2-3 Basic Design

2-3-1 Design Concept

(1) Concept for Natural Conditions

The summer in Bishkek is easy to spend because of low humidity, though relative humidity of winter is comparatively high though precipitation is small. Therefore, the damp-proof is to be considered on selection of the equipment.

(2) Concept for Social Conditions

Special attention should be paid to the selection of equipment consisting with MANAS Program and Know-how project. Concerning of the specification of the ambulance cars procured Special consideration should be given in consideration of condition of Bishkek Ambulance Center.

(3) Concept for Procurement in Third Countries

In principle, all of equipment covered by this project are to be procured in Japan. It will be given priority to procurement in third countries in the case of advantage to keep after-sales service and to procure spare parts and consumables.

(4) Concept for the Capability for Maintenance and Management by Implementing Organization

As it will be difficult for the medical institutions concerned to maintain, manage and repair relatively new types of equipment, equipment for which manufacturers' local distributors have well-organized service systems should be chosen. In principle, manufacturers' local distributors should be those operating in Central Asian countries, including Kyrgyz or Moscow.

(5) Concept for the Range of Equipment to Be Procured and Their Grading

The most of equipment requested are not required to operate new technology and easy for medical staff of the institutions to operate, maintain and manage. However, the following design conditions should be applied to certain types of equipment.

1) For the purpose of minimizing the maintenance and management cost, priority should be given to certain equipment which require a minimum consumables.

2) In the case of equipment which require routine or periodical maintenance and require reagents and consumables, priority should be given to those of which manufacturers have distributors in Kyrgyz, other Central Asian countries and Russia.

(6) Concept for Consumables and Spare Parts

It was confirmed during the field survey that the medical institutions concerned will be able to operate and maintain the equipment procured effectively and efficiently. In light of the economic conditions and the health care reform in the country, however, at least about a year's worth of replacement parts and consumables should be procured. Reagents which cannot be stored for a

long time and consumables procured easily by the medical institutions concerned (X-ray films, for example) should be excluded from this project.

(7) Concept for the Term of Work

In principle, this project should be completed within a fiscal year.

2-3-2 Basic Design

(1) Plan

1) Estimated Beneficiary Population

As shown in the following table, it is appropriate to consider the city of Bishkek's estimated beneficiary population as the city's service population (Ministry of Home Affairs), which includes political refugees and migrants from rural areas.

Estimated statistics 1998~2006

No.		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
1	Population of Kyrgyz (Statistics Committee) ｷﾙｷﾞｽ国人口（統計委員会）	4,634.9	4,696.5	4,759.0	4,822.3	4,886.4	4,951.4	5,017.3	5,084.0	5,151.6	5,220.1
2	Population of Bishkek City (Statistics Committee) ﾋﾞｼｭｹｸ市人口（統計委員会）	600.9	622.8	645.5	669.0	693.3	718.6	744.7	771.8	799.0	829.0
3	Registered Population to Policlinic 総合外来病院登録人口	713.4	729.5	746.0	762.8	780.1	797.7	815.7	834.2	853.0	872.3
4	Service Population (Home Affair) ｻｰﾋﾞｽ人口（内務省）	963.4	979.5	995.9	1,012.5	1,029.4	1,046.6	1,064.1	1,081.8	1,099.9	1,118.3
5	Calling for Ambulance center 救急車要請回数	146,882	149,500	152,930	156,374	144,319	147,575	150,905	145,985	149,275	152,653
6	Calling / 100,000 residents by Policlinic 要請回数 / 10万人	20,589	20,500	20,500	20,500	18,500	18,500	18,500	17,500	17,500	17,500
7	Dispatching of team* 救急車出動回数	133,435	134,550	137,637	140,700	129,886	132,817	135,814	131,386	134,347	137,387

人口 Population (1,000)

1 (想定成長率 Growth rate : 1.33%)

2 (想定成長率 Growth rate : 3.64%)

3 (想定成長率 Growth rate : 2.26%)

4 (想定成長率 Growth rate : 1.67%)

* 出動回数 / 要請回数を1998年以降90%に想定

* Dispatcing / Calling = 90% since 1998

2) Calculation of the Number of Ambulance Cars

It is expected that the present emergency medical care system will be maintained until 2001 when a referral system will be established following the establishment of a home doctor system and a fee-charging health care system will be initiated.

