Ministry of Health
Romania

BASIC DESIGN STUDY REPORT
ON
THE PROJECT
FOR
THE IMPROVEMENT OF THE MEDICAL EQUIPMENT FOR EMERGENCY HOSPITAL (FLOREASCA) AND THE CENTRAL HOSPITAL FOR CHILDREN (GRIGORE ALEXANDRESCU) IN BUCHAREST
IN
ROMANIA

JANUARY, 1999

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
INTERNATIONAL TECHNO CENTER CO., LTD.
OVERSEAS ENGINEERING SERVICE

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PREFACE

In response to a request from the Government of Romania, the Government of Japan decided to conduct a basic design study on the Project for the Improvement of the Medical Equipment for Emergency Hospital (Floreasca) and the Central Hospital for Children (Grigore Alexandrescu) in Bucharest in Romania and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Romania a study team from June 20 to July 19, 1998.

The team held discussions with the officials concerned of the Government of Romania, 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 Romania 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 Romania for their close cooperation extended to the teams.

January, 1999

Kimio Fujita
President
Japan International Cooperation Agency

January, 1999

Letter of Transmittal

We are pleased to submit to you the basic design study report on the Project for the Improvement of the Medical Equipment for Emergency Hospital (Floreasca) and the Central Hospital for Children (Grigore Alexandrescu) in Bucharest in Romania.

This study was conducted by International Techno Center Co., Ltd., and Overseas Engineering Service under a contract to JICA, during the period from June 11, 1998 to February 22, 1999. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Romania 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,

Shigetaka Tojo
Project Manager,
Basic design study team on the Project for the Improvement of the Medical Equipment for Emergency Hospital (Floreasca) and the Central Hospital for Children (Grigore Alexandrescu) in Bucharest in Romania
International Techno Center Co., Ltd.

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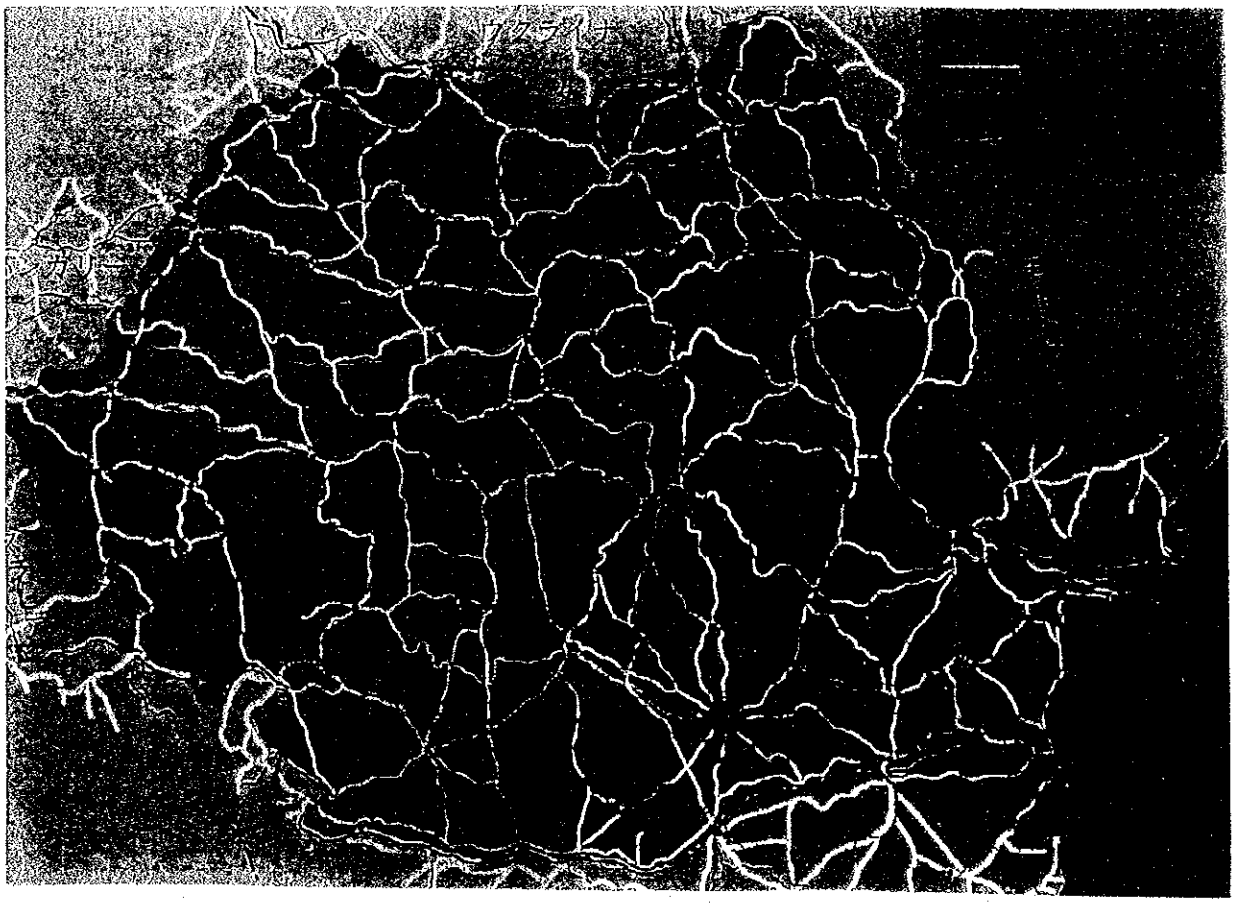

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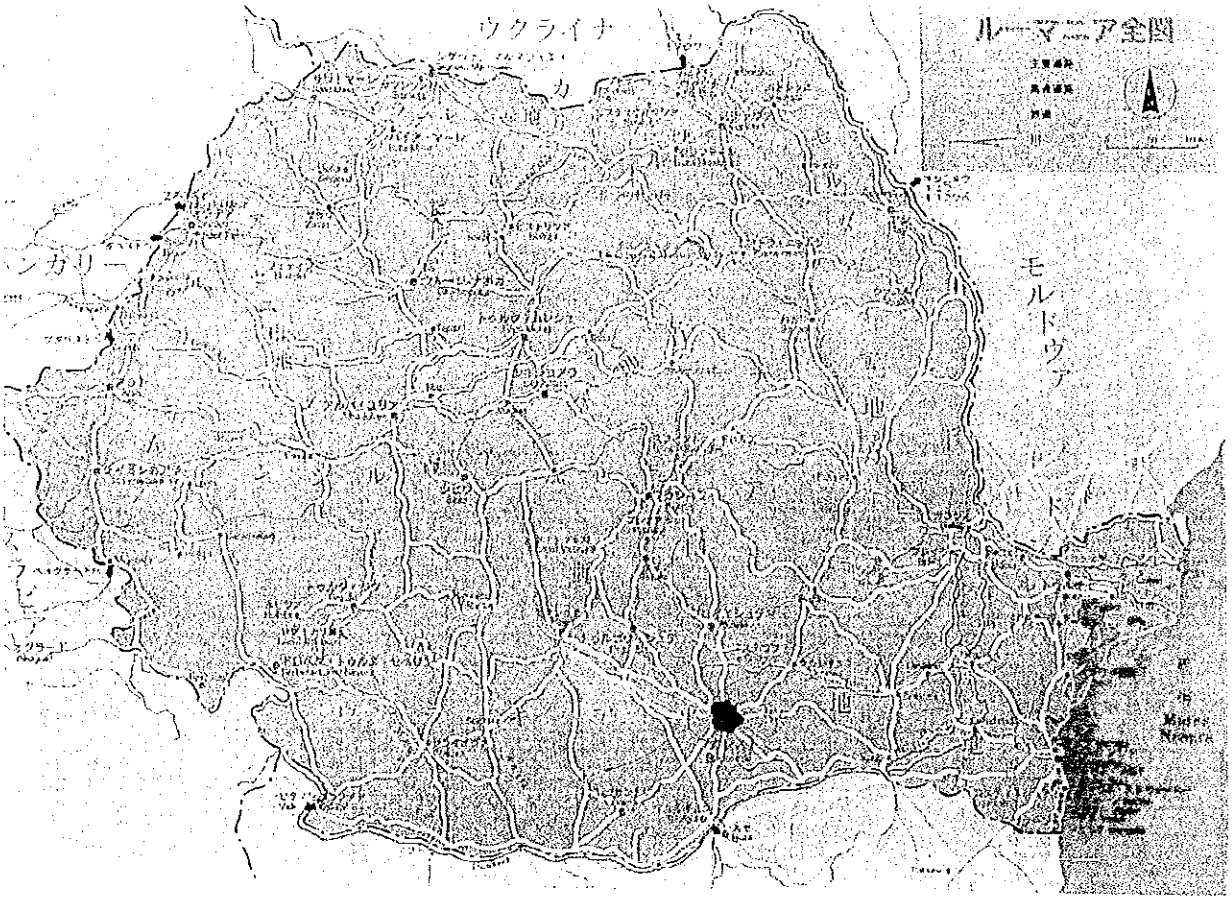
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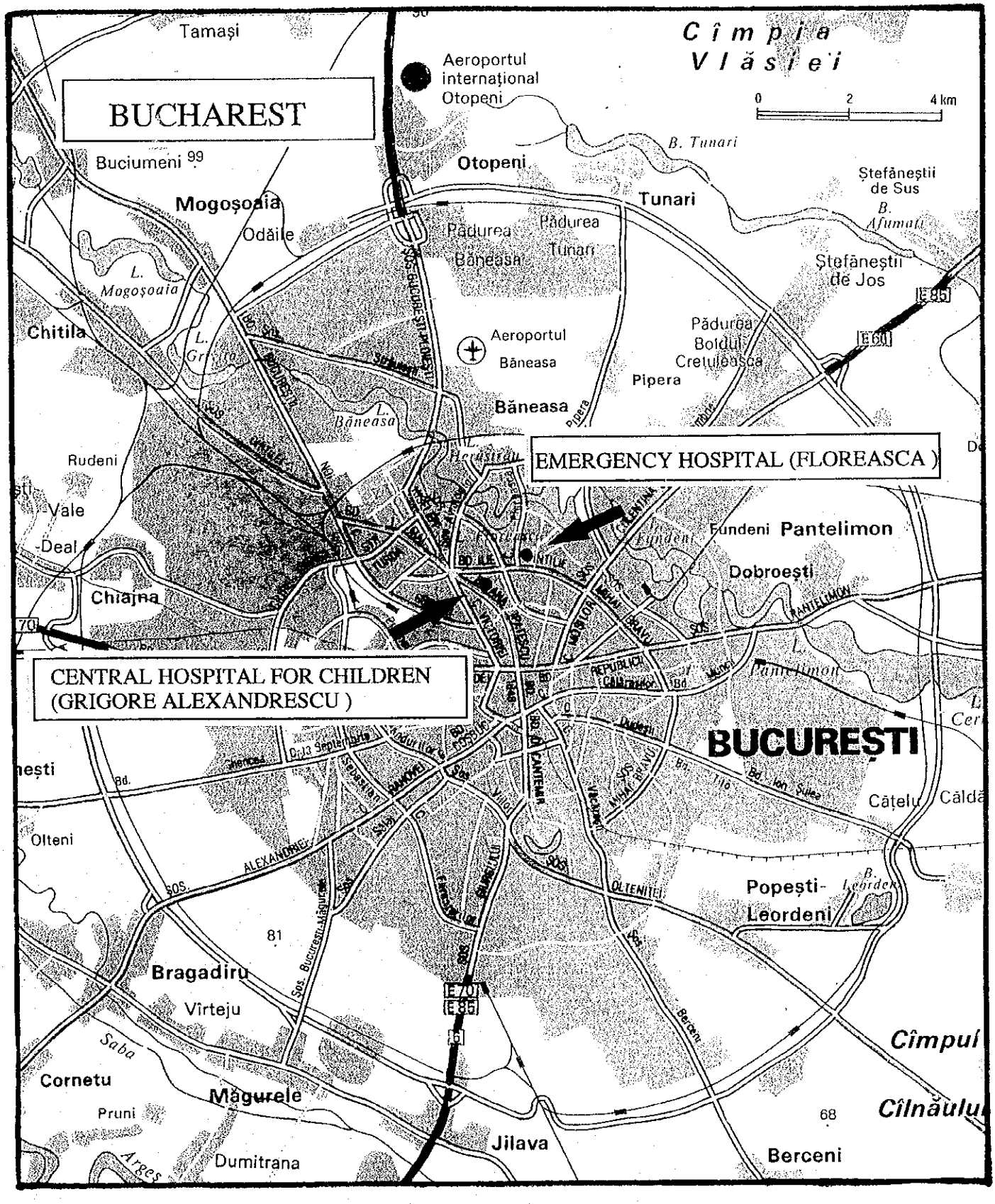
PROJECT SITE



