
49	Examination couche for gynecology	4
50	Obstetric table with mattress	2
51	Bilirubinometer	1

Table 2-1 Equipment List (Gudushauri General Hospital)

Item No	Name of Medical Equipment	Q'ty
52	Blood gas analyzer	1
53	Freezer	2
54	pH meter	1
55	Refrigerator, laboratory	1
56	Fume hood	2
57	Blood bags' seal machine	1
58	Blood refrigerator	1
59	Blood units balance	1
60	Centrifuge for blood bags	1
61	Freezer, blood plasma	1
62	Refrigerator	1
63	Couch donor blood	1
64	CT-Scanner, spiral	1
65	Day-light processing machine	1
66	Exposimeter, automatic	1
67	Negatoscope, 3 parts	1
68	Radiologic unit, general examination	1
69	US scanner mobile with 2 probes and printer	1
70	X-ray film cassettes (package)	1
71	X-ray processor, small capacity	1
72	X-ray protecting apron	2
73	X-ray protecting devices	2
74	Intraoral Xray	1
75	Mammography unit	1
76	Bath tubs for hydrotherapy	2
77	Microwave therapy equipment	1
78	Nebulizer, ultrasonic	5
79	Patient lifter, hydrotherapy	1
80	Shortwave therapy equipment	1
81	Ultrasound therapy equipment	1
82	Ultraviolet-Infrared therapy equipment	1
83	Hydrocollator unit	1
84	Phototherapy unit	6
85	Bath wax for foot	1
86	Bath wax for hand	1
87	Cold light source unit	3
88	Colonofibroscope	2
89	Fibrobroncoscope	2
90	Fibrocistoscope	1
91	Fibroduodenscope	1
92	Fibrogastroscope	2
93	Rectoscope	1
94	Washer, flexible endoscopes	2
95	Video monitor system for endoscopy	2
96	Suction pump for endoscopy	3
97	Cabinet storage endoscope	2
98	Sphygmomanometer, neonatal, mobile	3
99	Spirometer	1
100	Sterilizer, dry	6
101	Instrument set for ward	6
102	Otho-ophthalmoscope	5

Table 2-1 Equipment List (Gudushauri General Hospital)

Item No	Name of Medical Equipment	Q'ty
103	Postmortem instrument set	2
104	Chair wheel	4
105	Mattress ripple anti bed sore	4
106	Bed (ward) height adjust	12
107	Cabinet biosafety	2

Table 2-1 Equipment List (Centre of Urgent Cardiology)

Item No	Name of Medical Equipment	Q'ty
1	Anesthetic unit with ventilator	2
2	Cardiosurgical instruments set	2
3	Electrosurgical unit	1
4	Infusion pump, syringe	5
5	Lamp, surgical, batteries, mobile	1
6	Lamp, surgical, ceiling	1
7	Laryngoscope, adult/pediatric	1
8	Operating table (general)	1
9	Suction pump, high pressure	2
10	Suction pump, tracic	2
11	Surgical instruments set, large	2
12	X-ray processor, small capacity	1
13	X-ray unit, mobile	1
14	Defibrillator/monitor	2
15	Infusion pump, volumetric	5
16	Bed (ICU)	8
17	Monitor, ECG/HR/NIBP/Temp./Resp./SpO2	8
18	Monitor, ECG/HR/Resp	5
19	Oxymeter, pulse	2
20	Patient monitoring central w/printer	2
21	Resuscitator, manual, adult/pediatric	4
22	Tracheotomy set	2
23	Ventilator volumetric, adult	3
24	Ventilator, adult, mobile	2
25	Ventilator volumetric, neonatal	1
26	Automatic cell counter	1
27	Balance,analysis	1
28	Blood refrigerator	1
29	Blood gas analyzer	1
30	Centrifuge, universal	1
31	Coagulator analyzer,semi-automatic	1
32	Freezer	1
33	Microscope, binocular	2
34	Refrigerator, laboratory	1
35	Fibrobronchoscope with light source and suction pump	1
36	Electrocardiograph, 6ch	2
37	Spirometer	1
38	Veloergometer (treadmill and ECG)	1
39	Washer, flexible endoscopes	1
40	US scanner, multipurpose with 2 probes and printer	1
41	Sterilizer, dry	2
42	Sterilizer, steam, horizontal	1
43	Holter ECG equipment with 3 recorders	1

Table 2-1 shows the equipment judged appropriate for this project. This section deals with basic specifications of the equipment based on the results of the Basic Design Study.

(1) Gudushauri General Hospital

1) Medical Imaging

A CT will be one of the newly introduced pieces of equipment. This diagnostic equipment is paramount to Gudushauri General Hospital's role as a national referral hospital. On consideration that a) the CT can be used in a variety of consultations and treatment thanks to the improvements to be made to the quality and volume of the hospital's medical services for local Tbilisi and other patients, and b) that 15 examinations can easily be held in one day, this project will supply a Spiral CT.

A CT may show excellent results on diagnostic, however expensive bulbs need replacing roughly once a year as well as regular servicing 3 to 4 times per year. Therefore, CT's with low running costs will be procured, concerning with supply conditions and expenses of the regular servicing, spare parts and consumables (especially the providing system and the costs of bulbs and maintenance services).

As for a basic X-ray unit, a Bucky table type X-ray unit should be selected, in view of operability and maneuverability considerations. Concerning installation of the basic X-ray unit the renovation work for equipment's environment is planned under the World Bank's reconstruction plan, so there are no problems with utilities.

Mammography, mobile X-ray unit and intraoral X-ray unit barely have technical troubles, and there are no major problems associated with maintenance costs of the equipment, but it will be necessary to consider procurement from companies that can offer post-installation technical servicing.

It is expected that the amount of X-ray film development will increase after the procurement of equipment. The equipment planned for procurement should take 90 seconds per X-ray film for development.

This project will procure a US scanner, capable of A/B mode diagnostic imaging in operation rooms and obstetric & gynecology department. Probes should be frequency adjustable.

2) Surgical instrument (including operation room and rehabilitation room)

Under this Project the surgical instruments basically necessary for 8 operation rooms and the surgery department (including orthopedics) will be procured.

This project will provide electrically operated operating tables. Depending on the department to be installed, traction equipment for head, body and limbs etc. will be attached. There should be no problem concerning installation, if the existing equipment is removed. Also, there is no problem with utilities such as electricity.

Anesthetic apparatus with ventilator should be procured. The most commonly utilized halothane or isoflurane type vaporizers should be selected.

For ease of surgery, reliable ceiling operating lamps that provide localized light are necessary. The project will provide satellite-type shadowless lamps that are easily operated and produce a better shadowless effect by using the synergies of main and subsidiary lamps. There are no conceivable installation problems such as ceiling strength etc. when replacing the lamps.

The hospital has 2 existing electrosurgical units in good working order. Considering that the 2 more units will be procured by World Bank project this project will provide 4 units. A number of low-pressure suction pumps will be provided by the World Bank and this project will procure 6 high pressure, 6 low pressure pumps and 4 for use in obstetric & gynecology departments. Based on consulting with physicians at the Gudushauri General Hospital, excluding orthopedics surgery sets, which require the certain specifications depending on the operation type, standard surgical sets being used in Japan should be selected. Also, monopolar and bipolar electrosurgical units should be procured so that they can be used for coagulation and incisions by adjusting output.

The initial demand for surgical tool sets was a large one requesting one of each type of set per operating theatre. However, based on centralization system of the equipment, this project will procure several of sets with highest frequency in consideration of the necessity of sterilization.

The Gudushauri Centre for Traumatology and Orthopedics is the main orthopedics hospital in Georgia and has a proper treatment system with post-operative rehabilitation programs. It also functions as a central facility for other surgically-related rehabilitation. After the renovation, the Gudushauri General Hospital will also take on this function. To facilitate manipulation of the hospital professionals and patients, this project will procure equipment of the same basic grade as that of existing equipment currently in use.

3) Functional diagnostics

Several electrocardiographs, sphygmomanometers and stethoscopes were requested, however electrocardiographs have already been procured by the World Bank project. Since

sphygmomanometers and stethoscopes are both apparatus that can easily be purchased locally and within the hospital's budget, these have been deleted. However, sphygmomanometers for newborn babies cannot be procured locally and they, along with spirometers, will be procured.

4) Endoscopy

Flexible and rigid endoscopes able to share accessories depending on the objectives of use should be selected. In order to avoid unnecessary duplication of equipment, light sources, suction pump, video monitor set for endoscopy and washer for flexible endoscopy -as for a measure toward infection - should be shared in endoscopy room which will be renovated. This project will provide fibroduodoscope, fibrocolonoscope, fibrobronchoscope, fibrocystoscope and rigid rectoscope.

5) ICU

The initial demand for the monitoring system for patients was the system with various kinds and numbers of parameters. However, this project will procure all monitoring systems with common parameters (heart rate, respiration, ECG, non-invasive blood pressure, SpO₂, body temperature) and a central monitor.

Ventilator, volumetric infusion pump, syringe pump will be placed under supervision of ICU and each of them will have common specifications. This project also will procure infusion set that can be obtained easily at the local market or from the neighboring countries.

6) Mother and child health care

Mother and child health care is one of the new functions that will be included to Gudushauri General Hospital's activity after its renovation work. US fetal detector, gynecology basic set, instrument set for delivery, instrument set for obstetrics & gynecology consulting, gynecological suction pump, infant incubator for intensive care, infant warmer, examination couche for gynecology, obstetric table with mattress, bassinette mobile detach crib with mattress, abdominal tubal ligation set, they all are basic equipment for mother and child health care and will be installed to the departments of obstetrics, gynecology, pediatrics and neonatology. The specifications of above apparatus should be Japanese standard ones.

7) Laboratory

Most of the requested laboratory equipment that needed the replacement has been procured by World Bank's plan. Therefore, this project will provide a blood gas analyzer that came out of World Bank's procurement, but is necessary for emergency examination, pH meter and bilirubinometer which is necessary for jaundice test for infant. The above equipment requires frequent obtainment of reagents; therefore, it is necessary to plan the specifications of the equipment capable to obtain the reagents sufficiently. Furthermore, the above equipment should be procured in consideration of the ease of acquiring reagents and consumable goods at the local market after the procurement and also the appropriate provision of the local service.

(2) Centre of Urgent Cardiology

1) Medical Imaging

A mobile X-ray unit barely has technical troubles, and there are no major problems associated with maintenance costs of the equipment, but it will be necessary to consider procurement from companies that can offer post-installation technical servicing. Concerning X-ray film processor a small sized automatic developing type should be procured.

US scanner is widely used today to examine internal organs because it is possible to process the image of internal organs easily and involves no radiation exposure. This project will procure for the Centre of Urgent Cardiology a color doppler US scanner using for diagnosis of cardio-vascular diseases. Probes should be frequency adjustable.

2) Surgical instrument

Under this Project the surgical instruments necessary for 2 operation rooms and the surgery department will be procured. This project will provide electrically operated operating tables, in view of maneuverability considerations. Operation rooms are just renovated, so there is no problem concerning utilities such as electricity.