①It is necessary to secure a minimum necessary number of ambulance cars that enable the emergency medical teams to reach the site without delay in May to June 2000, when the ambulance cars procured under this project will be brought into use.

②As ambulance cars are to be maintained in accordance with the regulation stipulating periodical

examination every 14 days. The minimum necessary number of ambulance cars is calculated using a formula of the number of medical teams x (1 + 1/4).

③As stated earlier, ambulance cars are replaced gradually in consideration of total mileage and service life (see the ambulance car discarding plan).

④On the assumption that the service life of the each ambulance cars procured under this project will be five years, it is necessary to determine the number of ambulance cars to be procured for number of medical teams estimated at the beginning of 2005.

⑤It is expected that the actual population of Bishkek will exceed 1,000,000 in 2004. That is almost the same size as Hiroshima City. Exhibit 3 shows a comparison between Kyrgyz and Japan in terms of the ambulance car. As is clear from the table, the necessary number may well be 27 + 2 adapting to Hiroshima.

⑥A comparison of the results of analysis of the seriousness by disease of emergency care between Kyrgyz and Japan in 1997 shows no significant difference in terms of ratio.(See Exhibit 4)

But while the number of emergency cases (for every 1,000 residents) taken to hospitals in ambulances in Kyrgyz is about twice as large as in Japan, the number of ambulance car dispatches in Kyrgyz is five to seven times larger than in Japan. This means that present emergency medical care system in Kyrgyz places considerable emphasis on home care by the medical teams. It is expected that the number of ambulance car dispatched will decrease considerably if a home doctor system is established. Judging from the number of emergency cases taken to hospitals, however, it can be said that the number of ambulance cars is still not sufficient by the Japanese standard.

Table: 3-3-2b Annual Number of Ambulance Car Dispatched and Seriousness of Emergency Cases (1997)

	Ⅰ: Primary emergency cases	Ⅱ: Secondary emergency cases	Ⅲ: Tertiary emergency cases	Total
Bishkek	30.10%	57.39%	12.53%	100%
Toyama	39.0%	44.0%	14.0%	97%

Ⅰ: Primary emergency cases who may be observed for the time being and therefore do not require emergency medical care (Toyama: Slight injuries and slight illness which can be treated at the outpatient department)

Ⅱ: Secondary emergency cases, some of whom may require emergency medical care (Toyama: hospitalization)

Ⅲ: Tertiary emergency cases who require immediate transportation to hospitals and medical treatment (Toyama: serious injuries, serious illness)

Table 3-3-2c:Annual Number of Emergency Cases Taken to Hospitals in Ambulance Cars (For every 1,000 residents) (1997)

	Bishkek	Hiroshima	Toyama
No. of ambulance car dispatches/1,000 residents	152.4	25.5	20.4
No. of emergency cases taken to hospitals in ambulance cars/1,000 residents	42.0	23.1	20.0

⑦In consideration with the decreasing of medical teams and discarding plan of ambulance cars, the minimum necessary number of ambulance cars to be procured in 2,000 will be 23 to keep 25 ambulance cars serviceable in the beginning of 2005.

Discarding plan and Necessary number of Ambulance car

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
No. of car procured by Japanese aid			23							
No. of Registered car in previous year	51	46	38	49	44	41	38	31	25	20
No. of Scrapped car in previous year	5	8	12	5	3	3	7	6	1	1
No. of Scrapped car procured by Japanese aid in previous year									4	
No. of Registered Ambulance car in Jan.	46	38	49	44	41	38	31	25	20	19
No. of car be necessary in min.	39	39	39	35	30	28	25	25	25	25
No. of surplus car	0	-1	10	9	9	10	6	0	-5	-6
No. of Medical team of Ambulance C.	36	36	36	32	28	26	23	23	23	23

Since all the 23 ambulance cars are to be procured at a time within a fiscal year, not divided according to discarding plan of existing ambulance cars year by year, there may be a temporary oversupply. It is possible to expand the serviceable term and discarding time of cars, in accordance with the decreasing of mileage a year of cars because of efficient management by using of surplus cars. Therefore, it is possible to change the discarding plan of cars in 2003 to 2005 as following table and to decrease the number of cars procured from 23 to 20 under the project.