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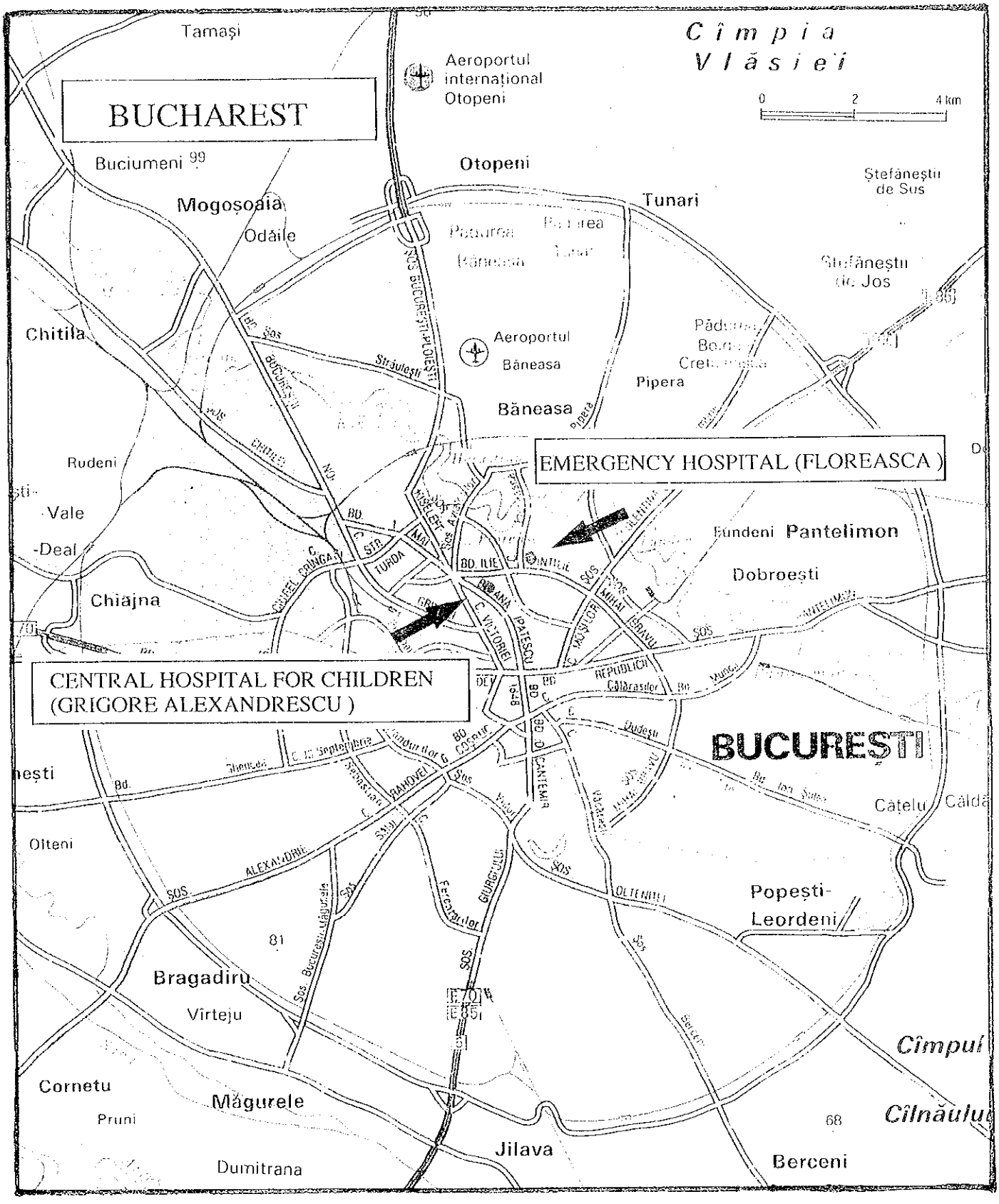

Abbreviations

A/P	Authorization to Pay
B/A	Banking Arrangement
CCU	Coronary Care Unit
E/N	Exchange of Notes
GP	General Practitioner
ICU	Intensive Care Unit
NICU	Neonatal Intensive Care Unit
NHIH	National Health Insurance House

BASIC DESIGN STUDY ON THE PROJECT

FOR

THE IMPROVEMENT OF THE MEDICAL EQUIPMENT FOR EMERGENCY HOSPITAL (FLOREASCA) AND THE CENTRAL HOSPITAL FOR CHILDREN (GRIGORE ALEXANDRESCU) IN BUCHAREST

IN

ROMANIA

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2. Survey Schedule
3. List of Party Concerned in the Recipient Country
4. Minutes of Discussion

Chapter 1 Background of the Request

Chapter 1 Background of the Project

1-1 Background of the Project

After the revolution of 1989, the economy of the Romania has been in a difficult situation. With economic difficulty, the health care system of the country has fallen into financial difficulties. As a result, the Ministry of Health of Romania has been only able to keep ordinary expenditures for personnel expenses, etc. in annual budgets, and it has not been successful in allocating funds necessary for purchase of medical equipment and renovation of facilities. Thus, many medical facilities are now in dilapidation with old medical equipment. With a severe shortage of medical equipment, they are not able to provide modern medical services. This condition has lowered the morale of medical personnel in the face of increasing demand for medical services. Another problem is a lack of cooperation among medical facilities, which has generated concentrations of patients to high level medical facilities (i.e., hospitals). As a result, the referral system has collapsed, causing further decline of the quality of medical services. In this situation, the Ministry of Health has drawn up a reform plan, "Health Care Reform", and decided to make a serious effort in improving the quality of the health care system. Major themes of the reform plan are to introduce a health insurance system and to improve primary health care services. However, even though the introduction of the health insurance system is decided, the date of the execution is not yet determined. Also, in order to promote primary health care, it is necessary to reorganize, reeducate, and maintain family doctors, who are locally referred as "GP" and play a major role in providing primary health care. This process of reorganization and maintaining of the staff will still take time to show a real effect in the primary health care services.

On the other hand, health care need in Romania is characterized by such diseases as cardiovascular disease, malignant tumor, respiratory disease, injury and intoxication, alimentary disease, etc. and a high rate of infant mortality. This condition demands improvement of not only primary health care but also tertiary health care for treating expectant

and nursing mothers and patients who are affected with such diseases.

Furthermore, because of the collapse of the referral system as mentioned above, the present system of medical service is such a condition that all patients whether they are in a light ailment or in a serious condition are first examined at the outpatient departments of emergency hospitals and then sent to respective specialized departments of other hospitals for treatment. This condition is causing congestion at the emergency hospitals and has lowered the quality of emergency care. Thus, people are now demanding improvement of emergency hospitals.

Emergency Hospital (Floreasca) and Central Hospital for Children (Grigore Alexandrescu), which are to be improved on this project, are top referral hospitals that play core roles not only in providing medical services but also in conducting medical education, researches, and preventive medicine. Also, these two hospitals are core hospitals in the emergency care system which is organized by the six hospitals of the municipality of Bucharest, one of these two hospitals for treating adults and the other for children.

Although Emergency Hospital (Floreasca) has constructed a ward for emergency care, with funds from the government and the municipality of Bucharest, the hospital is not funded sufficiently to procure necessary medical equipment, so the hospital is not in a condition to perform medical services effectively. Also, the medical activities of Central Hospital for Children (Grigore Alexandrescu) is hampered by a lack of adequate medical equipment as the existing equipment is old and in dilapidation. Therefore, it is urgently desired that these two hospitals be improved to function as tertiary care facilities as well as emergency care hospitals.

In accordance with the government policy, the municipality of Bucharest is making efforts to improve the quality of medical services by reorganizing hospitals, training family doctors for primary health care facilities, and providing basic medical equipment and emergency care equipment. However, because the funds of the city are limited, the municipality of Bucharest is not able to carry out a substantial procurement of medical equipment which should be directed to Emergency Hospital (Floreasca) and Central Hospital for Children (Grigore Alexandrescu).