Anesthetic apparatus with ventilator should be procured. The most commonly utilized halothane or isoflurane type vaporizers should be selected.

The project will provide satellite-type shadowless lamps that are easily operated and produce a better shadowless effect by using the synergies of main and subsidiary lamps. This project will procure 2 high pressure, 2 low pressure suction pumps.

Based on a centralization system, this project will procure several of surgical sets in

consideration of the necessity of sterilization. Based on consulting with physicians at the Centre of Urgent Cardiology, excluding orthopedics surgery sets, which require the certain specifications depending on the operation type, standard surgical sets being used in Japan should be selected. Also, monopolar and bipolar electrosurgical units should be procured so that they can be used for coagulation and incisions by adjusting output. Steam sterilizer should be with the capacity of about 250 liters.

3) Functional diagnostics

ECG apparatus is essential equipment for cardiology. This project will provide 6ch ECG as minimum requirement. Holter ECG is used frequently, therefore 3 recorders should be procured. Veloergometer should be treadmill type. This project judges spirometer as appropriate equipment for procurement. Concerning endoscopy apparatus only bronchoscope will be procured with a standard set of light source, suction pump and forceps as accessories.

4) ICU

Monitoring systems with parameters for heart rate, respiration, ECG, non-invasive blood pressure, SpO₂, body temperature and a central monitor should be procured for the ICU being used mainly for post-operation recovery. For CCU this project plans to procure a central monitor and telemetry equipment.

Ventilator, volumetric infusion pump, syringe pump will be placed under centralized supervision and each of them will have common specifications. This project also will procure infusion set that can be obtained easily at the local market or from the neighboring countries.

5) Laboratory

Concerning analyzers such as blood gas analyzer necessary for emergency examination, blood cell counter, coagulator analyzer etc. which require frequent obtainment of reagents, it is necessary to plan the specifications of the equipment capable to obtain the reagents sufficiently. Furthermore, the above equipment should be procured in consideration of the ease of acquiring reagents and consumable goods at the local market after the procurement and also the appropriate provision of the local service.

2-3-2-3 Layout Plan of hospitals

The layout plans of both hospitals are shown below.

(1) Gudushauri General Hospital

The department plan of Gudushauri General Hospital after renovation work (Table 2-2) and its floor plan (Figure 2-1) are shown below.

Table 1-2 Department plan of Gudushauri General Hospital

Floor	Block “ G ”	Block “ A ”	Block “ V ”	Block “ Z ”
6 th	4 Operation theaters	Surgical ward (30 beds)	Surgical ward (30 beds)	Hall, ELV
5 th	ICU, CCU, C.S.S.D, Room for doctors on duty, Doctors training/Study rooms	Surgical ward (15 beds) Medical ward (15 beds)	Medical ward (30beds)	Hall, ELV
4 th	Delivery suite, Operation theater, Neonatology, New borns ICU	Gynecology ward (15 beds) Pediatric ward (15 beds)	Obstetrics ward (30 beds)	Hall, ELV
3 rd	Administration, Archive, Conference & seminar hall, Staff canteen	Opened deck	Opened deck	Hall, ELV
2 nd	Medical imaging, Pharmacy, Laboratories	(Unused)	(Unused)	Hall, ELV
1 st	Emergency Dept., Endoscopy Dept.	Surgery, Internal medicine, Obs & Gyne, Perinatal diagnostics, Functional diagnostics, Pediatrics, dental	Physiotherapy (Wet, Dry), Social services, Chapel	Main entrance, Lobby, Hall, ELV
Base-ment	-	Kitchen, Laundry, Work shops, Morgue	-	Cleaning facilities, Transportation services, Stores

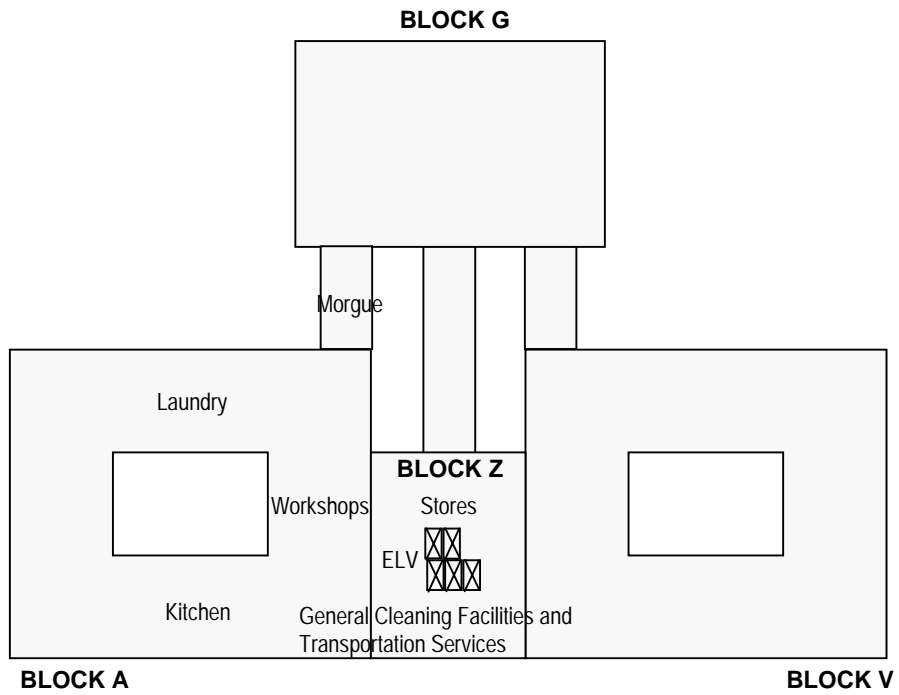
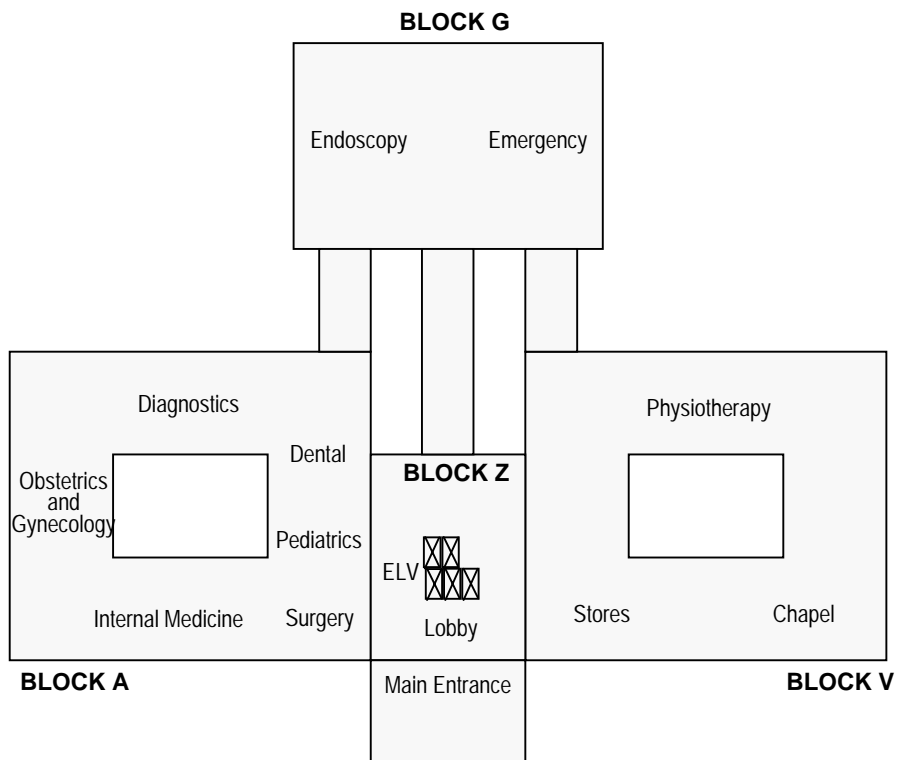
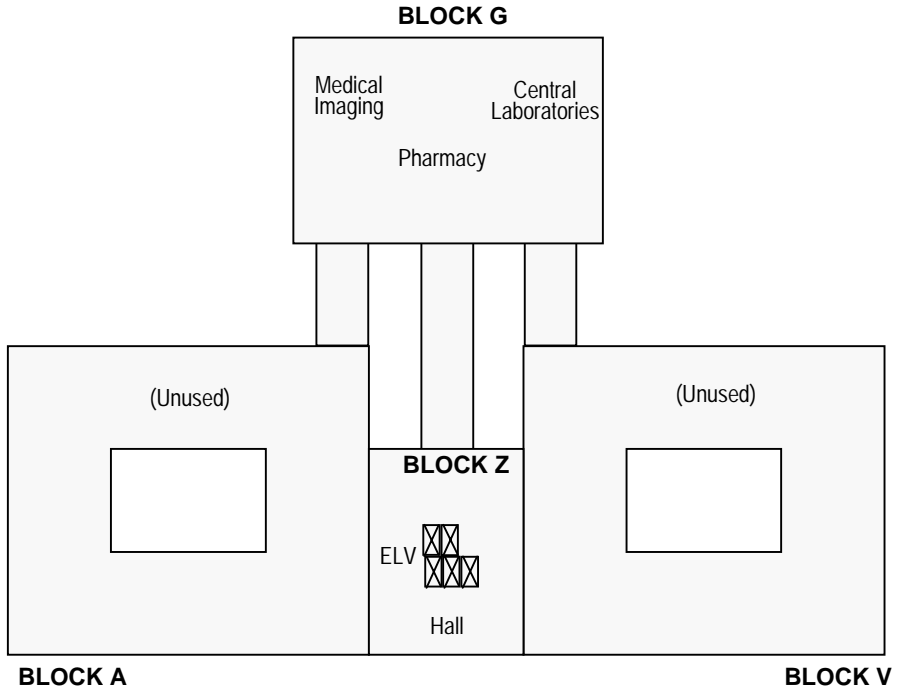


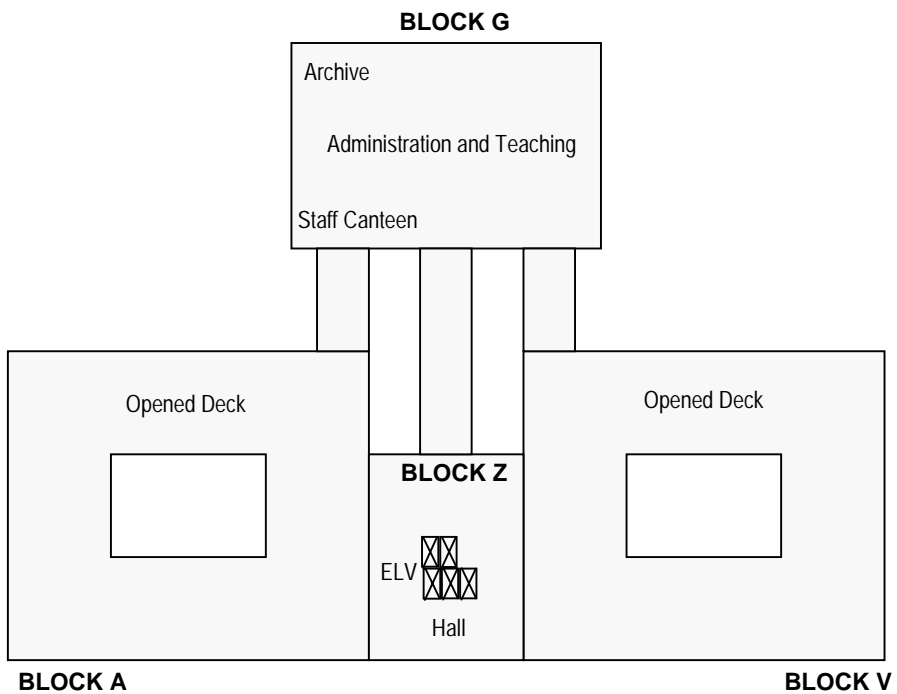
Fig.2-1 Grand Floor plan of Gudushauri General Hospital (1/7)