Re-examination of dicarding plan of Ambulance car

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
No. of car procured by Japanese aid			20							
No. of Registered car in previous year	51	46	38	46	41	38	35	30	25	17
No. of Scrapped car in previous year	5	8	12	5	3	3	5	5	4	1
No. of Scrapped car procured by Japanese aid in previous year									4	
No. of Registered Ambulance car in Jan.	46	38	46	41	38	35	30	25	17	16
No. of car be necessary in min.	39	39	39	35	30	28	25	25	25	25
No. of surplus car	0	-1	7	6	8	7	5	0	-8	-9
No. of Medical team of Ambulance C.	36	36	36	32	28	26	23	23	23	23

As is clear from the above descriptions, it judged to be desirable that the number of ambulance cars to be procured under this project be 20.

3) Criteria for Selection of Items of Equipment

As a result of field survey of the requested equipment, the following can be said about "the principle of priority to basic items and the principle of deletion."

①Almost all of the existing equipment have become superannuated and they have to be replaced or to be replenished.
②They are indispensable in providing basic medical care.
③They are very useful and highly cost-effective.
④The medical serviceableness of the requested equipment has been established.
⑤The functions of the requested equipment are consistent with the social positioning of the medical institutions concerned and can be utilized in association with other donors.
⑥The requested equipment include no equipment for use in scientific research only.
⑦The requested equipment do not include they produce environmental pollution.
⑧The requested equipment do not include that be used for purposes other than medical care.
⑨The requested equipment required advanced medical skills do not include that cannot be maintained with the present technical level of their users.
⑩The requested equipment do not include that require large-scale infrastructure development for their installation.

The requested equipment are to be evaluated under the following conditions.

a. Classification of the requested equipment

Replacement: replacement of the existing equipment

Replenishment: replenishment of the existing equipment

New purchase: newly procurement

b. Relationship with the emergency medical care service

◎ Indispensable equipment for emergency medical care service

○ Basic equipment used in hospitals but used to support emergency medical care

c. Matters for evaluation:

①Necessity

○ Equipment be replaced, replenished or newly procured under this project

× Equipment not urgently needed, not expected to be helpful, can be procured by Kyrgyz side, still remain serviceable, functions can be performed by other equipment

②Technical level

○ Equipment consistent with the present technical level of medical professionals

△ Equipment consistent with the present technical level of their users but require careful training at the time of procurement

③Equipment maintenance and management system

○ Equipment with no particular problem of maintenance and management

△ Equipment entailing relatively high maintenance and management cost but operable by the medical institutions concerned on their own.

× Equipment entailing high maintenance and management cost or are hard to maintain and manage

d, Overall evaluation

○ Equipment judged to be procured under this project

× Equipment judged to be excluded from this project

The following table shows the results of the examination of the requested equipment.

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

I. Bishkek Ambulance Center

NO.	NAME OF EQUIPMENT	REQ. QT'Y	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QT'Y OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
I-1	Ambulance Car	20	REPLACEM.	◎	○	○	○	○	20	
I-2	Portable Defibrillator	20	REPLACEM.	◎	○	○	○	○	10	
I-3	Electrocardiograph	20	REPLACEM.	◎	○	○	○	○	10	
I-4	Electrical Suction Unit	20	REPLACEM.	○	○	○	○	○	10	
I-5	Intubation Set	20	REPLACEM.	◎	○	○	○	○	10	
I-6	Steam Sterilizer	1	REPLACEM.	○	○	○	○	○	1	
I-7	Communication Device	1	REPLACEM.	◎	○	○	○	○	1	
I-8	Charge Device for Battery	3	REPLENISH.	○	×	○	○	×	0	The car will be equipped with similar device.
I-9	Mobile Artificial Respiration Apparatus	20	REPLENISH.	◎	○	○	○	○	10	
I-10	Ambu Bag for Children	12	REPLENISH.	◎	○	○	○	○	6	
I-11	Ambu Bag for Adults	30	REPLENISH.	◎	○	○	○	○	14	
I-12	Glucose Analyzer	12	NEW PURCH.	○	○	○	△	○	5	
I-13	Sphygmomanometer for Children	12	REPLACEM.	○	○	○	○	○	6	
I-14	Sphygmomanometer for Adult	30	REPLACEM.	○	○	○	○	○	14	
I-15	Bag for Drugs	40	REPLACEM.	○	×	○	○	×	0	Existing equipment still remain serviceable.
I-16	Spare Parts for Existing Ambulance Car	1	REPLENISH.	○	×	○	○	×	0	Could be procured by Kyrgyz side.