On this background, the Government of Romania has asked the Government of Japan for a grant in assistance to procure medical equipment which is necessary for Emergency Hospital (Floreasca) and Central Hospital for Children (Grigore Alexandrescu) to be functional as tertiary medical facilities as well as emergency care hospitals in carrying out medical activities.

1-2 Outline of the Request

1) Objectives

At present, Emergency Hospital (Floreasca) and Central Hospital for Children (Grigore Alexandrescu), which are tertiary medical facilities and emergency hospitals, are not able to provide necessary medical services to patients even though they are the top referral hospitals of Romania. To solve this problem, an objective of this project is to help Emergency Hospital (Floreasca) start providing medical services at departments which are not functional in the newly built emergency care ward. Another objective is to revitalize the diagnostic and treatment functions of Central Hospital for Children (Grigore Alexandrescu) by renewing and supplementing the existing medical equipment as well as introducing new medical devices.

2) Executing agency

The executing agency of this project is the Ministry of Health of Romania.

3) Facilities to be improved on this project

The medical facilities which are requested to be improved on this project are Central Hospital for Children (Grigore Alexandrescu) and the newly built emergency care ward of Floreasca Emergency Hospital.

4) Contents of the request

The items of medical equipment requested for the above medical facilities are listed below.

Emergency Hospital (Floreasca)

Medical Image Department

X-ray TV System, CT Scanner

Digestive Endoscopy Department

Panendoscope Set with Light Source, Duodenofiberscope Set, Electrosurgical Unit, Suction Unit, Colonofiberscope Set with Light Source

ICU / CCU

Central Monitor for 14 Patients, Bedside Monitor, Defibrillator with Monitor, Ventilator

Operating Room

Anesthesia Apparatus, Electrosurgical Unit, Electric Suction Unit, Arthroscopy Unit with Light Source, Neurosurgery Operation Microscope, Mobile C-arm X-ray TV System

ENT

Rhino-laringofiberscope Set with Light Source, Bronchofiberscope Set with Light Source, Video Endoscope System, CO2 Surgical Laser, Full-automasking and Full Automasking Audiometer

Ophthalmology

Operative Microscope for ENT and Ophthalmology, Phaco System, Slit Lamp Microscope, Ophthalmic YAG Laser System, Echo Scan for Ophthalmology

Central Hospital for Children (Grigore Alexandrescu)

Out-Patient

Diagnostic Set, Examination Table, Examination Light, Ultrasonic Nebulizer, Suction Unit, E.C.G. 1 Channel, X-ray Film Illuminator, Weighing Scale, Sphygmomanometer, Hot Air Sterilizer, Autoclave, Bilirubin Meter, Hematocrit Centrifuge, Instrument Cabinet, Instrument Cart

ENT

Audiometer, ENT Treatment Unit, Jackson Bronchoscope, Laryngoscope for Child

Emergency

Diagnostic Set, Examination Table, Examination Light, X-ray Film Illuminator, Instrument Cart, Instrument Cabinet, Sphygmomanometer, Stethoscope, IV Stand, Hot Air Sterilizer, Medical Refrigerator, Suction Unit, Defibrillator with E.C.G. Monitor, Resuscitator Ambu, Stretcher, X-ray

Unit, Automatic X-ray Film Developer, E.C.G. Machine, Ambulance

Operating Theater, Orthopedic

Operating Table for Orthopedic, Operating Stool, Foot Stool, Operating Lamp, Anesthesia Apparatus, Suction Unit, Patient Monitor, Pulse Oxymeter, Instrument Cart, Electro Cautery, Born Drill Set, Kick Bucket

Operating Theater, Plastic Surgery

Operating Table, Operating Stool, Foot Stool, Anesthesia Apparatus with Ventilator, Endotracheal Set, Stretcher, Suction Unit, Patient Monitor, Pulse Oxymeter, Instrument Cart, Electro Cautery, Hot Air Sterilizer, Autoclave, Dressing Container, Kick Bucket

Operating Theater, Central

Operating Table, Operating Stool, Foot Stool, Operating Lamp, Anesthesia Apparatus, Endotracheal Set, Stretcher, Suction Unit, Patient Monitor, Pulse Oxymeter, Instrument Cart, Electro Cautery, Hot Air Sterilizer, Autoclave, Dressing Container, Kick Bucket, C-Arm X-ray Unit

Operating Theater, Urology

Operating Table, Operating Stool, Foot Stool, Operating Lamp, Anesthesia Apparatus with Ventilator, Endotracheal Set, Stretcher, Suction Unit, Patient Monitor, Pulse Oxymeter, Instrument Cart, Electro Cautery, Hot Air Sterilizer, Autoclave, Dressing Container, Kick Bucket

ICU

Infant Incubator, Transport Incubator, Infant Care Unit, Phototherapy Unit, Oxygen Head Box for Infant, Patient Monitor for Pediatric, Neonatal Monitor, Pulse Oxymeter, Syringe Infusion Pump, Infusion Pump, Infant Ventilator, Resuscitator Ambu, Ultrasonic Nebulizer, Infant Scale, Infant Bassinet Stand, Diagnostic Set, Examination Light, Laryngoscope, Sphygmomanometer with 3 sizes of cuff, Stethoscope for New Born Baby, IV Stand, Hot Air Sterilizer, Autoclave, Instrument Cabinet, Instrument Cart, Medical Refrigerator, X-ray Film Illuminator, Blood Gas Analyzer, Hemoglobin Meter, Hematocrit Centrifuge, Bilirubin Meter, Nursing Bottle Warmer, Suction Unit

Radiology

X-ray Unit Fluroscopy, Ultrasound Apparatus Color Doppler, Automatic X-ray Film Developer

Laboratory

Flame Photometer, Blood Cell Counter, Spectrophotometer,

	Coagulometer, Centrifuge table top type, Electrophoresis Apparatus, Densitometer, Automatic Differential Leukocyte Counter, Stirrer, Mixer, Water Bath, Binocular Microscope, Trinocular Microscope for Education, Water Distiller, Incubator, Hot Air Sterilizer, Autoclave vertical type, Medical Refrigerator, Deep Freezer, CO2 Incubator
Endoscope	Gastrointestinal Fiberscope for Child, Colonofiberscope for Child, Universal Light Source, Endoscopic Suction Unit, Examination Table, Cabinet for Fiberscope, Disinfection Trolley, Ultrasonic Cleaner
Urology	Urethrofiberscope for Pediatric with Light Source, Hemmodialysis Apparatus, Water Treatment System

Chapter 2 Contents of the Project

Chapter 2 Contents of the Project

2-1 Objectives of the Project

The Ministry of Health of Romania is carrying out health care reform to improve the quality of health care services. In compliance with this health care reform, the municipality of Bucharest is conducting rationalization and reorganization of the health care system by reorganizing hospitals, training family doctors and providing basic medical equipment and emergency care equipment to primary health care facilities. Emergency Hospital (Floreasca) and Central Hospital for Children (Grigore Alexandrescu) are top referral medical facilities of the country and are the core hospitals of the municipality of Bucharest. The municipal government has constructed a new emergency care ward for Emergency Hospital (Floreasca) and has provided a little medical examination equipment to Central Hospital for Children (Grigore Alexandrescu). However, because the funds of the city are limited, the City of Bucharest cannot provide medical equipment in a quality and quantity sufficient for Emergency Hospital (Floreasca) and Central Hospital for Children (Grigore Alexandrescu) to be fully functional as tertiary care medical facilities.

Therefore, the objective of this project is to help Emergency Hospital (Floreasca) start providing medical services at departments which are not functional in the newly built emergency care ward because of a lack of medical equipment. Another objective is to revitalize the diagnostic and treatment functions of the pediatrics hospital by renewing and supplementing the existing medical equipment as well as introducing new medical devices.

2-2 Basic Concept of the Project

In this basic design study, the items of medical equipment to be procured are determined in consideration of the following matters: this is the first project in Romania which is conducted in Japanese grant

assistance; the appropriateness of the request is confirmed in a preliminary study, which is conducted prior to this basic design study; the contents of the request is studied and reorganized in the preliminary study; and the specifications of the medical equipment to be procured are determined in the basic design study. A field study and discussions with the Romanian party have been conducted to collect information on health care in Romania, to determine the goals of this project and to study the medical facilities to be improved on the project.

Departments of Project Site :

Emergency Hospital (Floreasca)	Central Hospital for Children (Grigore Alexandrescu)	
Medical Imaging Dept.	Out-Patient	Operating Theater, Urology
Digestive Endoscopy Dept.	ENT	ICU
ICU / CCU	Emergency	Radiology
Operating Room	Operating Theater, Orthopedic	Laboratory
ENT	Operating Theater, Plastic Surgery	Endoscope
Ophthalmology	Operating Theater, Central	Urology

The following points are confirmed in the field study:

1. the medical facilities to be improved on the project are tertiary health care facilities as well as emergency care hospitals, which are involved in the health care reform plan of the government;
2. these hospitals cannot provide modern medical services which are necessary for the treatment of patients who are mostly affected from diseases that are prevalent in Western Europe because of the existing medical equipment, which is old and dysfunctional;
3. these hospitals are not able to procure necessary medical equipment because of financial difficulty;
4. these hospitals have tried to procure medical equipment and have received some medical devices from various international aid organizations, but these devices are second hand, incomplete or in need of spare parts which are not available locally;
5. the items of medical equipment requested are essential for improvement of these hospitals but are difficult to procure by the Romanian party alone;
6. these two hospitals are well equipped with facilities for electricity and medical gases and have rooms for medical equipment installation, so no problem is expected in the installation of the items of medical equipment

which are requested;

7. these hospitals have sufficient numbers of medical personnel, so no problem is expected in the operation of the medical equipment requested; and
8. there are local representatives of manufacturers for the items of medical equipment requested, which items may require periodic maintenance services after the procurement.

Principle of the assistance

The assistance offered is to help the health care reform of the Government of Romania and to promote the improvement of the health care system which is carried out by the City of Bucharest.

Principle of the project

The principle of this project is to improve the medical services which are provided in Emergency Hospital (Floreasca) and Central Hospital for Children (Grigore Alexandrescu).

Effects of the project

Emergency Hospital (Floreasca) will be able to start providing medical services at the medical departments which are located in the newly built emergency care ward. These departments are not functional at present because of a lack of medical equipment.

The diagnostic and treatment functions of Central Hospital for Children (Grigore Alexandrescu) will be improved.