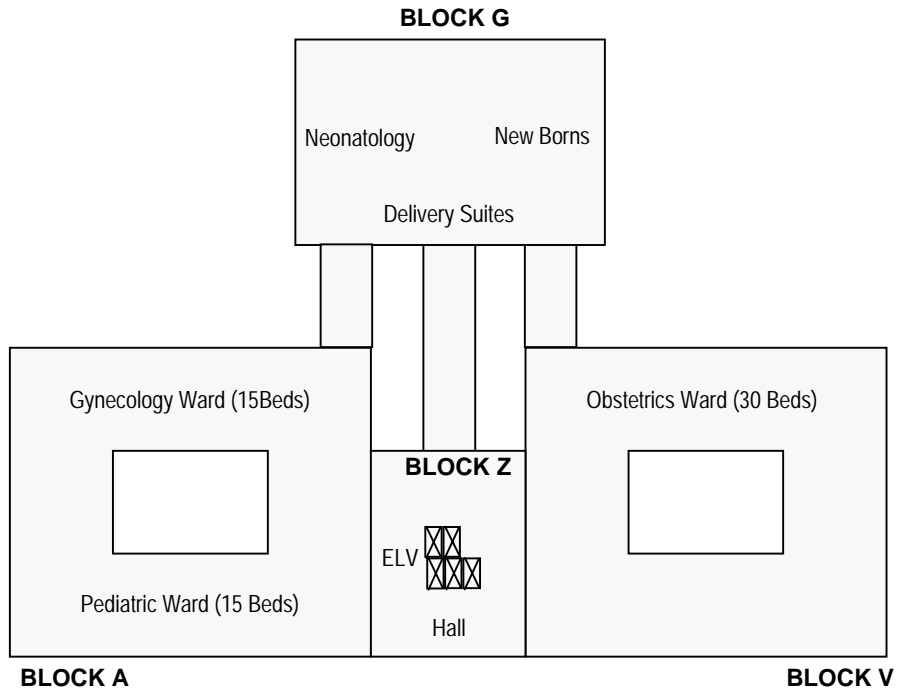
1st Floor plan of Gudushauri General Hospital (2/7)



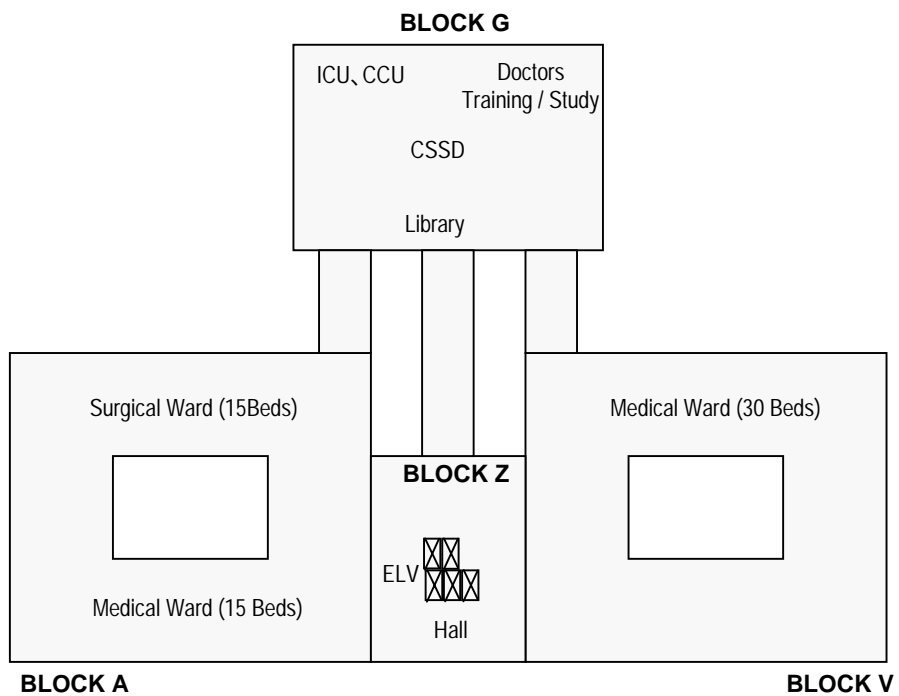
2nd Floor plan of Gudushauri General Hospital (3/7)



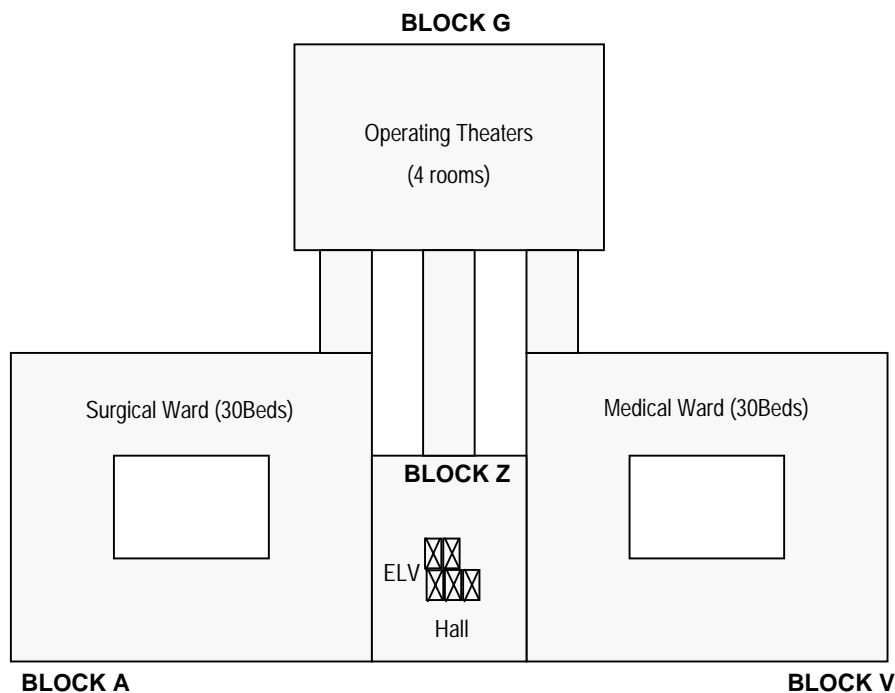
3rd Floor plan of Gudushauri General Hospital (4/7)



4th Floor plan of Gudushauri General Hospital (5/7)



5th Floor plan of Gudushauri General Hospital (6/7)



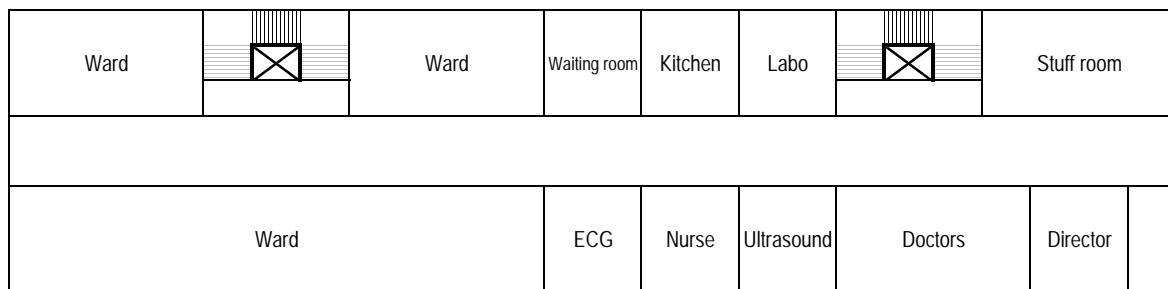
6th Floor plan of Gudushauri General Hospital (7/7)

(2) Centre of Urgent Cardiology

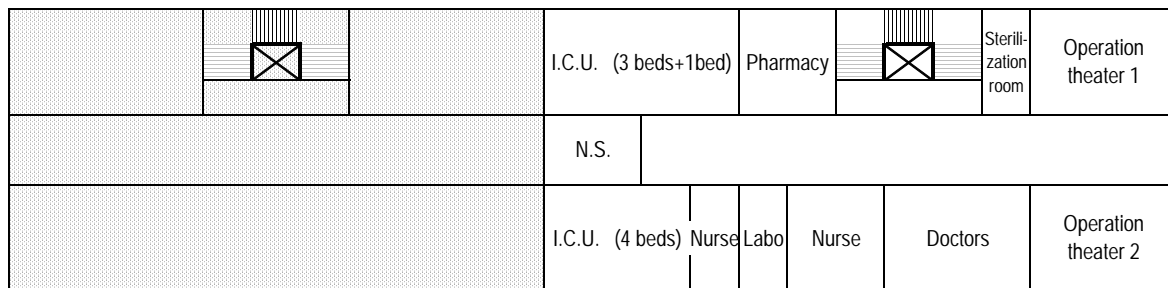
The Centre of Urgent Cardiology’s department plan (Table 2-3) and the floor plan (Figure 2-2) are shown below.

Table 2-3 Department plan of the Centre of Urgent Cardiology

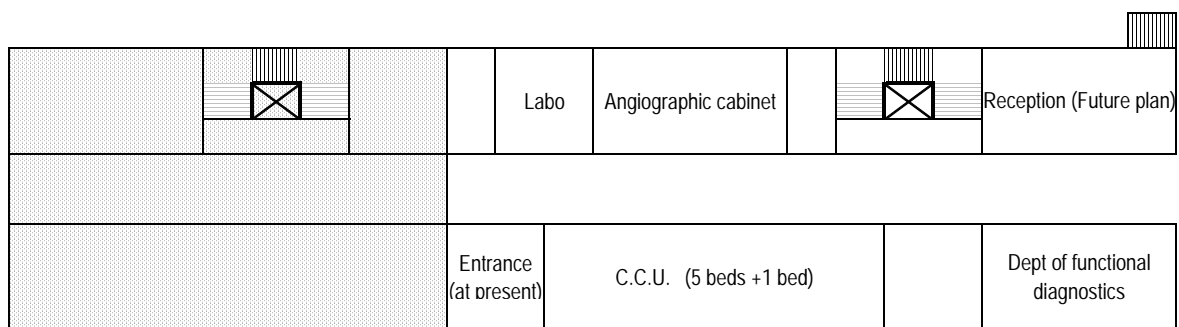
Floor	Departments
5 th -8 th	Scientific-Research Institute of Therapy
4 th	Administration, Dept of US diagnostics, Cardiology Dept, Laboratory, Kitchen, Wards (40 beds)
3 rd	Scientific-Research Institute of Therapy
2 nd	2 Operation theaters, Sterilization Dept, ICU (7 beds & Isolated room 1 bed), Laboratory, Pharmacy, Doctors room, Nurse room
1 st	Cardio-vascular catheterization laboratory, CCU (5 beds + 1 bed), Dept of functional diagnostic, Laboratory



4th floor plan

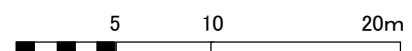


2nd floor plan



1st floor plan

Fig.2-2 Floor plan of the Centre of Urgent Cardiology



Chapter 3
Implementation Plan

Chapter 3 Implementation Plan

3-1 Implementation Plan

3-1-1 Implementation Concept

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

- 1) After the Notes are exchanged, the entire scope of the project from design to installation should be completed smoothly and promptly. Therefore, plans involving work and personnel plan should be formulated so that each stage of the project can be executed efficiently and effectively.
- 2) To ensure smooth execution of the project, meeting and discussion about plan's details should be held between representatives from the relevant organizations of the Georgian government (e.g. the Ministry of Labour, Health and Social Affairs and Ministry of Foreign Affairs), staff of the both hospitals, consultant and supplier of the equipment.

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

(1) Party responsible for the implementation of the project

The responsible party of the Georgian Government is the Ministry of Labour, Health and Social Affairs. The Ministry of Labour, Health and Social Affairs will act as the contracting party of the Georgian Government. The Ministry of Labour, Health and Social Affairs is required to cooperate in regard to the appointment of the responsible persons concerned for the both hospitals and work necessary for unpacking, delivery, and assembly/trial run of the equipment. The Ministry of Foreign Affairs and the Minister of Labour, Health and Social Affairs shall be responsible for customs clearance, internal transportation, and so forth.

(2) Consultant

Following the signing of the E/N between two governments concerned, the Ministry of Labour, Health and Social Affairs shall sign a consultant agreement with a Japanese consulting firm for the detailed design of the equipment to be procured. The work will also be associated with supervision of project implementation and equipment procurement. The agreement will be verified by the Japanese Government. The consultant shall be responsible for implementation of the following work under the agreement:

1) Detailed design phase

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

2) Implementation phase

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

(3) Suppliers of the equipment

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

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

3-1-2 Implementation Conditions

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

3-1-3 Scope of Work

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

1) Work to be carried out by the Georgian side

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

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

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

3-1-4 Consultant Supervision

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

(1) Framework of implementation supervision

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

(2) Personnel plan

The consultants required for the supervision of detailed design and implementation shall

be as follows:

1) Project manager One (1)

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

2) Equipment planner One (1)

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

3) Procurement supervisor One (1)

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

3-1-5 Procurement Plan

(1) Procurement of the equipment

Following the official delivery of the equipment, the each hospital shall promptly receive technical service, spare parts, and consumables at a reasonable price. However the number of Japanese, EU and USA manufacturers with distributors and agents in Georgia is limited. As a result, equipment should be procured from Japanese, USA or EU companies that have distributors or agents in Georgia or neighboring countries (Armenia, Azerbaidjan, Turkey etc.).

(2) Inland transportation

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

(3) Plan of the dispatch of engineer

Personnel, including laborers required for the installation of equipment, shall be secured in the vicinity of the both hospitals. However, as for the installation of the equipment requiring special skills and techniques, engineers will be dispatched from Japan and other countries in principle. The procedure for test runs and adjustment of the equipment will be planned to allow enough time for technical transfer to the doctors and engineers concerned at the hospitals. Therefore, it is necessary to have prior discussions about times of technical transfer etc. with Ministry of Labour, Health and Social Affairs and hospitals.

3-1-6 Implementation Schedule

When the project starts, the consulting firm will investigate the specifications of the equipment. Then, the supplier of the equipment, who will be appointed through open tender, will procure the equipment. The project implementation schedule is given in Table 3-1.

Table 3-1 Project Implementation Schedule

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

3-1-7 Obligations of the Recipient Country

The Recipient Country shall work the following in accordance with the Exchange of Notes (E/N), for the smooth implementation of the project.

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

- 5) To ensure that the equipment procured under this project is maintained and used properly and effectively.
- 6) To confirm that Georgian side bears all the expenses other than those covered by the Japanese government.

3-2 Project Cost Estimation

The Gudushauri General Hospital buildings are to undergo comprehensive renovation with a loan from the World Bank. This will include necessary work to the power and water supply facilities to enable operation of equipment.

The Centre of Urgent Cardiology's set up area for equipment supplies is upgraded, meanwhile the basics such as power and water supply are generally in order.

Where there is a need for removal of existing equipment, this work is to be carried out by the Georgian side.

3-3 Operational Management and Maintenance Costs

Post-renovation, the Gudushauri General Hospital intends to employ highly skilled people who are well versed in the latest medical equipment in Europe and the US. To take care of facility management, a person trained in Sweden under the special program of Swedish International Development Agency (SIDA) with an understanding on an international level of hospital management is to be employed. Furthermore, at the Centre of Urgent Cardiology, a large proportion of the doctors and other medical staff have received technical training in highly developed countries on top of many years of experience gained domestically. Thus, a high level of technical ability is available at both hospitals for proper management of the equipment supplied through this project.

Some new operational and administrative costs will arise from the equipment introduced through this project. Tables 3-2 – 3-4 outline the details and the expenses involved for each piece of equipment.

Table3-2 Inspection and Repair

Equipment	Item	Approximate estimate
CT	Periodical inspection and repair	US\$2,000 per year

Table 3-3 Spare Parts / Consumable Goods (Gudushauri General Hospital)

Equipment	Item	Approximate estimate
CT	X-ray tube	US\$22,500
CT	Film, etc.	US\$10,000
Basic X-ray unit	Film, etc.	US\$2,664
US scanner	Printer paper, gel	US\$1,776
Monitoring system	Electrode, gel, recording paper	US\$4,049
Blood gas analyzer	Reagents, etc.	US\$2,397
Annual average cost		US\$43,386

Table 3-4 Spare Parts / Consumable Goods (Centre of Urgent Cardiology)

Equipment	Item	Approximate estimate
Mobile X-ray unit	Film, etc.	US\$888
US scanner	Printer paper, gel	US\$1,332
ECG	Electrode, gel, recording paper	US\$266
Monitoring system	Electrode, gel, recording paper	US\$4,049
Blood gas analyzer	Reagents, etc.	US\$1,199
Annual average cost		US\$7,734

Chapter 4

Project Evaluation and Recommendation

Chapter 4 Project Evaluation and Recommendation

4-1 Project Effect

(1) The Contribution to Improving Health Care Standards in Georgia

If, under this plan, the minimum of required medical equipment necessary for a national referral hospital is supplied, then it is expected that the performance of both hospitals will markedly improve, so that they can return to their previous roles as national referral hospitals, and provide adequate medical care to the people of Georgia. The number of people who will benefit from this project are 1.3 million (pop. of west part of Georgia) in the case of the Gudushauri General Hospital and 4.67 million (pop. of whole country) in the case of the Centre of Urgent Cardiology.

(2) Improving the Efficiency of the Gudushauri General Hospital

The Gudushauri General Hospital will resume operations in April 2002. Therefore, in order to measure the direct effects of this plan, we compared the two scenarios of a) this plan being implemented and b) not being implemented. Below are shown the direct effects that this project will bring about relating to the improvement in the functioning of the hospital.

	Without implementation of this plan (2003)	With implementation of this plan (2003)
Patients per annum	8,000	10,000
In-patients	2,500	3,500
Out-patients	5,500	6,500
Number of patients referred from other hospitals	300	1,000
Bed working ratio at ICU (incl. infants)	0%	70%
Number of diagnosis by CT	0	1,750
Number of diagnosis by mammography	0	250
Number of diagnosis by endoscopy	0	4,000

(3) Improving the Efficiency of the Centre of Urgent Cardiology

This project aims to install the bare minimum of medical equipment necessary for improving the efficiency of the hospital, making it a priority to install equipment for the operating theatres and renew the existing equipment essential for secondary level treatment.

Results from 1999 before the project was put into action, and the projected results for

2003 after the project is completed were compared in order to measure the direct effects of the project. The direct effects relating to the improvement of the hospital that the project will bring about are shown below.

	Pre-project (1999 results)	Post-project (2003 projected results)
Patients per annum	1,343	1,950
In-patients	662	1,000
Out-patients	681	950
Number of patients referred from other hospitals	98	195
CCU working ratio	50%	85%
ICU working ratio	0%	60%
Number of surgeries for cardio-vascular diseases	0	365
Number of open heart surgery	0	37
Increase of diagnosis by Color Doppler	0	500

(4) Reductions in the Necessary Initial Investment during the Health Sector's Transitional Period

The Gudushauri General Hospital, one of the hospitals we are targeting, is a strategically important national referral hospital and thus not down for privatization. As part of a large-scale restructuring of medical facilities in Tbilisi it is being merged with three other hospitals, and renovation work resulting from this merger is now being carried out. The cost is being covered by loan from the World Bank but it does not include installation of sufficient medical equipment. On the other hand the state-owned hospital, the Centre of Urgent Cardiology has difficulties in providing an adequate level of equipment on its own.

If, under this project, the overhaul of medical equipment for the Gudushauri General Hospital and the Centre of Urgent Cardiology goes ahead, it will be possible to reduce the initial investment sum required for equipping the hospitals with medical apparatus, and both hospitals will soon be able to resume their roles as national referral hospitals.

(5) Acceleration of the priority plan "Restructure Plan"

By carrying out this project, both national referral hospitals, the Gudushauri General Hospital and the Centre of Urgent Cardiology, will be fitted out with medical equipment, and thus the "soft" improvements of the Restructure Plan and the "hard" improvements of this project can be carried out simultaneously, creating a synergetic effect, and remarkable improvements in the quality of medical care can be expected. If, hypothetically, this plan

was not put into action, the resulting decline in the functional capacity of both hospitals would give rise to a situation where demand for treatment could not be met, and this would have large-scale negative repercussions for the promotion of the Restructure Plan for Georgia's health care system.

(6) Equipping the National Referral Hospitals

Through the Restructure Plan, the World Bank is attempting to overhaul four national referral hospitals (see table 4-1). Already Japan's Grant Aid is being provided for the M. Iashvili Children's Central Clinical Hospital and the Medical University Central Hospital, and if it also will provide for the Gudushauri General Hospitals under this plan, then it will mean that three out of the four national referral hospitals will have received Grant Aid (improvement of medical equipment). Above all, the equipping of the national referral hospitals by the government will bring about a change in the consciousness of the hospital staff and workers, and this will be a great help with regard to promoting an overhaul of the Georgian referral system.