Basic policies applied in the equipment selection are:

1. to improve the diagnostic and treatment functions of these hospitals by renewing the old items of the existing medical equipment and by supplementing the items of the existing equipment which are in shortage; and
2. to help these hospitals recover the ability to provide the quality of medical services required as tertiary health care facilities.
3. However, CT scanners, which is one of the items requested, will be excluded from the procurement because of a political decision.

Thus, the basic concept of this project is to procure medical equipment for Emergency Hospital (Floreasca) and Central Hospital for Children (Grigore Alexandrescu), so that the newly built emergency care ward of Emergency Hospital (Floreasca) can be made fully functional and that the
diagnostic and treatment functions of the pediatrics hospital can be improved dramatically.

2-3 Basic Design

2-3-1 Design Concept

(1) Protection against natural condition

Bucharest has warm summers and cold winters, and subzero temperatures prevail in winter months. However, these two hospitals, which are to be improved on this project, are equipped with air conditioners. The ICU rooms, the operation rooms, etc. are air conditioned, and the existing medical equipment is operated without any adverse effect from the climate. Therefore, no extra measure is taken for the protection of the medical equipment against the natural condition.

(2) Medical facilities

There is no problem as far as the installation space of the medical equipment is concerned. However, the site of Emergency Hospital (Floreasca) is relatively narrow, and the parking lot is congested. As a result, it may be difficult to keep a sufficient space for unloading and temporarily storing the equipment at the site. Therefore, a careful planning must be made for the installation of the equipment in good communication with the administration of the hospital, so that the installation work will be carried out smoothly without disrupting the activities of the hospital.

(3) Social practice

The installation work of the project may fall near the end of the year, which is a Christmas season. This season is similar to the year end of Japan, so a little slowing may be expected in the execution of the project.

The traffic becomes congested, some persons concerned with the project may go on vacation, and so on. To secure smooth execution of the project, it is important that the installation work be scheduled to complete before the beginning of this season.

(4) Local procurement and local representatives

In the field study, it is ascertained that locally produced medical equipment lacks reliability in product quality and in after-sale service. Therefore, no medical equipment shall be procured locally on this project. However, for the items which require periodical or special maintenance services or supplies of consumable or reagents, or for the items which require some installation work or operational explanation, products are selected from manufacturers who have local representatives to carry out the installation and maintenance work smoothly. However, substantial differences exist among the local representatives in the form of services and in the technical level. Therefore, the products which require services from the local representatives of the manufacturers shall be selected in consideration of the technical abilities and experiences of the local representatives in the procurement planning.

(5) Equipment maintenance

These two hospitals do not have any section or department which is specialized for the maintenance of the medical equipment. Thus, the medical equipment is checked and repaired by service men who are dispatched from the manufacturers or their local representatives in compliance with the maintenance agreements signed with the hospitals. However, for the purpose of ensuring maintenance work on the medical equipment after the procurement, doctors, nurses, and technicians who will be in charge of operating the equipment shall be given instructions regarding how to operate the equipment and how to carry out maintenance work and daily inspections on the equipment. In this respect, manuals and technical data necessary for the maintenance work shall be provided together with lists of the manufacturers and their local representatives as reference.

(6) Items of equipment and their grades

After analyzing the information collected in the field study, the items of medical equipment to be procured and their grades are decided as follows.

Selection of Items

The items of the medical equipment to be procured are:

1. those which are considered necessary for examinations and treatments performed at the departments that are improved on this project;
2. those which are considered appropriate as replacements of the existing items that are in dilapidation with wear and tear;
3. those considered appropriate as additions to the existing items because of the current demands for special medical services, which demands are observed at the respective departments; and
4. those considered necessary and appropriate in consideration of the technical levels of these hospitals in the light of the latest development of medical equipment.

Determination of Grades

The grades of the items of the medical equipment to be procured are:

1. at basic levels which satisfy the needs of examinations and treatments;
2. at technical levels which can be easily operable and maintainable by the staffs of these two hospitals;
3. at levels which possess performance capacities that can satisfy the current demands of examinations and treatments at these hospitals; and
4. at levels which can be cost-effectively maintainable by the Romanian party.

Determination of Quantities

The quantities of the items of the medical equipment to be procured are determined and ascertained in consultation with the Romanian party on the basis of the following points:

1. the quantities of the existing items which are more than ten years old, dilapidated or damaged, and in need of replacement;
2. the quantities which are considered short for satisfying the current needs of the hospitals; and
3. the quantities of other items which are related in medical functions, so that there will be no waste of resources.

(7) Work schedule

In scheduling the implementation of this project, the installation work may fall in the Christmas season as mentioned in Section (3) above. As a result, the following matters may be affected by the circumstances of the Romanian party: the customs clearance and the receiving of permission for the transportation of the medical equipment to the respective hospitals, the execution of the final inspections on each item of the equipment, and the execution of training sessions. Also, as the hospitals to be improved on the project are emergency care hospitals, unexpected accidents may happen. Therefore, the implementation of the project must be carefully planned in consultation with relevant authorities, so that the delivery and installation of the equipment will be carried out without disrupting the activities of the hospitals and within the period which is agreed upon mutually.

2-3-2 Basic Design

(1) Overall Plan

Target Facilities

The facilities to be improved on this project are Central Hospital for Children (Grigore Alexandrescu) and the newly built emergency care ward of Floreasca Hospital as requested.

1) Newly built emergency ward of Floreasca Hospital

The emergency ward, which will be improved on this project, was constructed with funds (about US$ 3.34 million) from the national government and from the municipality of Bucharest in 1997. It has a building lot of 1,000 m2 and a total floor of 4,000 m2. The building comprises three floors above the ground and one floor under the ground. The first floor incorporates a department for imaging diagnostics including

X-ray; the second floor, an operation department; the third floor, ICU and CCU for internal medicine; and the ground floor, departments for otorhinology, ophthalmology, physiotherapy, etc. The operation rooms in this ward are arranged such that two rooms are used for general surgery, and one room for each specialization of circulatory surgery, neurosurgery, plastic surgery, and orthopedics. The building facilities such as for supplies of electricity and water including drainage have been completed, so there is no problem for the installation of the medical equipment, which is procured especially for the imaging diagnostics department, the operation department, the ICU, the otorhinology department, and the ophthalmology department on this project.

2) Central Hospital for Children (Grigore Alexandrescu)

This hospital has a building lot of 22,000 m^2. The buildings of the hospital are quite old, and the buildings are allocated each for one of the following medical departments: surgery, internal medicine, clinical laboratory, urology, and emergency care. The existing facilities for supplies of electricity, water including drainage, and medical gases are old but well maintained, so there is no problem for the installation of the medical equipment which is procured on this project. This project will improve the medical devices which are used in the outpatient internal medicine department, the otorhinology department, the internal X-ray department, the clinical laboratory, the urology department, the endoscope room, the intensive care units and the seven operating rooms.

(2) Equipment Planning

In the preliminary study, which was conducted before this basic design study, the items of the medical equipment to be procured and their quantities were adjusted. Therefore, in this study, i.e., the basic design study, the specifications of each item of the medical equipment are determined on the basis of the equipment list which was prepared in the preliminary study. This determination of the specifications was carried out in accordance with the following steps.

1. Specifications were prepared in Japan for the items which were expected to be included in the medical equipment to be procured;

2. Principles for selecting items of medical equipment were agreed, and then an equipment list was prepared in discussions with the Romanian party;
3. A study was conducted to see the condition of the existing equipment, the activities of the hospitals which are to be improved on this project and the condition of local representatives of medical equipment manufactures;
4. The specifications of the items were confirmed by the Romanian party on the basis of the specifications which had been prepared beforehand;
5. A final plan for the procurement including the specifications of the medical equipment was prepared in an analysis which was carried out in Japan; and
6. This final plan was presented to the Romanian party when the outline of the project was explained, and the items of the medical equipment to be procured were confirmed along with their quantities and specifications.

The following principles, which were determined in consultation with the Romanian party, were applied in selecting the items to be procured on this project.

Priority rules

The items of the medical equipment to be procured are:

1. essential medical devices which are necessary for performing basic diagnoses and treatments;
2. appropriate as replacing counterparts which renew the existing items that are severely worn out;
3. relatively simple in design and well established as medical devices so that they are easily operated with a standard technique;
4. cost effective in their operation;
5. maintainable by the Romanian party with an affordable maintenance cost; or
6. appropriate as additions to the existing equipment in view of the current needs of the hospitals in diagnostic and treatment

activities.

Deletion rules

Items excluded from the procurement are:

1. such items which infringe relevant laws and regulations concerning sewage treatment, waste disposal, radiation management, etc.;
2. such items which are difficult to maintain locally, either technologically or financially;
3. such items which can be procured locally within the budgets of the hospitals;
4. such items which may cause an environmental problem;
5. such items which use a radioactive isotope or which are related to a device that incorporates a radioactive isotope; and
6. such items which were requested, but have been procured, or are now in a process of procurement.

Priority order

In the equipment list which was prepared by the Romanian party, a priority order was determined such that the items of medical equipment which were determined appropriate for the procurement on this project were labeled "A" while the items which needed a further study and an additional consultation were labeled "B" (refer to the equipment list included in the attached minutes). Then, the items were studied further on appropriateness for the procurement, and their quantities were determined in an analysis which was carried out in Japan. The results of this analysis were summarized as a final plan in a discussion with the Romanian party.

The following tables in the next pages, Table 2-1 and Table 2-2, show the determination which was performed on each item in accordance with the principles of equipment selection in the analysis conducted after the field study.