Table 4-1 National Referral Hospitals of Georgia

Name of Hospital	Number of Beds
(1) M.Iashvili Children's Central Hospital	552
(2) Medical University Central Hospital	472
(3) Gudushauri General Hospital	180
(4) City clinic No.1	400

4-2 Recommendation

(1) Overhauling the Referral System

Just equipping the national referral hospitals around the capital region is still not enough for the Georgian referral system to fulfill its original role.

At the present time, international organizations (The World Bank, WHO) are emphasizing the importance of the provision of primary level medical facilities, and local government bodies are stressing the importance of providing secondary level medical facilities in regional capitals. In order for the referral system to speedily recover, it would be effective if the primary and secondary level medical facilities were equipped at the same time.

(2) Symbiosis of Public and Private Hospitals

As a result of Georgia's health care sector being opened to private capital, it is expected that private hospitals will start to increase. It is particularly thought that specialized hospitals with advanced medical equipment will increase, to target those people with high-level incomes who can easily afford the medical fees. The increase in the number of private hospitals will mean greater choice of hospitals for the Georgian people on the plus-side, however, it will bring about a loss of equality among those receiving treatment as those who can benefit will be determined by income. To achieve what the Georgian Ministry of Labour, Health, and Social Affairs calls "cutting the state burden and leaving the development of the health sector to the Market", it is necessary to realize a symbiotic relationship between the public and private hospitals. To do this, it is necessary, having once again re-established the role of public hospitals, to establish a health care system that allows for the segregation of public and private hospitals.

(3) Implementation of Hospital Administration and Management

As the privatization of the health and medical sector proceeds, management of public hospitals must, similar to private hospitals, be self-supporting through their own efforts. In order to achieve sound hospital management, under the guidance of Ministry of Labour, Health and Social Affairs of Georgia, hospital staff must work to improve the efficiency of hospital management and medical services. They must rebuild their administrative system to suit the new era, and implement self-sufficient management by their own.

Appendices

Appendices-1 Member List of the Study Team

(1) Field Survey

1	Mr. Kazumi JIGAMI	Team Leader	Director, Second Project Management Division, Grant Aid Management Department, JICA
2	Dr. Hiroyoshi ENDO, MD	Technical Adviser	Director, International Cooperation, Ministry of Health and Welfare
3	Mr. Yoshiharu HIGUCHI	Project Manager	CRC Overseas Cooperation Inc.
4	Dr. Hiroshi NAITO	Equipment Planner	CRC Overseas Cooperation Inc.
5	Mr. Hideaki KANAYAMA	Facilities and Utilities Planner	CRC Overseas Cooperation Inc.
6	Mr. Takayuki KURITA	Cost and Procurement Planner	CRC Overseas Cooperation Inc.
7	Dr. Tomoyuki KURODA	Baseline Surveyor	CRC Overseas Cooperation Inc.
8	Ms. Yoko NOZAWA	Interpreter	CRC Overseas Cooperation Inc.

(2) Explanation of Draft Report

1	Dr. Hiroyoshi ENDO, MD	Team Leader	Director, International Cooperation, Ministry of Health, Labour and Welfare
2	Ms. Chiharu MORITA	Coordinator	Staff, Second Project Management Division, Grant Aid Management Department, JICA
3	Mr. Yoshiharu HIGUCHI	Project Manager	CRC Overseas Cooperation Inc.
4	Dr. Hiroshi NAITO	Equipment Planner	CRC Overseas Cooperation Inc.
5	Mr. Takayuki KURITA	Cost and Procurement Planner	CRC Overseas Cooperation Inc.
6	Ms. Yoko NOZAWA	Interpreter	CRC Overseas Cooperation Inc.

Appendix-2 Study Schedule

(1) Field Survey

Date	Movement	Accommodation	Activities
Nov.12 (Sun.)	Narita – London ^(A)	London	Move to London ^(A)
Nov.13 (Mon.)	London – Tbilisi ^(A)	Tbilisi	Arrival in Georgia
Nov.14 (Tue.)		- do -	Courtesy call on the MOH
Nov.15 (Wed.)	Narita – Zurich- ^{(B)(C)}	- do -	Move to Georgia ^{(B)(C)} Site Survey ^(A)
Nov.16 (Thu.)	- Tbilisi ^{(B)(C)}	- do -	Site Survey
Nov.17- (Fri.)		- do -	- do -
Nov.20 (Mon.)			
Nov.21 (Tue.)	Narita – London ^(L)	London / Tbilisi	Move to London ^(L) Site Survey ^{(A)(B)(C)}
Nov.22 (Wed.)	London – Baku ^(L) Tbilisi – Baku ^(A)	Baku / Tbilisi	Move to Azerbaijan ^{(L)(A)} Site Survey ^{(B)(C)}
Nov.23 (Thu.)		Baku / Tbilisi	Visit the Embassy of Japan in Baku ^{(L)(A)} Site Survey ^{(B)(C)}
Nov.24 (Fri.)	Baku – Istanbul- ^{(L)(A)}	Tbilisi	Move to Georgia ^{(L)(A)} Site Survey ^{(B)(C)}
Nov.25 (Sat.)	- Tbilisi ^{(L)(A)} Narita – Zurich- ^(*)	- do -	Arrival in Georgia ^{(L)(A)} Move to Georgia ^(*) Site Survey ^{(B)(C)}
Nov.26 (Sun.)	- Tbilisi ^(*)	- do -	Meeting within the Study Team
Nov.27 (Mon.)		- do -	Courtesy call on the MOH ^{(L)(*)} Site Survey ^{(A)(B)(C)}
Nov.28 (Tue.)		- do -	Courtesy call on the MOFA Discussion of M/D
Nov.29 (Wed.)		- do -	Signing of M/D
Nov.30 (Thu.)	Tbilisi – London ^{(A)(*)}	London / Tbilisi	Move to London ^{(L)(*)} Site Survey ^{(A)(B)(C)}
Dec. 1 (Fri.)	London – ^{(L)(*)}	- do -	Move to Japan ^{(L)(*)} Site Survey ^{(A)(B)(C)}
Dec. 2 (Sat.)	- Narita ^{(L)(*)}	- do -	Arrival in Japan ^{(L)(*)} Site Survey ^{(A)(B)(C)}
Dec. 3 (Sun.)		- do -	Meeting within the Study Team
Dec. 4- (Mon.)		- do -	Site Survey
Dec. 6 (Wed.)			
Dec. 7 (Thu.)	Tbilisi – London ^(C)	London / Tbilisi	Move to London ^(C) Site Survey ^{(A)(B)}
Dec. 8 (Fri.)	London – ^(C)	Tbilisi	Move to Japan ^(C) Site Survey ^{(A)(B)}
Dec. 9 (Sat.)	- Narita ^(C)	- do -	Arrival in Japan ^(C) Site Survey ^{(A)(B)}
Dec. 10 (Sun.)		- do -	Meeting within the Study Team
Dec. 11 (Mon.)	Tbilisi – Baku ^(A)	Baku / Tbilisi	Report on the field survey in MOH Move to Azerbaijan ^(A)
Dec. 12 (Tue.)	Tbilisi – London- ^(B)	Baku	Report on the field survey in Baku ^(A) Move to Japan ^(B)
Dec. 13 (Wed.)	Baku – Zurich- ^(A) - Narita ^(B)		Move to Japan ^(A) Arrival in Japan ^(B)
Dec. 14 (Thu.)	- Narita ^(A)		Arrival in Japan ^(A)

^(L) Official Team (Leader), ^(*) Official Team (Technical Adviser), ^(A) Consultant (Project Manager),
^(B) Consultant (Equipment Planner, Interpreter), ^(C) Consultant (Facility Planner, Cost Planner,
Baseline surveyor)

MOH : Ministry of Labour, Health and Social Affairs MOFA : Ministry of Foreign Affairs
M/D : Minutes of Discussion

(2) Explanation of Draft Report

Date	Movement	Accommodation	Activities
Mar.7 (Wed.)	Narita – Zurich- ^(A)		Move to Georgia ^(A)
Mar.8 (Thu.)	- Tbilisi ^(A)	Tbilisi	Arrival in Georgia Courtesy call on the MOH
Mar.9 (Fri.)		- do -	Site Survey
Mar.10 (Sat.)	Narita – Zurich- ^(*)	- do -	Move to Georgia ^(*) Site Survey ^(A)
Mar.11 (Sun.)	- Tbilisi ^(*)	Tbilisi / Moscow	Arrival in Georgia ^(*) Move to Moscow ^(B) Meeting within Study Team ^{(*) (A)}
Mar.12 (Mon.)		Tbilisi	Arrival in Georgia ^(B) Courtesy call on the MOH, MOFA ^(*) Site Survey ^{(A) (B)}
Mar.13 (Tue.)		- do -	Site Survey
Mar.14 (Wed.)	Narita – Zurich- ^(L)	- do -	Move to Georgia ^(L) Site Survey ^{(*) (A) (B)}
Mar.15 (Thu.)	- Tbilisi ^(L)	- do -	Discussion of M/D
Mar.16 (Fri.)			Signing of M/D
Mar.17 (Sat.)	Tbilisi – London- ^(L) Tbilisi – Istanbul- ^(*)	- do -	Move to Japan ^(L) Move to Azerbaijan ^(*) Site Survey ^{(A) (B)}
Mar.18 (Sun.)	- Narita ^(L) - Baku ^(*)	Baku / Tbilisi	Arrival in Japan ^(L) Arrival in Azerbaijan ^(*) Meeting within Study Team ^{(A) (B)}
Mar.19 (Mon.)		Baku / Tbilisi	Report on the field survey in Baku ^(*) Site Survey ^{(A) (B)}
Mar.20 (Tue.)	Baku - ^(*)	Tbilisi	Move to Japan ^(*) Site Survey ^{(A) (B)}
Mar.21 (Wed.)	- Narita ^(*)	- do -	Arrival in Japan ^(*) Site Survey ^{(A) (B)}
Mar.22- (Thu.)		- do -	Site Survey
Mar.27 (Tue.)			
Mar.28 (Wed.)		- do -	Report on the field survey in MOH
Mar.29 (Thu.)	Tbilisi – Zurich- ^{(A) (B)}	- do -	Move to Japan
Mar.30 (Mon.)	- Narita ^{(A) (B)}		Arrival in Japan

^(L) Official Team (Leader)

^(*) Official Team (Coordinator)

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

^(B) Consultant (Cost Planner)