Table 2-1 Equipment analysis

Dept.	Situation of Exsisting Equipment in Floreasca Emergency Hospital						Requested Equipment of Each Dept.		Priority rules						Analysis			
	Principle Existing Equipments	Qty.	Period of use	good Condition	Out of Order	Other	Requested Equipmant	Qty.	①	②	③	④	⑤	⑥	Replace	Add.	New	Final
Medical Imaging Dept.	X-ray TV system	1	18 years		●	Used article (Donation)	X-ray TV system	1	○	○	○	○	○		1			1
							Automatic Film developper	1	○		○	○					1	1
	Ultrasound Scanner with Color Doppler	1	more than 10 years	●		Image is bad condition	Ultrasound Scanner with Color Doppler	1	○	○	○	○	○		1			1
Digestive Endoscopy Dept.	Panendoscope Set with Light Source	1	more than 5 years	●			Panendoscope Set with Light Source	1	○		○	○		○		1		1
							Duodenofiberscope set	1	○		○	○		○		1		1
							Electrosurgical Unit	2	○		○	○					2	2
	Suction Unit		more than 5 years	●			Suction Unit	2	○		○			○		2		2
	Colonofiberscope Set with Light Source	1	more than 5 years		●		Colonofiberscope Set with Light Source	1	○	○	○	○		○	1			1
	Video Endoscopic System		more than 5 years	●			Video Endoscopic System	1	○		○	○	○	○		1		1
							Cabinet for Fiberscope	1	○		○						1	1
	Disinfection Trolley		more than 5 years	●			Disinfection Trolley	1	○		○			○		1		1
							Ultrasonic Cleaner	1	○		○	○					1	1
ICU／CCU Reciently CCU move to old bilding after repair work of it.	Central monitor with 14 Patients monitor	1	more than 3 years	●		Move to old CCU	Central monitor with 14 Patients monitor	1			○	○	○				1	1
	Bedside monitor	1	more than 3 years	●		Move to old CCU												
	Bedside monitor	1	more than 3 years	●		Move to old CCU												
	Bedside monitor	1	more than 3 years	●		Move to old CCU												
	Bedside monitor	1	more than 3 years	●		Move to old CCU												
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
							Bedside monitor	1	○		○	○	○	○		1		1
							Bedside monitor	1	○		○	○	○	○		1		1
							Bedside monitor	1	○		○	○	○	○		1		1
							Bedside monitor	1	○		○	○	○	○		1		1
							Bedside monitor	1	○		○	○	○	○		1		1
							Bedside monitor	1	○		○	○	○	○		1		1
							Bedside monitor	1	○		○	○	○	○		1		1
							Bedside monitor	1	○		○	○	○	○		1		1
							Bedside monitor	1	○		○	○	○	○		1		1
							Bedside monitor	1	○		○	○	○	○		1		1
							Bedside monitor	1	○		○	○	○	○		1		1
							Bedside monitor	1	○		○	○	○	○		1		1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1

	Situation of Exsisting Equipment in Floreasca Emergency Hospital						Requested Equipment of Each Dept.		Priority rules						Analysis			
Dept.	Principle Existing Equipments	Qty.	Period of use	good Condition	Out of Order	Other	Requested Equipmant	Qty.	①	②	③	④	⑤	⑥	Replace	Add.	New	Final
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Bedside monitor	1	more than 10 years	●			Bedside monitor	1	○	○	○	○	○		1			1
	Defibrilator with monitor	1	more than 10 years	●			Defibrilator with monitor	1	○	○	○	○	○		1			1
	Defibrilator with monitor	1	more than 10 years	●			Defibrilator with monitor	1	○	○	○	○	○		1			1
	Defibrilator with monitor	1	more than 10 years	●														
	Defibrilator with monitor	1	Not use	●		Move to old CCU												
	Defibrilator with monitor	1	more than 10 years	●														
	Ventilator	1	more than 10 years	●			Ventilator	1	○	○	○	○	○		1			1
	Ventilator	1	more than 10 years	●			Ventilator	1	○	○	○	○	○		1			1
	Ventilator	1	more than 10 years	●			Ventilator	1	○	○	○	○	○		1			1
							Ventilator	1	○		○	○	○	○		1		1
							Ventilator	1	○		○	○	○	○		1		1
							Ventilator	1	○		○	○	○	○		1		1
							Ventilator	1	○		○	○	○	○		1		1
							Ventilator	1	○		○	○	○	○		1		1
							Ventilator	1	○		○	○	○	○		1		1
							Ventilator	1	○		○	○	○	○		1		1
							Ventilator	1	○		○	○	○	○		1		1
							Ventilator	1	○		○	○	○	○		1		1
							Ventilator	1	○		○	○	○	○		1		1
							Ventilator	1	○		○	○	○	○		1		1
							Ventilator	1	○		○	○	○	○		1		1
Ope. Room No.1							Anesthesia apparatus	1	○		○	○	○				1	1
No.2							Anesthesia apparatus	1	○		○	○	○				1	1
No.3							Anesthesia apparatus	1	○		○	○	○				1	1
No.4							Anesthesia apparatus	1	○		○	○	○				1	1
No.5							Anesthesia apparatus	1	○		○	○	○				1	1
No.6							Anesthesia apparatus	1	○		○	○	○				1	1
No.1							Electrosurgical unit	1	○		○	○					1	1
No.2							Electrosurgical unit	1	○		○	○					1	1
No.3							Electrosurgical unit	1	○		○	○					1	1
No.4							Electrosurgical unit	1	○		○	○					1	1
No.5							Electrosurgical unit	1	○		○	○					1	1
No.6							Electrosurgical unit	1	○		○	○					1	1
No.2							Electric Suction Unit	1	○		○	○					1	1
No.3							Electric Suction Unit	1	○		○	○					1	1
No.4							Electric Suction Unit	1	○	○	○	○		○			1	1
No.5							Electric Suction Unit	1	○	○	○	○		○			1	1
No.6							Electric Suction Unit	1	○	○	○	○		○			1	1
No.2							Arthroscopy unit with Light Source	1	○		○	○					1	1
No.1							Electric Suction Unit	1	○		○	○					1	1
No.2	Mobile C-arm X-ray TV System	1	more than 5 years		●	Used article (Donation)	Mobile C-arm X-ray TV System	1	○	○	○	○	○		1			1
No.1							Operation Microscope for Neusrosurgery	1	○		○	○	○	○		1		1
ENT							Rhino-Laringofiberscope set with light source	1	○		○	○	○				1	1
							Bronchofiberscope Set with Light Source	1	○		○	○					1	1
							Video Endoscope System	1	○		○	○					1	1
							CO2 surgical Laser	1	○		○	○	○				1	1
							Full-auto and full-automasking audiometer	1	○		○	○					1	1
Ope. room for ENT/Ophl.	Operation Microscope for ENT and Ophthalmology	1	more than 10 years	●			Operation Microscope for ENT and Ophthalmology	1	○	○	○	○			1			1
							Phaco system (anterior-segment surgical technology)	1	○		○	○	○				1	1
Ophtalmology	Slit lamp microscope	1	more than 10 years	●			Slit lamp microscope	1	○	○	○	○			1			1
							Ophthalmic YAG lazer system	1	○		○	○	○				1	1
							Echo scan for Ophthalmology	1	○		○	○	○				1	1
							Photocoagulator	1	○		○	○	○				1	1

Table 2-2 Equipment analysis

Situation of Exsisting Equipment in Grigore Alexsandrescu Central Pediatrics Hospital							Requested Equipment of Each Dept.		Priority rules						Analysis			
Dept.	Principle Existing Equipments	Qty.	Period of use	good Condition	Out of Order	Other	Requested Equipmant	Qty.	①	②	③	④	⑤	⑥	Replac	Add.	New	Final
Out-patient							Diagnostic set	2	○		○						2	2
(Medicine 2 rooms)	Examination Table	1	More than 7 years	●			Examination Table	2	○	○				○	1	1		2
							Examination light	2	○		○		○				2	2
							Ultrasonic Nebulizer	2	○		○	○	○				2	2
	Suction unit	1	More than 10 years	●			Suction unit	2	○	○	○			○	1	1		2
							ECG 1ch	1	○		○	○	○				1	1
							X-ray film illuminator	2	○		○	○	○				2	2
	Weighing scale	1	More than 10 years	●			Weighing scale	1	○	○					1		1	2
							Height Measuring Scale	1	○		○						2	2
	Sphygmomanometer (Wall type)	1	5 years	●	●		Sphygmomanometer	2	○	○				○	2			2
							Hot Air Sterilizer	1	○		○	○					1	1
							Autoclave	1	○		○	○					1	1
							instrument cabinet	2	○	○					2			2
	Instrument cart	1	5 years	●	●		Instrument cart	2	○	○				○	1	1		2
Out-Patient							Diagnostic set	1	○		○						1	1
(Surgery 1 room)	Examination Table	1	More than 10 years	●			Examination Table	1	○	○				○	1			1
							Examination light	1	○		○		○				1	1
							Ultrasonic Nebulizer	1										
							Suction unit	1										
							ECG 1ch	1	○		○	○	○				1	1
							X-ray film illuminator	1	○		○	○	○				1	1
							Weighing scale	1	○		○		○					
							Height Measuring Scale	1	○		○							
							Sphygmomanometer	1	○		○						1	1
							Hot Air Sterilizer	1	○		○	○					1	1
							Autoclave	1	○		○	○					1	1
							instrument cabinet	1	○		○		○				1	1
							Instrument cart	1	○		○		○				1	1
Out-Patient							Diagnostic set	1	○		○						1	1
(Orthopedics Surgery 1 room)	Examination Table	1	More than 10 years	●			Examination Table	1	○	○				○	1			1
							Examination light	1	○		○		○				1	1
							Ultrasonic Nebulizer	1										
							Suction unit	1										
							X-ray film illuminator	1	○		○	○	○				1	1
							Weighing scale	1										
							Height Measuring Scale	1										
							Sphygmomanometer	1	○		○						1	1
							instrument cabinet	1	○		○		○				1	1
							Instrument cart	1	○		○		○				1	1
Out-Patient							Diagnostic set	1	○		○						1	1
(Urology 1 room)	Examination Table	1	More than 10 years	●			Examination Table	1	○	○				○	1			1
							Examination light	1	○		○		○				1	1
							Ultrasonic Nebulizer	1										
							Suction unit	1										
							X-ray film illuminator	1	○		○	○	○				1	1
							Weighing scale	1										
							Height Measuring Scale	1										
							Sphygmomanometer	1	○		○						1	1
							instrument cabinet	1	○		○		○				1	1
							Instrument cart	1	○		○		○				1	1
ENT Out-patient Consultant							Audiometer	1	○		○	○					1	1
(Out-patient Consultant)	ENT treatment chair	1	More than 10 years	●			ENT treatment chair	1	○	○	○	○			1			1
(Word curation)	ENT treatment chair	1	More than 10 years	●			ENT treatment chair	1	○	○	○	○			1			1
(Out-patient Consultant)	ENT treatment unit	1	More than 10 years	●			ENT treatment unit	1	○	○	○	○			1			1
(Word curation)	ENT treatment unit	1	More than 10 years	●			ENT treatment unit	1	○	○	○	○			1			1
(Laryngoscope room)	Jackson Bronchoscope	1	More than 5 years	●			Jackson Bronchoscope	1	○	○	○	○			1			1
(Laryngoscope room)							laryngoscope for child	1	○		○	○					1	1

Situation of Exsisting Equipment in Grigore Alexsandrescu Central Pediatrics Hospital							Requested Equipment of Each Dept.		Priority rules						Analysis			
Dept.	Principle Existing Equipments	Qty.	Period of use	good Condition	Out of Order	Other	Requested Equipmant	Qty.	①	②	③	④	⑤	⑥	Replac	Add.	New	Final
Emergency							Diagnostic Set	3	O		O						3	3
(Consultant/Curation room)	Examination Table	1	More than 10 years	●			Examination Table	2	O	O				O	2			2
(Consultant/Curation room)							Examination Light	1	O		O		O				1	1
(Mineur Operation)							Examination Light	1	O		O		O				1	1
(Consultant/Curation room)							X-ray Film Illuminator	1	O		O	O	O				1	1
(Mineur Operation)							X-ray Film Illuminator	1	O		O	O	O				1	1
(Consultant/Curation room)							Instrument Cart	2	O		O		O				2	2
(Consultant/Curation room)							Instrument Cabinet	2	O		O		O				2	2
(Consultant/Curation room)	Sphygmomanometer	1	More than 5 years	●			Sphygmomanometer	5	O	O				O		3		3
(Consultant/Curation room)							Stethoscope	5	O		O	O	O				3	3
(Observation room)							Iv Stand	4	O		O			O		4		4
(Consultant/Curation room)	Iv Stand	2	More than 10 years	●			Iv Stand	4	O	O				O	2	2		4
(Consultant/Curation room)							Hot Air Sterilizer	1	O		O	O					1	1
(Consultant/Curation room)							Medical Refrigerator	1	O		O	O	O				1	1
(Observation room)	Suction Unit	1	More than 10 years	●			Suction Unit	1	O	O	O				1			1
(Consultant/Curation room)	Suction Unit	3	More than 10 years	●			Suction Unit	1	O	O	O				1			1
(Mineur Operation)	Suction Unit	1	More than 10 years	●			Suction Unit	1	O	O	O				1			1
(Mineur Operation)							Defibrillator With ECG Monitor	1	O	O	O	O	O		1			1
(Observation room)							Resuscitator, Ambu	1	O	O	O	O			1			1
(Consultant/Curation room)							Resuscitator, Ambu	1	O	O	O	O			1			1
(Consultant/Curation room)	Stretcher	1	More than 10 years	●			Stretcher	5	O	O				O	1	2		3
(X-ray room)	X-ray Unit	1	More than 10 years	●			X-ray Unit	1	O	O	O	O	O		1			1
							Automatic X-ray Film Developer	1	O		O	O	O				1	1
(Consultant/Curation room)							ECG Machine	1	O		O	O	O				1	1
Emergency car parking							Ambulance	3	O	O	O	O	O		3			3
Ope.teather, Orthopedic	Operating Table		More than 10 years	●			Operating Table	0	O	O	O	O			1			1
(Ope. room)	Operating Table	1	More than 28 years	●			Operating Table For Orthopedic	1	O	O	O	O			1			1
(Ope. room)							Operating Stool	2	O		O						2	2
(Ope. room)							Foot Stool	2	O		O						2	2
(Ope. room)	Operating Lamp	1	More than 28 years	●			Operating Lamp	0	O	O	O	O	O		1			1
(Ope. room)	Operating Lamp	1	More than 28 years	●			Operating Lamp	1	O	O	O	O	O		1			1
(Ope. room)	Anesthesia Apparatus	1	More than 28 years	●			Anesthesia Apparatus	0	O	O	O	O	O		1			1
(Ope. room)	Anesthesia Apparatus	1	More than 10 years	●			Anesthesia Apparatus	1	O	O	O	O	O		1			1
(Ope. room)	Suction Unit	1	More than 5 years	●			Suction Unit	1	O	O	O				1			1
(Ope. room)	Suction Unit	1	More than 5 years	●			Suction Unit	1	O	O	O				1			1
(Ope. room)							Patient Monitor	1	O		O	O	O				2	2
(Ope. room)							Pulse Oximeter	1	O		O	O	O				2	2
(Ope. room)	Instrument Cart	4	More than 10 years	●			Instrument Cart	2	O	O				O	4			4
(Ope. room)	Electro Cautery	1	More than 5 years	●			Electro Cautery	1	O	O	O	O	O		1	1		2
(Ope. room)	Born Drill Set	1	More than 5 years	●			Born Drill Set	1	O		O	O		O		1		1
(Ope. room)							Kick Bucket	2	O		O						4	4
(Sterilizer room)	Autoclave	1	16 years	●			Autoclave	1	O	O	O	O			1			1
(Ope. room)	Stretcher	2	More than 10 years	●			Stretcher	2	O	O				O	2			2
(Curation room)							Dressing Container	0			O	O					5	5
(Ope. room)							Endotracheal Set	0	O	O	O			O	2			2
Ope. theater, Plastic Surgery	Operating Table		More than 10 years	●			Operating Table	1	O	O	O				1			1
(Ope. room)							Operating Stool	2	O		O			O			2	2
(Ope. room)							Foot Stool	2	O		O			O			2	2
(Ope. room)	Anesthesia Apparatus with Ventilator		More than 5 years	●			Anesthesia Apparatus with Ventilator	1	O	O	O	O	O		1			1
(Ope. room)							Endotracheal Set	2	O	O	O			O	1			1

Situation of Exsisting Equipment in Grigore Alexsandrescu Central Pediatrics Hospital							Requested Equipment of Each Dept.		Priority rules						Analysis			
Dept.	Principle Existing Equipments	Qty.	Period of use	good Condition	Out of Order	Other	Requested Equipment	Qty.	①	②	③	④	⑤	⑥	Replac	Add.	New	Final
(Ope. room)							Stretcher	2	○	○	○			○	1			1
(Ope. room)	Suction Unit		More than 5 years	●			Suction Unit	2	○	○	○	○	○		1			1
(Ope. room)							Patient Monitor	1	○		○	○	○				1	1
(Ope. room)							Pulse Oxymeter	2	○		○	○	○				1	1
(Ope. room)	Instrument Cart	3	More than 10 years	●			Instrument Cart	3	○	○	○			○	2			2
(Ope. room)							Electro Cautery	1	○		○	○	○				1	1
(Sterilizer room)	Hot Air Sterilizer		More than 10 years	●			Hot Air Sterilizer	1	○	○	○	○	○		1			1
(Sterilizer room)	Autoclave	1	16 years				Autoclave	1	○	○	○	○	○		1			1
(Sterilizer room)							Dressing Container	5	○	○	○	○			5			5
(Ope. room)							Kick Bucket	3	○		○	○					2	2
(Ope. room)	Operating Lamp		More than 10 years	●			Operating Lamp	0	○	○	○	○	○		1			1
Ope. Theater, Central No.1	Operating Table	1	More than 10 years	●			Operating Table	1	○	○	○	○			1			1
No.2	Operating Table	1	More than 10 years	●			Operating Table	1	○	○	○	○			1			1
No.3	Operating Table	1	More than 10 years	●			Operating Table	1	○	○	○	○			1			1
No. 4(Infection)	Operating Table	1	More than 10 years	●			Operating Table	1	○	○	○	○			1			1
No.1							Operating Stool	1	○		○						1	1
No.2							Operating Stool	1	○		○						1	1
No.3							Operating Stool	1	○		○						1	1
No. 4(Infection)							Operating Stool	1	○		○						1	1
Ope. room							Foot Stool	4	○		○						4	4
No.1	Operating Lamp	1	22 years	●			Operating Lamp	1	○	○	○	○	○		1			1
No.2	Operating Lamp	1	More than 10 years	●			Operating Lamp	1	○	○	○	○	○		1			1
No.3	Operating Lamp	1	More than 10 years	●			Operating Lamp	1	○	○	○	○	○		1			1
No. 4(Infection)	Operating Lamp	1	More than 10 years	●			Operating Lamp	1	○	○	○	○	○		1			1
No.1	Anesthesia Apparatus with Ventilator	1	More than 10 years	●			Anesthesia Apparatus with Ventilator	1	○	○	○	○	○		1			1
No.2	Anesthesia Apparatus with Ventilator	1	More than 10 years	●			Anesthesia Apparatus with Ventilator	1	○	○	○	○	○		1			1
No.3	Anesthesia Apparatus with Ventilator	1	More than 10 years	●			Anesthesia Apparatus with Ventilator	1	○	○	○	○	○		1			1
No. 4(Infection)	Anesthesia Apparatus with Ventilator	1	More than 10 years	●			Anesthesia Apparatus with Ventilator	1	○	○	○	○	○		1			1
Ope. room	Endotracheal Set	4	More than 5 years	●			Endotracheal Set	4	○	○	○			○	4			4
Ope. room	Stretcher	4	More than 10 years	●			Stretcher	6	○	○				○	4			4
No.1	Suction Unit	1	More than 10 years	●			Suction Unit	1	○	○	○				1			1
No.2	Suction Unit	1	More than 10 years	●			Suction Unit	1	○	○	○				1			1
No.3	Suction Unit	1	More than 10 years	●			Suction Unit	1	○	○	○				1			1
No. 4(Infection)	Suction Unit	1	More than 10 years	●			Suction Unit	1	○	○	○				1			1
No.1	Patient Monitor	1	More than 5 years	●			Patient Monitor	1	○	○	○	○	○		1			1
No.2	Patient Monitor	1	More than 5 years	●			Patient Monitor	1	○	○	○	○	○		1			1
No.3	Patient Monitor	1	More than 10 years	●			Patient Monitor	1	○	○	○	○	○		1			1
No. 4(Infection)	Patient Monitor	1	More than 10 years	●			Patient Monitor	1	○	○	○	○	○		1			1
Ope. room							Pulse Oximeter	4	○		○	○	○				4	4
Ope. room	Instrument Cart	8	More than 10 years	●			Instrument Cart	8	○	○				○	8			8
Ope. room							Electro Cautery	4	○		○	○	○				4	4
Sterilizer room	Hot Air Sterilizer	3	More than 10 years	●			Hot Air Sterilizer	2	○		○	○			2			2
Sterilizer room	Autoclave	2	28 years	●			Autoclave	2	○	○	○	○			2			2
Sterilizer room							Dressing Container	10	○	○				○	10			10
Ope. room							Kick Bucket	8	○		○						8	8
Sterilizer room							C-arm X-ray Unit	1	○	○	○	○	○		1			1
Sterilizer room	Scrub Unit	4	More than 10 years	●			Scrub Unit	4	○	○	○	○			1			1
Ope. Teater, Urology(left)	Operating Table	1	More than 10 years	●			Operating Table	1	○	○	○	○			1			1
Ope. room (right)	Operating Table	1	More than 10 years	●			Operating Table	1	○	○	○	○			1			1