MOH : Ministry of Labour, Health and Social Affairs

MOFA : Ministry of Foreign Affairs

M/D : Minutes of Discussion

Appendix-3 List of Party Concerned in the Recipient Country

Position & Specification	Name
Embassy of Japan, Azerbaijan	
Ambassador	Mr. Tetsuya Hirose
Counselor	Mr. Akira Motoyama
2 nd Secretary	Mr. Toshikazu Muto
JICA Expert (Health Sector)	
Adviser, Ministry of Labour, Health and Social Affairs of Georgia	Dr. Makoto Ishino
Ministry of Labour, Health and Social Affairs	
Minister	Dr. Avtandil Jorbenadze
First Deputy Minister	Dr. Amiran Gamkrelidze
Deputy Minister	Dr. Marina Gudushauri
Chairman of Dept of Technics and Technologies	Dr. Levan T.Lazarashvili
Vice-chairman of Dept of Technics and technologies	Dr. George T. Baliashvili
Head of Technology Division, Department of Technics and Technology	Dr. Kartlos Kankadze
Head of Department of Foreign Relations	Dr. Alexander Tevdoradze
Head of Department of Public Health	Dr. Ramaz Urushadze
Representative of Ministry of Labour, Health and Social Affairs in the ICRC orthopedic program	Dr. Sergo Madradze
Ministry of Foreign Affairs	
Director of Department of Foreign Aid Coordination	Dr. David Jalagania
Deputy Director of Department of Foreign Aid Coordination	Dr. Kakha Kalmakhelidze
Director of Department of Asia, Africa, Australia and the Pacific Regions	Mr. Grigori Tabatadze
Deputy Head of Division of Asia, Africa, Australia and the Pacific Regions	Mr. Merab Cbachua
3rd Secretary of Department of Asia, Africa, Australia and the Pacific Regions	Mr. David Nozadze
The World Bank, Health Project Coordination Unit	
Director	Mr. George Nickolaishvili
Assistant Procurement Officer	Ms. Lela Shanidze
Planning and Monitoring Officer	Mr. David Khubua
Prof O. Gudushauri General Hospital	
Director	Dr. Irakli Kalandarishviri
Member of Directors, Head of Arthrogy Department	Mr. Michael Zimlitski

Position & Specification	Name
Financial Director	Mr. David Bantsadze
MD, Orthopedic Surgeon	Dr. Levan Natchkebia
Chief of Maintenance Dept	Mr. Omari Gudushauri
Engineer	Mr. Zuriko Chumbupidze
Energy Engineer	Mr. Yasha Ramishviri
Urgent Cardiology Centre	
Director	Dr. Gulnara E. Chapidze
Deputy Director	Dr. Simon Karanadze
Deputy Director	Mr. Ioseb Abashidze
Chief of Cardic Surgery Department	Dr. Zviad Bakhutashvili
Head of Heart Catheterization Laboratory	Dr. Alexander Aladashvili
MD	Dr. Nina Unaishvili
MD	Dr. Lia Ridvava
MD	Dr. Davia Tetunasivili
M. Iashvili Children's Central Hospital	
General Director	Dr. Irakli Sasania
Institute of Reproductive Function of human being	
Director of Department of Mammorogy	Dr. Revaz Tsitsishvili
AGENT	
AMTS	
Executive Manager	Mr. George Nikolaishvili
IVERMEDI	
Director	Mr. David Megrelishvili
Tbilmedservice	
Director	Mr. Malkhaz Turdzeladze
TOSHIBA Medical Systems Georgia	
Representative	Dr. Revaz Jorbenadze
SIEMENS	
Sales and Service Representative for Medical Engineering	Dr. Ivan Gabashvili
Transportation	
ITS JAPAN LIMITED	
Regional Coordinator	Mr. Cesar Kadagishvili
CAUCASTRANSEXRESS Ltd.	
Director	Mr. Gia Danelia

Appendices-4 Minutes of Discussion

MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR IMPROVEMENT OF EQUIPMENT
IN PROF.O.GUDUSHAURI GENERAL HOSPITAL
IN GEORGIA

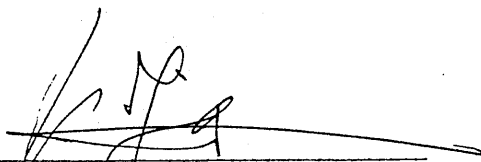
In response to a request from the Government of Georgia (hereinafter referred to as "the Georgia"), the Government of Japan decided to conduct a Basic Design Study on the Project for Improvement of Equipment in Prof.O.Gudushauri General Hospital (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Georgia the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr.Kazumi JIGAMI, Director, Second Project Management Div., Grant Aid Management Dept., Japan International Cooperation Agency (JICA), and is scheduled to stay in the country from November 13 to December 12, 2000.

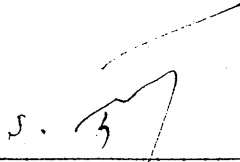
The Team held discussions with the officials concerned of the Government of Georgia and conducted a field survey at the study area.

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

Tbilisi, November 29, 2000



Mr. Kazumi JIGAMI
Leader, Basic Design Study Team
JICA



Mr. Avtandil Jorbenadze, M.D.
Minister,
Ministry of Labour, Health and
Social Affairs of GEORGIA

ATTACHMENT

1. Objective of the Project

The objective of the Project is to improve and strengthen the integrated health care services of Georgia including maternal and child health care, through the procurement of medical equipment to Prof.O.Gudushauri General Hospital.

2. Project sites

The site of the Project is Prof.O.Gudushauri General Hospital.

3. Responsible and Implementing Agency

3-1. The Responsible Agency is the Ministry of Labour, Health and Social Affairs.

3-2. The Implementing Agencies are Department of Technics and Technologies of the Ministry of Labour, Health and Social Affairs, and Prof.O.Gudushauri General Hospital.

4. Items requested by the Government of Georgia

After discussions with the Team, the items described in ANNEX-1 were finally requested by the Georgian side. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

5. Japan's Grant Aid Scheme

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

5-2. The Georgian side will take necessary measures, as described in ANNEX-3, for smooth implementation of the Project, as a condition for the Japan's Grant Aid to be implemented.

6. Schedule of the Study

6-1. The consultants will proceed to further studies in Georgia until December 12, 2000.

6-2. JICA will prepare the draft report in English (and the summary report in Russian) and dispatch a mission in order to explain its contents around February 2001.

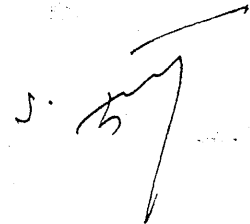
6-3. In case that the content of the report is accepted in principle by the Georgia, JICA will complete the final report and send it to the Georgia around July, 2001.

7. Other relevant issues

7-1. The Georgian side will complete civil works of Prof.O.Gudushauri General Hospital for installation of the medical equipment by March 2002.

7-2. The Georgian side has agreed to secure and allocate the enough budgets to operate and maintain the medical equipment provided by the Grant Aid properly and effectively.

7-3. During the Basic Design Study the Georgian side provided additional argumentation and statistic data for including the Centre of Urgent Cardiology in the Project for Improvement of Equipment in Prof.O.Gudushauri General Hospital in Georgia. After the discussion with the team the Georgian side strongly requests the procurement of medical equipment for the Centre of Urgent Cardiology described in ANNEX-4.

A handwritten signature in black ink, consisting of a stylized 'J' followed by a series of loops and a long vertical stroke.

EQUIPMENT LIST BY PRIORITIES

Prof. O. Gudushauri General Hospital

No.	Name of Medical Equipment	RQ Q-ty	Priority		
			A	B	C
1	Abdominal hysterectomy instrument set	10	1		9
2	Abrams pleural biopsy set	8	4		4
3	Agregometer	1			1
4	Anesthetic unit	5	4		1
5	Apoenea monitor	2			2
6	Automatic cell counter	1			1
7	Automatic coloration unit	1			1
8	Autopsy table	1			1
9	Balance	1			1
10	Balance, analysis	1			1
11	Balance, precision, high resolution	1			1
12	Balance, test tubes	2			2
13	Bath tubs for hydrotherapy	2	2		
14	Bath water	2			2
15	Bath water, transparent	1			1
16	Bath water, universal	1			1
17	Bench, physiotherapy	3			3
18	Bilirubinometer	1	1		
19	Blood bags' seal machine	1	1		
20	Blood cell counter	1			1
21	Blood gas analyzer	1	1		
22	Blood pressure monitor tester	1			1
23	Blood pressure monitor, non invasive	1			1
24	Blood refrigerator	2	1		1
25	Blood units balance	1	1		
26	Caesarian set	10	2		8
27	Camera, multiformat	1			1
28	Cardiac arrest emergency chart	1			1
29	Carpenter bench	1			1
30	Centrifuge for blood bags	1	1		
31	Centrifuge, cito	1			1
32	Centrifuge, general	1			1
33	Centrifuge, microhematocryt	1			1
34	Centrifuge, serologic	1			1
35	Centrifuge, universal	3			3
36	Coagulator analyzer, semi-automatic	1			1
37	Cold light source unit	4	3		1
38	Cold light source unit	2			2
39	Colonofibroscope	3	2		1
40	Colposcope	3			3
41	Compressed air generator	1			1
42	Corpses refrigerator, 3 drawers	1	1		
43	CT-Scanner, spiral	1		1	
44	Dark room light, inactinic filter	1			1
45	Day-light processing machine	1	1		
46	Defibrillator, neonatal pads	1			1
47	Defibrillator / monitor	5			5
48	Differential counter	1			1
49	Digital colony counter	1			1
50	Drill	1			1
51	ECG 1 channel	1			1
52	ECG tester	1			1
53	ECG/Heart rate monitor	1			1
54	Echo-film viewer	1			1
55	Electrical safety tester	1			1
56	Electrocardiograph, 3 channel	1			1
57	Electrocardiograph, 6 channel	1			1

No.	Name of Medical Equipment	RQ Q-ty	Priority		
			A	B	C
58	Electrocoagulator	5			5
59	Electrophoresis unit	1			1
60	Electrosurgical unit	8	4		4
61	Exposimeter, automatic	2	1		1
62	Express laboratory equipment	4		2	2
63	Fango, paraffin preparation unit	2			2
64	Fibrobroncoscope	1	2		
65	Fibrocistoscope	1	1		
66	Fibrocolonoscope	1			1
67	Fibroduodenscope	1	1		
68	Fibrogastroscope	1	2		
69	Rectoscope	1	1		
70	Fluoroscopic/radiologic unit	1			1
71	Fraccioning press machine	1			1
72	Freezer	3	2		1
73	Freezer, blood plasma	1	1		
74	Gall bladder surgical instrument set	8	2		6
75	Glassware for clinical chemistry	1			1
76	Glassware for hematology	1			1
77	Glassware for histology	1			1
78	Glassware for microbiology	1			1
79	Gymnastic mattresses	2			2
80	Gynecology basic set	10	4		6
81	Hammer, reflex	3			3
82	Hemoglobinometer Sahli	1			1
83	High frequency tester	1			1
84	Holter equipment	1			1
85	I.V. cut down set	12	2		10
86	Image intensifying TV system	1			1
87	Incubator, laboratory	1			1
88	Infant incubator, intensive care	5	3		2
89	Infant incubator, normal	5			5
90	Infant warmer	4	4		
91	Infusion pump, syringe	16	10		6
92	Infusion pump, volumetric	17	6		11
93	Instrument set for consulting room	7			7
94	Instrument set for delivery	8	2		6
95	Instrument set intubation	9	8		1
96	Instrument set for intubation of the trachea	2	2		
97	Instrument set for Obs. & Gyn. exam/treat.	8			8
98	Instrument set for Obs. & Gyn. consulting	7	3		4
99	Instrument set for Obs. & Gyne. treatment	2			2
100	Instrument set for Obs. & Gyn.	6			6
101	Instrument set for treatment room	5		2	3
102	Instrument set for ward	16		6	10
103	Intestinal surgical instruments set	10	1		9
104	Lamp, examination, mobile	17		10	7
105	Lamp, surgical, batteries, mobile	6	2		4
106	Lamp, surgical, ceiling	6	5		1
107	Laryngoscope, 3 curved blades	2	2		
108	Laryngoscope, 3 curved blades, infant	1	1		
109	Laryngoscope, adult/pediatric	5	2		3
110	Laryngoscope, straight blade, infant	1	1		
111	Magnetic stirrer	1			1
112	Mechanical bench	1			1
113	Microscope, binocular	7			7
114	Microscope, fluorescency	1			1
115	Microtome, rotary	1			1
116	Microwave therapy equipment	1	1		

No.	Name of Medical Equipment	RQ Q-ty	Priority		
			A	B	C
117	Mixer, processing fluids	1			1
118	Monitor pO2	2			2
119	Monitor's equipped shelves	6			6
120	Monitor, ECG/HR/NIBP/Temp./Resp./SpO2	12	14		
121	Monitor	6			6
122	Monitor	6			6
123	Monitor	2			2
124	MRI	1			1
125	Multimeter tester	3			3
126	Nebulizer, ultrasonic	5	5		
127	Negatoscope, 2 parts	7			7
128	Negatoscope, 3 parts	6	1		5
129	Negatoscope, 4 parts	1			1
130	Operating table	1			1
131	Operating table (general and cesaria)	1	2		
132	Operating table (general/ortho.)	4	2		2
133	Oscilloscope	1			1
134	Otho-ophthalmoscope	17	5		12
135	Oxymeter, pulse	7			7
136	Pacemaker tester	1			1
137	Parallel bars	2			2
138	Patient identifier machine	2			2
139	Patient lifter, hydrotherapy	1	1		
140	Patient monitoring central w/printer	1	1		
141	PC computer & printer	18			18
142	pH meter	1	1		
143	Flame photometer	1			1
144	Plumber bench	1			1
145	Pocket lamp	6			6
146	Postmortem instrument set	2	2		
147	Power supply, universal	1			1
148	Printer	1			1
149	Prolapse tray instrument set	8			8
150	Radiologic unit, general examination	1	1		
151	Refrigerator	19	1		18
152	Refrigerator, laboratory	2	1		1
153	Resuscitator, infant	1			1
154	Resuscitator, manual, adult	8			8
155	Resuscitator, manual, adult/pediatric	14			14
156	Resuscitator, manual, infant	1			1
157	Resuscitator, manual, pediatric	1			1
158	Scale, adult, antropometric	16			16
159	Scale, pediatric, antropometric	4			4
160	Seal machine	1			1
161	Shortwave therapy equipment	1	1		
162	Skin biopsy set	8	4		4
163	Skin graft surgical instrument set	8	3		5
164	Soldering equipment	1			1
165	Spectrophotometer, UV-VIS	1			1
166	Sphygmomanometer, adult, table	2			2
167	Sphygmomanometer, adult/ped. mobile	7			7
168	Sphygmomanometer, mobile	1			1
169	Sphygmomanometer, table	3			3
170	Sphygmomanometer, table, ad/ped.	18			18
171	Sphygmomanometer, table, adult	7			7
172	Sphygmomanometer, wall mounted	7			7
173	Sphygmomanometer, adult, mobile	6			6
174	Sphygmomanometer, neonatal, mobile	5	3		2
175	Spirometer	1	1		

No.	Name of Medical Equipment	RQ Q-ty	Priority		
			A	B	C
176	Staining equipment	1			1
177	Sterilizer, dry	18	6		12
178	Sterilizer, dry, big	1			1
179	Sterilizer, steam, horizontal	2			2
180	Sterilizer, steam, vertical	1			1
181	Stethoscope, adult	75			75
182	Stethoscope, infant	9			9
183	Stethoscope, pediatric	50			50
184	Stethoscope, pinard	17			17
185	Stirrer, heating, magnetic	1			1
186	Stirrer, RPR	1			1
187	Stirrer, serologic	1			1
188	Suction pump, gynecological	4	4		
189	Suction pump, high pressure	7	6		1
190	Suction pump, low pressure	35	6		29
191	Suction pump, gynecologic	1	2		
192	Surgical instruments set, large	8	3		5
193	Surgical minor set	7	2		5
194	Suture set	12			12
195	Thyroidectomy surgical instrument set	8	1		7
196	Timer stopclock, 60 minutes	3			3
197	Tracheotomy set	16			16
198	Trolley, emergency	1			1
199	Tubal ligation set	10			10
200	Ultrasound therapy equipment	1	1		
201	Urine analyzer	1			1
202	US fetal detector	2	1		1
203	US film viewer	1			1
204	US power tester	1			1
205	US probe, abdominal	2	1		1
206	US probe, cardiology	1			1
207	US probe, obst/gynecological	1	1		
208	US probe, urology	1	1		
209	US scanner, mobile	1	1		
210	US scanner camera multiformat	1			1
211	US scanner printer	1	1		
212	US scanner, multipurpose	2			2
213	UV-IV therapy equipment	2	1		1
214	Vacuum generator	1			1
215	Vacuum pump	1			1
216	Vaginal repair & hysterectomy inst. set	10	2		8
217	Vaginal suture set	16	4		12
218	Vasectomy surgical instrument set	8	2		6
219	Veloergometer	1			1
220	Ventilator volumetric, adult	4	4		
221	Ventilator volumetric, neonatal	1	2		
222	Ventilator, adult, mobile	3			3
223	Ventilator, anesthetic	5			5
224	Washer, flexible endoscopes	4	2		2
225	Washer, flexible endoscopes	2			2
226	Water distiller & deionizing	1			1
227	Wave generator	1			1
228	Wastergren device	1			1
229	X-ray film cassettes (package)	2	1		1
230	X-ray film processor, manual	1			1
231	X-ray processor, small capacity	2	1		1
232	X-ray protecting apron	2	2		
233	X-ray protecting devices	2	2		
234	X-ray unit, mobile	2			2

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No.	Name of Medical Equipment	RQ Q-ty	Priority		
			A	B	C
ADD.1	Abdominal Tubal ligation set	1		1	
ADD.2	Bassinette mobile detach cnb w/mattress	50	10		40
ADD.3	Bath wax for foot	1		1	
ADD.4	Bath wax for hand	1		1	
ADD.5	Bed (ICU)	10	10		
ADD.6	Obstetric table with mattress	2	2		
ADD.7	Bed (ward) height adjust	12		12	
ADD.8	Cabinet biosafety	2		2	
ADD.9	Cabinet storage endoscope	2		2	
ADD.10	Chair wheel	6		4	2
ADD.11	Cholecystectomy extra	2		1	1
ADD.12	Couche exam GY	10		4	6
ADD.13	Defibrillator	14		2	12
ADD.14	Diagnostic set	16		7	9
ADD.15	Fume hood	2		2	
ADD.16	Hydrocollator unit	1		1	
ADD.17	Intraoral Xray	1		1	
ADD.18	Mammography unit	1		1	
ADD.19	Orthopedic small set	2		1	1
ADD.20	Orthopedic big set	2		1	1
ADD.21	Phototherapy unit	9		6	3
ADD.22	Table mayo instrument patt	14		4	10
ADD.23	Video monitor system for endoscopy	2	2		
ADD.24	Couch donor blood	1		1	
ADD.25	Fibrescope intubation (Adult & Ped.)	2		2	
ADD.26	Hemoglobin meter (digital)	1		1	
ADD.27	Mattress ripple altn anti bed sore	4		4	
ADD.28	Stimulator lung	1		1	
ADD.29	Suction pump for endoscopy	3		3	

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Japan's Grant Aid Scheme

1. Grant Aid Procedures

1) Japan's Grant Aid Program is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

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

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

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

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

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

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereafter referred to as "the Study"), conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

a) Confirmation of the background, objectives, and benefits of the requested Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.

- b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- d) Preparation of a basic design of the Project
- e) Estimation of the costs of the Project

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

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

2) Selection of Consultants

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

The consulting firm(s) used for the Study which is (are) recommended by JICA to the recipient country also work on the Project' s implementation after the Exchange of Notes, in order to maintain technical consistency.

3. Japan's Grant Aid Scheme

1) What is Grant Aid ?

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

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two

Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

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

4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

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

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

5) Necessity of "Verification"

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

6) Undertakings required of the Government of recipient country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as the following:

- a) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.
- b) To provide facilities of the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
- c) To secure buildings prior to the procurement in case the installation of the equipment.
- d) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the

Grant Aid.

e) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.

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

7) "Proper Use"

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

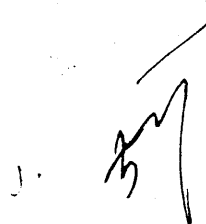
8) "Re-export"

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

9) Banking Arrangements (B/A)

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

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



Major Undertaking to be taken by Each Government

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

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Equipment List Requested by Centre of Urgent Cardiology

No.	Name of Medical Equipment	Q-ty
1	Air conditional system	1
2	Anesthetic unit	1
3	Anesthetist trolley	1
4	Automatic cell counter	1
5	Balance, analysis	3
6	Balance, precision, high resolution	1
7	Balance, test tubes	1
8	Bath water, universal	1
9	Bedside table	40
10	Bilirubinometer	1
11	Blood refrigerator	1
12	Blood gas analyzer	1
13	Blood pressure monitor, non invasive	1
14	Fibrobroncoscope	1
15	Cardiac arrest emergency chart	2
16	Cardiosurgical instruments set	2
17	Centrifuge, microhaematocrit	1
18	Centrifuge, universal	2
19	Clothes locker, double	20
20	Coagulator analyzer, semi-automatic	1
21	Cold light source unit	1
22	Defibrillator/monitor	5
23	Digital colony counter	1
24	ECG 1 channel	2
25	ECG/Heart rate monitor	1
26	Electrocardiograph, 3 channel	1
27	Electrocardiograph, 6 channel	1
28	Electrosurgical unit	1
29	Emergency trolley	1
30	Equipment for automatic hemocirculation	1
31	Freezer	1
32	Holter equipment	4
33	Hospital bed, adjustable	40
34	Infusion devices stand	4
35	Infusion pump, syringe	5
36	Infusion pump, volumetric	7
37	Instrument set for intubation	6
38	Instrument set for intubation of the trachea	2
39	Instrument set for ward	8
40	Instruments table	2
41	Intensive care bed	10
42	Intestinal surgical instruments set	2
43	Laboratory equipment for express analyses	1
44	Lamp, examination, mobile	10
45	Lamp, surgical, batteries, mobile	1
46	Lamp, surgical, ceiling	1
47	Laryngoscope, adult/pediatric	1
48	Linen trolley	1
49	Microscope, binocular	3
50	Monitor's equipped shelves	10
51	Monitor, blood pressure, non invasive	12
52	Monitor, ECG/HR/Respiration	2