Situation of Exsisting Equipment in Grigore Alexsandrescu Central Pediatrics Hospital							Requested Equipment of Each Dept.		Priority rules						Analysis			
Dept.	Principle Existing Equipments	Qty.	Period of use	good Condition	Out of Order	Other	Requested Equipmant	Qty.	①	②	③	④	⑤	⑥	Replac	Add.	New	Final
Ope. room							Operating Stool	2	○		○						2	2
Ope. room							Foot Stool	2	○		○						2	2
Ope. room (left)	Operating Lamp	1	More than 10 years	●			Operating Lamp	1	○	○	○	○	○		1			1
Ope. room (right)	Operating Lamp	1	21 years	●			Operating Lamp	1	○	○	○	○	○		1			1
Ope. room (left)	Anesthesia Apparatus with Ventilator	1	More than 10 years	●			Anesthesia Apparatus with Ventilator	1	○	○	○	○	○		1			1
Ope. room (right)	Anesthesia Apparatus with Ventilator	1	26 years	●			Anesthesia Apparatus with Ventilator	1	○	○	○	○	○		1			1
Ope. room	Endotracheal Set	2	More than 5 years	●			Endotracheal Set	2	○	○	○			○	2			2
Ope. room	Stretcher	2	More than 10 years	●			Stretcher	4	○	○				○	2			2
Ope. room		2	More than 5 years	●			Suction Unit	2	○	○	○				2			2
Ope. room (left)	Patient Monitor	1	More than 10 years	●			Patient Monitor	1	○	○	○	○	○		1			1
Ope. room							Patient Monitor	1	○		○	○	○	○		1		1
Ope. room							Pulse Oximeter	2	○		○	○	○				2	2
Ope. room	Instrument Cart	4	More than 10 years	●			Instrument Cart	4	○	○				○	4			4
Ope. room							Electro Cautery	2	○		○	○	○				2	2
(Sterilizer room)	Hot Air Sterilizer		More than 10 years	●			Hot Air Sterilizer	1	○		○	○			1			1
(Sterilizer room)	Autoclave		More than 10 years	●			Autoclave	1	○	○	○	○			1			1
(Sterilizer room)							Dressing Container	6	○	○				○	5			5
Ope. room							Kick Bucket	4	○		○						4	4
(Sterilizer room)							Scrub Unit	3	○		○	○			1			1
ICU New Construction(NICU)							Infant Incubator	10	○		○	○	○				10	10
(Medicine ICU)	Infant Incubator	1		●			Infant Incubator	5	○	○	○		○	○	2	3		5
New Construction(NICU)							Transport Incubator	2	○		○	○	○				2	2
New Construction(NICU)							Infant Care Unit	2	○		○	○	○				2	2
(Medicine ICU)							Infant Care Unit	1	○		○	○	○				1	1
New Construction(NICU)							Phototherapy Unit	2	○		○	○					2	2
New Construction(NICU)							Oxgen Head Box for Infant	6	○		○	○					6	6
(Medicine ICU)							Oxgen Head Box for Infant	4	○		○	○					4	4
New Construction(NICU)							Patient Monitor for Pediatric	10	○		○	○	○				10	10
(Surgery ICU)							Pulse Oximeter	5	○		○	○	○				5	5
New Construction(NICU)							Pulse Oximeter	5	○		○	○	○				5	5
New Construction(NICU)							Syringe Infusion Pump	10	○		○	○	○				10	10
(Medicine ICU)							Infusion Pump	5	○		○	○	○				5	5
(Surgery ICU)							Infusion Pump	5	○		○	○	○				5	5
New Construction(NICU)							Infant Ventilator	3	○		○	○	○				3	3
New Construction(NICU)							Resuscitator, Ambu	3	○		○	○	○				3	3
(Surgery ICU)							Resuscitator, Ambu	3	○		○	○	○				3	3
(Medicine ICU)							Resuscitator, Ambu	2	○		○	○	○				2	2
(Medicine ICU)	Ultrasonic Nebulizer	1		●			Ultrasonic Nebulizer	3	○	○	○	○	○		1	2		3
New Construction(NICU)							Ultrasonic Nebulizer	2									2	2
New Construction(NICU)							Infant Scale	1	○		○	○	○				1	1
(Medicine ICU)	Infant Scale	1					Infant Scale	1	○	○					1			1
New Construction(NICU)							Infant Bassinet Stand	2	○								2	2
(Medicine ICU)							Infant Bassinet Stand	2	○								2	2
(Surgery ICU)							Diagnostic Set	1	○		○						1	1
(Medicine ICU)							Diagnostic Set	1	○		○						1	1
New Construction(NICU)							Examination Light	1	○		○		○				1	1
(Medicine ICU)							Examination Light	1	○		○		○				1	1
(Surgery ICU)							Examination Light	1	○		○		○				1	1
New Construction(NICU)							Laryngoscope	2	○		○	○					2	2
(Surgery ICU)							Laryngoscope	2	○		○	○					2	2
New Construction(NICU)							Sphygmomanometer W/3 Sizes of Cuff	2	○		○						2	2
(Medicine ICU)							Sphygmomanometer W/3 Sizes of Cuff	1	○		○						1	1

Situation of Exsisting Equipment in Grigore Alexsandrescu Central Pediatrics Hospital						
Dept.	Principle Existing Equipments	Qty.	Period of use	good Condition	Out of Order	Other
(Surgery ICU)						
New Construction(NICU)						
New Construction(NICU)						
New Construction(NICU)						
New Construction(NICU)						
New Construction(NICU)						
(Surgery ICU)						
New Construction(NICU)						
(Surgery ICU)						
New Construction(NICU)						
(Surgery ICU)						
New Construction(NICU)						
(Surgery ICU)						
(Medicine ICU)						
New Construction(NICU)						
New Construction(NICU)						
New Construction(NICU)						
New Construction(NICU)						
(Medicine ICU)						
(Surgery ICU)						
(Medicine ICU)						
New Construction(NICU)						
Radiology	X-ray Unit Fluoroscopy	1	More than 10 years	●	●	Fluoroscopic
	Ultrasound Apparatus Color Doppler	1	18 years		●	
Laboratory						
Blood analysis room	Blood Cell Counter	1	3 years	●		Donation from Sewiss
Blood analysis room	Spectrophotometer	1	More than 10 years		●	
Blood analysis room	Centrifuge Table Top	1	More than 5 years	●		
Blood analysis room	Electrophoresis Apparatus	1	More than 10 years	●		
	Densitometer	1	More than 10 years	●		
Blood analysis room	Binocular Microscope	1	More than 10 years	●		
Blood analysis room	Binocular Microscope	1	More than 10 years	●		
Blood analysis room	Binocular Microscope	1	More than 10 years		●	
Blood analysis room	Binocular Microscope	1	More than 10 years	●		
Blood analysis room	Water Distiller	1	More than 5 years	●		
Bacteriology	Incubator	1		●		
Blood analysis room	Hot Air Sterilizer	1	More than 10 years		●	
Bacteriology	Autoclave Vertical Type	1	More than 10 years	●		
Blood analysis room	Medical Refrigerator (familybtype)	1	More than 5 years	●		

Requested Equipment of Each Dept.		Priority rules						Analysis			
Requested Equipmant	Qty.	①	②	③	④	⑤	⑥	Replac	Add.	New	Final
Sphygmomanometer W/3 Sizes of Cuff	1	○		○						1	1
Stethoscope For New Born	5	○		○	○	○				4	4
Iv Stand	20	○		○	○					10	10
Hot Air Sterilizer	1	○		○	○					1	1
Autoclave	1	○		○	○					1	1
Instrument Cabinet	1	○		○		○				1	1
Instrument Cabinet	1	○		○		○				1	1
Instrument Cart	1	○		○	○					1	1
Instrument Cart	1	○		○	○					1	1
Medical Refrigerator	1	○		○	○					1	1
Medical Refrigerator	1	○		○	○					1	1
X-ray Film Illuminator	1	○		○	○	○				1	1
X-ray Film Illuminator	1	○		○	○	○				1	1
X-ray Film Illuminator	1	○		○	○	○				1	1
Blood Gas Analyzer	1	○		○	○	○	○		1		1
Hematocrit Centrifuge	1	○		○	○					1	1
Bilirubin Meter	1	○		○	○	○				1	1
Nursing Bottle Warmer	1	○		○	○	○				1	1
Nursing Bottle Warmer	1	○		○	○	○				1	1
Suction Unit	2	○		○						2	2
Suction Unit	2	○		○						2	2
Suction Unit	2	○		○						2	2
X-ray Unit Fluoroscopy	1	○	○	○	○	○		1			1
Ultrasound Apparatus Color Doppler	1	○	○	○	○	○		1			1
Automatic X-ray Film Developer	1	○		○	○	○	○		1		1
Electrolyte Analyzer	1	○		○	○	○	○			1	1
Blood Cell Counter	1	○		○	○	○	○		1		1
Spectrophotometer	1	○	○	○	○	○		1			1
Coagulometer	1	○		○	○	○				1	1
Centrifuge Table Top	2	○	○	○	○			2			2
Electrophoresis Apparatus	1	○	○	○	○	○		1			1
Densitometer	1	○	○	○	○			1			1
Stirrer	2	○		○	○					2	2
Mixer	2	○		○	○					2	2
Water Bath	2	○		○						2	2
Binocular Microscope	1	○	○	○	○			1			1
Binocular Microscope	1	○	○	○	○			1			1
Binocular Microscope	1	○	○	○	○			1			1
Binocular Microscope	1	○	○	○	○			1			1
Trinocular Microscope For Education	1	○	○	○	○			1			1
Water Distiller	2	○	○	○	○			1	1		2
Incubator	1	○	○	○				1			1
Hot Air Sterilizer	1	○	○	○	○			1			1
Autoclave Vertical Type	1	○	○	○	○	○		1			1
Medical Refrigerator	1	○	○	○	○			1			1
Deep Freezer	1	○		○	○	○				1	1
CO2 Incubator	1	○		○	○	○				1	1
Hematocrit Centrifuge	1	○		○	○					1	1