No.	Name of Medical Equipment	Q-ty
53	Monitor, ECG/HR/Temp/Respiration	10
54	Nebulizer, ultrasonic	4
55	Negatoscope, 3 parts	2
56	Operating table (general)	1
57	Otho-ophthalmoscope	4
58	Overbed table	40
59	Oxymeter, pulse	5
60	Patient monitoring central w/printer	2
61	PC computer & printer	4
62	pH meter	1
63	Refrigerator	5
64	Refrigerator, laboratory	3
65	Resuscitator, manual, adult	2
66	Resuscitator, manual, adult/pediatric	6
67	Resuscitator, manual, pediatric	2
68	Scale, adult, antropometric	2
69	Single chair	40
70	Spectrophotometer, UV-VIS	1
71	Sphygmomanometer, table, ad/ped.	6
72	Sphygmomanometer, wall mounted	10
73	Sphygmomanometer, adult, mobile	6
74	Sphygmomanometer, adult/ped, mobile	3
75	Spirometer	1
76	Sterilizer, dry	2
77	Sterilizer, steam, horizontal	1
78	Stethoscope, adult	17
79	Stethoscope, pediatric	9
80	Stirrer, heating, magnetic	1
81	Suction pump, high pressure	17
82	Suction pump, toracic	2
83	Supplies transport trolley	1
84	Surgeon stool	1
85	Surgical instruments set, large	2
86	Surgical instruments set, minor	2
87	Timer stopclock, 60 minutes	3
88	Tracheotomy set	5
89	Urine analyzer	1
90	US film viewer	1
91	US probe, abdominal	1
92	US probe, cardiology	1
93	US scanner camera multiformat	1
94	US scanner printer	1
95	US scanner, multipurpose	1
96	Veloergometer	1
97	Ventilator volumetric, adult	3
98	Ventilator, adult, mobile	2
99	Ventilator, anesthetic	1
100	Ventilator, pediatric	2
101	Washer, flexible endoscopes	1
102	Working table	10
103	X-ray film processor, small capacity	1
104	X-ray unit, mobile	1

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MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR IMPROVEMENT OF EQUIPMENT
IN PROF. O. GUDUSHAURI GENERAL HOSPITAL
IN GEORGIA
(EXPLANATION ON DRAFT REPORT)

In November 2000, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Basic Design Study Team on the Project for Improvement of Equipment in Prof. O. Gudushauri General Hospital (hereinafter referred to as "the Project") to Georgia, and through discussion, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the study.

In order to explain and to consult the Georgia on the components of the draft report, JICA sent to Georgia the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Dr. Hiroyoshi Endo, Director of International Cooperation, Ministry of Health, Labour and Welfare, from March 8 to March 29, 2001.

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

Tbilisi, March 16, 2001

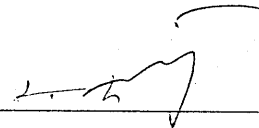
遠藤 弘 良

Mr. Hiroyoshi Endo, MD

Leader

Basic Design Study Team

Japan International Cooperation Agency



Mr. Avtandil Jorbenadze, MD

Minister,

Ministry of Labour, Health and Social

Affairs of GEORGIA

ATTACHMENT

1. Components of the Draft Report

The Government of Georgia agreed and accepted in principle the components of the draft report explained by the Team. The equipment list of the draft report is described in Annex1. The final equipment list which will be procured under the Project will be decided by Japanese side after further study.

2. Japan's Grant Aid scheme

The Georgian side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Georgia as explained by the Team and described in Annex-3 and Annex-4 of the Minutes of Discussions signed by both parties on November 29, 2000.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed item and send it to the Government of Georgia around June, 2001.

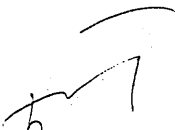
4. Other relevant issues

4-1 The Georgian side will complete civil works of Prof. O. Gudushauri General Hospital for installation of the medical equipment by March 2002.

4-2 The Georgian side has agreed to secure and allocate the enough budgets to operate and maintain the medical equipment provided by the Grant Aid properly and effectively

4-3 Both sides agreed that all contents of this draft report is confidential and should not be duplicated or released to any other parties.

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Equipment List (Gudushauri General Hospital)

ANNEX 1

1/3

Item No	Name of Medical Equipment	Q'ty
1	Abdominal hysterectomy instrument set	1
2	Abrams pleural biopsy set	4
3	Caesarian instruments set	2
4	Gall bladder surgical instrument set	2
5	Intestinal surgical instruments set	1
6	Lamp, surgical, batteries, mobile	2
7	Lamp, surgical, ceiling	5
8	Skin biopsy set	4
9	Skin graft surgical instrument set	3
10	Surgical instruments set, large	3
11	Surgical minor set	2
12	Thyroidectomy surgical instrument set	1
13	Vasectomy surgical instrument set	2
14	Abdominal Tubal ligation set	1
15	Cholecystectomy instruments set	1
16	Orthopedic surgical instruments small set	1
17	Orthopedic surgical instruments big set	1
18	Anesthetic unit with ventilator	4
19	Electrosurgical unit	4
20	Operating table (general and cesaria)	2
21	Operating table (general and ortho.)	2
22	Suction pump, gynecological	6
23	Suction pump, high pressure	6
24	Suction pump, low pressure	6
25	Table mayo instrument patt	4
26	I.V. cut down set	2
27	Infusion pump, syringe	10
28	Infusion pump, volumetric	6
29	Instrument set intubation	8
30	Instrument set for intubation of the trachea	2
31	Laryngoscope, 3 curved blades	2
32	Laryngoscope, 3 curved blades, infant	1
33	Laryngoscope, adult/pediatric	2
34	Laryngoscope, straight blade, infant	1
35	Monitor, ECG/HR/NIBP/Temp./Resp./SpO2	14
36	Patient monitoring central w/printer	1
37	Ventilator volumetric, adult	4
38	Ventilator volumetric, neonatal	2
39	Bed (ICU)	10
40	Infant incubator, intensive care	3
41	Infant warmer	4
42	Bassinette mobile detach cnb w/mattress	10
43	Gynecology basic set	4
44	Instrument set for delivery	2
45	Instrument set for Obs. & Gyn. consulting	3
46	US fetal detector	1
47	Vaginal repair & hysterectomy inst. set	2
48	Vaginal suture set	4
49	Couche exam GY	4
50	Obstetric table with mattress	2

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Equipment List (Gudushauri General Hospital)

ANNEX 1

2/3

Item No	Name of Medical Equipment	Q'ty
51	Bilirubinometer	1
52	Blood gas analyzer	1
53	Freezer	2
54	pH meter	1
55	Refrigerator, laboratory	1
56	Fume hood	2
57	Blood bags' seal machine	1
58	Blood refrigerator	1
59	Blood units balance	1
60	Centrifuge for blood bags	1
61	Freezer, blood plasma	1
62	Refrigerator	1
63	Couch donor blood	1
64	CT-Scanner, spiral	1
65	Day-light processing machine	1
66	Exposimeter, automatic	1
67	Negatoscope, 3 parts	1
68	Radiologic unit, general examination	1
69	US scanner mobile with 2 probes and printer	1
70	X-ray film cassettes (package)	1
71	X-ray processor, small capacity	1
72	X-ray protecting apron	2
73	X-ray protecting devices	2
74	Intraoral Xray	1
75	Mammography unit	1
76	Bath tubs for hydrotherapy	2
77	Microwave therapy equipment	1
78	Nebulizer, ultrasonic	5
79	Patient lifter, hydrotherapy	1
80	Shortwave therapy equipment	1
81	Ultrasound therapy equipment	1
82	UV-IV therapy equipment	1
83	Hydrocollator unit	1
84	Phototherapy unit	6
85	Bath wax for foot	1
86	Bath wax for hand	1
87	Cold light source unit	3
88	Colonofibroscope	2
89	Fibrobroncoscope	2
90	Fibrocistoscope	1
91	Fibroduodenoscope	1
92	Fibrogastroscope	2
93	Rectoscope	1
94	Washer, flexible endoscopes	2
95	Video monitor system for endoscopy	2
96	Suction pump for endoscopy	3
97	Cabinet storage endoscope	2
98	Sphygmomanometer, neonatal, mobile	3
99	Spirometer	1
100	Sterilizer, dry	6

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Equipment List (Gudushauri General Hospital)

ANNEX 1

Item No	Name of Medical Equipment	Q'ty
101	Instrument set for ward	6
102	Otho-ophthalmoscope	5
103	Postmortem instrument set	2
104	Chair wheel	4
105	Mattress ripple altn anti bed sore	4
106	Bed (ward) height adjust	12
107	Cabinet biosafety	2

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Equipment List (Centre of Urgent Cardiology)

ANNEX 1

Item No	Name of Medical Equipment	Q'ty
1	Anesthetic unit with ventilator	2
2	Cardiosurgical instruments set	2
3	Electrosurgical unit	1
4	Infusion pump, syringe	5
5	Lamp, surgical, batteries, mobile	1
6	Lamp, surgical, ceiling	1
7	Laryngoscope, adult/pediatric	1
8	Operating table (general)	1
9	Suction pump, high pressure	2
10	Suction pump, tracic	2
11	Surgical instruments set, large	2
12	X-ray processor, small capacity	1
13	X-ray unit, mobile	1
14	Defibrillator/monitor	2
15	Infusion pump, volumetric	5
16	Bed (ICU)	8
17	Monitor, ECG/HR/NIBP/Temp./Resp./SpO2	8
18	Monitor, ECG/HR/Resp	5
19	Oxymeter, pulse	2
20	Patient monitoring central w/printer	2
21	Resuscitator, manual, adult/pediatric	4
22	Tracheotomy set	2
23	Ventilator volumetric, adult	3
24	Ventilator, adult, mobile	2
25	Ventilator volumetric, neonatal	1
26	Automatic cell counter	1
27	Balance, analysis	1
28	Blood refrigerator	1
29	Blood gas analyzer	1
30	Centrifuge, universal	1
31	Coagulator analyzer, semi-automatic	1
32	Freezer	1
33	Microscope, binocular	2
34	Refrigerator, laboratory	1
35	Fibrobronchoscope with light source and suction pump	1
36	Electrocardiograph, 6ch	2
37	Spirometer	1
38	Veloergometer (treadmill and ECG)	1
39	Washer, flexible endoscopes	1
40	US scanner, multipurpose with 2 probes and printer	1
41	Sterilizer, dry	2
42	Sterilizer, steam, horizontal	1
43	Holter ECG equipment with 3 recorders	1

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Appendices-5 References

	Name	Publisher	Year
1	Atlas of Main Health Indicators Georgia, 1998 Year	Ministry of Health of Georgia Center of Medical Statistics and Information	1999
2	Georgian National Health Policy	The Government of Georgia Ministry of Health of Georgia	1999
3	Strategic health Plan for Georgia 2000-2009	The Government of Georgia Ministry of Health of Georgia	1999
4	Health and Health Care	Ministry of Health of Georgia	1999
5	Country Health Report Georgia	EUROHEALTH programme	1999
6	Preliminary Design Report for the General Hospital Professor Gudushauri, Tbilisi	Weidleplan	1999
7	Draft Report Estimate Calculation of Operating Cost for the General Hospital Professor Gudushauri, Tbilisi	Weidleplan	1999