Situation of Exsisting Equipment in Grigore Alexsandrescu Central Pediatrics Hospital							Requested Equipment of Each Dept.		Priority rules						Analysis			
Dept.	Principle Existing Equipments	Qty.	Period of use	good Condition	Out of Order	Other	Requested Equipmant	Qty.	①	②	③	④	⑤	⑥	Replac	Add.	New	Final
Endoscope							Gastrointestinal Fiberscope for Child	1	○		○	○	○				1	1
Present 6 Floor after instooled equipment move to 5F							Colonofiberscope for Child	1	○		○	○					1	1
							Universal Light Source	1	○		○		○				1	1
							Endoscopic Suction Unit	1	○		○	○	○				1	1
	Examination Table	1	old	●			Examination Table	1	○	○				○	1			1
							Cabinet For Fiberscope	1	○		○	○	○				1	1
							Disinfection Trolley	1	○		○	○					1	1
							Ultrasonic Cleaner	1	○		○	○	○				1	1
Urology							Urethoroscope for Pediatric w/ Light Source	1	○		○	○	○	○		1		1
	Hemodialysis Apparatus	1	10 years		●		Hemodialysis Apparatus	2	○	○	○	○	○		2			2
	Water Treatment System	1	10 years	●			Water Treatment System	1	○	○	○	○	○		2			2
	Suction Unit	1	2 years	●			Suction Unit	1	○		○			○		1		1

(2) Equipment Plan

Emergency Care Ward of Emergency Hospital (Floreasca)

Imaging diagnostics section

X-ray television system

Present state:

The existing system, which was donated from Switzerland, is broken down, and it is not repairable. Also, the general radiography apparatus is not in operation and in need of repair. As emergency measures, patients are radiographed in the old building of the hospital, or patients are radiographed on the table of the broken general radiography apparatus by using a mobile type X-ray apparatus.

Plan:

Radiography is essential for the emergency department to diagnose a lot of patients with injuries such as bone fractures. Therefore, these items are renewed or replaced with a new X-ray television system which includes a function of general radiography.

Automatic film developer

Present state:

The condition of the existing X-ray apparatus is as described above. The films being developed daily are managed manually.

Plan:

With the renewal of the X-ray television system, the number of films to be developed daily is expected to increase to about 300 (i.e., more than 8,000 films/month). Therefore, an automatic film developer which can handle such numbers of films daily is planned to be installed in the existing dark room. This film developer can be also used for developing films that are taken with an angiographic apparatus which will be installed in the emergency ward as an independent donation from Japan.

Ultrasound diagnostic system (with color doppler)

Present state:

Three sets of ultrasound diagnostic systems are used for diagnoses: two in the ultrasound diagnostic room, which is located on the basement

floor, and one in the ICU room. One set installed in the ultrasound diagnostic room is new and in good condition, but the other two are quite old, especially the one in the ICU room. At present, about 42 patients are examined with these ultrasound diagnostic systems daily, so renewal is necessary.

Plan:

The ultrasound diagnostic system in the ICU room, which is severely worn out, is renewed with an additional function of color doppler for use in thoracotomy.

Endoscope

Present state:

The hospital owns two endoscopes for the upper alimentary canal (more than five years old) and one for the lower alimentary canal (also more than five years old). About 15 examinations are performed with these endoscopes daily. However, the one for the lower alimentary canal is damaged and not repairable. Moreover, these endoscopes do not have any optional attachments which can be used for treatment.

Plan:

To improve the diagnostic and treatment functions, one endoscope for the stomach, another one for the duodenum, and yet another for the rectum are planned for procurement together with a light source device, two electrocautery sets, and a video camera set. In addition, a sterilization trolley, an ultrasound cleaner, and a fiberscope cabinet are planned for procurement for disinfecting and storing the endoscopes.

ICU section

Central monitor and patient monitors

Present state:

The ICU room, which will be improved on this project, are sectioned in seven areas, and there are a total of 33 beds. At present, a total of 25 patient monitors are used. Except the four patient monitors which are connected to the central monitor, the other patient monitors are in deterioration. On an assumption that new patient monitors be

providedon this project, the hospital plans to take these four patient monitors including the central monitor to the CCU, which is now under renovation in the old building of the hospital.

Plan:

On the basis of what was discussed with the hospital, a system is planned to enable the monitoring of the seriously ill patients who are laid on the 14 beds placed in two areas of the ICU room. With this system, these patients are monitored simultaneously at the nurse station. For the remaining 19 beds, an independent type bed-side monitor is planned for each bed. Functionally, this item should possess a capacity to measure basic physiological parameters that are essential for patient monitoring in intensive care. Though the hospital requested a model which could measure many parameters for the 14 beds which are used for seriously ill patients, such a model will not be specified for this item because the study team considers that the present organization and technical level of the ICU staff do not prove the necessity of such a sophisticated model. On this background, it is preferable that this item be a modular type so that the hospital can procure, with its own budget in the future, an appropriate module to enable measurement of additional parameters. Thus, the system for monitoring seriously ill patients shall comprise modular type physiological signal amplifiers, which are extendable with the addition of further modules.

Artificial respirator

Present state:

There are eight artificial respirators. Three of them are more than ten years old and dilapidated. One unit of the remaining five is planned to be transferred to the CCU, which is located in the old building of the hospital.

Plan:

One artificial respirator is appropriate for each of the 14 beds used for seriously ill patients, and one artificial respirator for every three beds of the remaining 19 beds. Therefore, a total of 20 artificial respirators are needed, so 15 respirators are planned for procurement to supplement

the existing respirators.

Defibrillator

Present state:

There are four artificial defibrillators. Only one of them is relatively new, but this relatively new unit is planned to be transferred to the CCU in the old building.

Plan:

Two defibrillators are considered appropriate for this ICU room (one unit for seriously ill patients and the other unit for common use). Therefore, the two existing units, which are old, will be renewed on this project.

Operation rooms

Anesthesia apparatus, electrosurgical device, and aspirator

Present state:

Although there are six operation rooms, only operating lights and an operating microscope for orthopedics (which is damaged and in need of repair) are available. At present, the operation rooms of the old building, which are used for plastic surgery and cardiac surgery are being renovated, so the operation rooms of the emergency department are used temporarily to perform operations in all these specialties.

Plan:

At least, an anesthesia apparatus, an electrosurgical device, and an aspirator, which are essential for performing operations, will be procured to make all the six operation rooms of the emergency department operational.

Arthroscope

Present state:

The hospital is now using an arthroscope on trial because the manufacturer of this arthroscope has asked the hospital to prove the product as a reliable medical device so that the manufacturer can apply for an official registration (a system similar to the Pharmaceutical Affairs

Law of Japan). This arthroscope must be returned to the manufacturer after collecting enough data for the registration.

Plan:

The staff is familiar with this item, so the procurement of an arthroscope will surely improve the quality of orthopedic treatments.

Operation X-ray system

Present state:

There is an operation X-ray system, which was donated secondhand a few years ago, but it is broken down.

Plan:

This item is essential for surgical operations, so it will be replaced with a mobile type on this project.

Otorhinology equipment

Rhinolaryngoscope, bronchoscope, and endoscopic video system

Present state:

The hospital diagnoses about 6,000 patients with otorhinolaryngological diseases annually. However, it does not have an rhinolaryngoscope. Moreover, the bronchoscope, which was donated secondhand some time ago and are more than 15 years old, is now broken and not repairable. Therefore, the hospital now has a difficulty in diagnosing and treating patients.

Plan:

A rhinolaryngoscope, a bronchoscope and an endoscopic video system are introduced on this project to improve the functions of the hospital for the purpose of providing better services to the patients.

Carbon dioxide laser apparatus

Present state:

Only two medical facilities own carbon dioxide laser apparatus in Romania (Otorhinology Research Center and Glebevia Hospital). Emergency Hospital (Floreasca) receives three to four patients daily who

require such treatments as to be performed by a carbon dioxide laser apparatus. As the hospital does not have any kind of carbon dioxide laser apparatus, such patients are treated in an old procedure. This condition is burdensome to the patients as well as to the hospital.

Plan:

This item will be introduced on this project to improve the functions of the hospital for the purpose of providing better services to the patients.

Audiometer

Present state:

The hospital does not have an audiometer, so when it is necessary to conduct an examination which requires use of an audiometer, the patient is sent to another hospital. However, the hospital has obtained secondhand a unit of silent room for installation of an audiometer.

Plan:

This item will be introduced on this project to improve the diagnostic function of the hospital. It is a basic medical equipment which can diagnose the degree of hypacusia, which affects patients with head injuries.

Equipment for operation rooms of otorhinology and ophthalmology

Operation microscope for otorhinology and ophthalmology

Present state:

More than 1,000 otorhinological operations and about 400 ~ 500 ophthalmological operations are performed annually. These operations are performed with the existing old operation microscope. However, as this microscope is dilapidated, the positioning of the microscope is very difficult. This condition is an impediment to surgical operations.

Plan:

An operation microscope for otorhinology and ophthalmology will be procured on this project to solve this problem.

Crystalline lens operating device

Present state:

This item generates relatively low frequency ultrasound waves to emulsify the crystalline lens which is affected by cataract and sucks the emulsified lens. There are a lot of patients with cataract, and many operations are performed annually. As the hospital lacks this item of medical equipment, the success of such operations now depend upon the doctor's skill and experience.

Plan:

The procurement of this item on this project simplifies the operations performed on patients with cataract and also saves time spent for the operations.

Slit lamp

Present state:

The hospital examined about 10,000 patients in 1995, about 9,000 patients in 1996, and about 8,000 patients in 1997 with the two existing slit lamps. However, these slit lamps are more than ten years old and dilapidated, so a lot of time is required for performing each examination. As a result, some patients who cannot be examined within the capacity of this hospital are referred to other hospitals.

Plan:

One slit lamp will be procured on the project to renew the existing equipment. This will improve the diagnostic services of the hospital and will shorten the waiting time for patients.

Yag laser apparatus

Present state:

The hospital has a doctor who is capable of operating a Yag laser apparatus. However, the hospital does not have this item at present, so the patients who need treatments with a laser apparatus are transferred to another hospital. Without this item, the medical services of the hospital are insufficient.