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

II. National Surgical Center

NO.	NAME OF EQUIPMENT	REQ. QTY	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QTY OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
	1. Operating Room and Sterilization									
II-1-1	Electro-Surgical Unit	6	REPLACEM.	◎	○	○	○	○	6	
II-1-2	Electric Suction Unit	6	REPLACEM.	◎	○	○	○	○	6	
II-1-3	Operating Table	6	REPLACEM.	◎	○	○	○	○	6	
II-1-4	Operating Light	6	REPLACEM.	◎	○	○	○	○	6	
II-1-5	Operating Light/Stand Type	3	REPLACEM.	◎	○	○	○	○	3	
II-1-6	Anesthesia Apparatus w/Ventilator	6	REPLACEM.	◎	○	○	○	○	6	
II-1-7	Patient Monitor	3	NEW PURCH.	◎	○	○	○	○	3	
II-1-8	Defibrillator	3	REPLENISH.	◎	○	○	○	○	3	
II-1-9	Pulse Oximeter	3	NEW PURCH.	○	×	○	○	×	0	Function could be performed by other equipment.
II-1-10	Film Illuminator	6	REPLACEM.	○	○	○	○	○	6	
II-1-11	C-arm X-ray TV System	1	REPLACEM.	○	○	○	△	○	1	
II-1-12	Ambu Bag/Laryngoscope	3	REPLENISH.	◎	○	○	○	○	3	
II-1-13	Steam Sterilizer	2	REPLACEM.	○	○	○	○	○	2	
II-1-14	Operating Instrument Set	6	REPLENISH.	○	○	○	○	×	0	Existing equip. still remain serviceable. Could be procured by Kyrgyz side
II-1-15	Common Surgery Instrument Set	6	REPLENISH.	○	○	○	○	×	0	Ditto
II-1-16	Stainless Instrument	6	REPLENISH.	○	×	○	○	×	0	Ditto
	2. ICU									
II-2-1	Defibrillator	1	REPLENISH.	◎	○	○	○	○	1	
II-2-2	Bedside Monitor	6	NEW PURCH.	◎	○	○	○	○	6	

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

NO.	NAME OF EQUIPMENT	REQ. QT'Y	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QT'Y OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
II-2-3	Ventilator	6	REPLACEM.	◎	○	○	△	○	6	
II-2-4	Sphygmomanometer	12	REPLACEM.	◎	○	○	○	○	12	
II-2-5	Automatic Resuscitator	1	REPLENISH.	○	×	○	○	×	0	Function could be performed by other equipment.
II-2-6	Low Pressure Cont. Suction Unit	12	NEW PURCH.	◎	○	○	○	○	6	
II-2-7	Ultrasonic Nebulizer	1	NEW PURCH.	○	×	○	○	×	0	Low necessity.
II-2-8	Oxygen Tent	1	NEW PURCH.	◎	○	○	○	○	1	
II-2-9	Ambu Bag/Laryngoscope	3	REPLENISH.	◎	○	○	○	○	3	
II-2-10	Blood Gas Analyzer	1	REPLACEM.	◎	○	○	△	○	1	
II-2-11	Coagulometer	1	NEW PURCH.	○	○	○	△	○	1	
	3. Endoscopy-Abdominal & Others									
II-3-1	Bronchoscope/Flexible	1	NEW PURCH.	○	○	○	○	○	1	
II-3-2	Gastrointestinal Fiberscope	1	NEW PURCH.	○	○	○	○	○	1	
II-3-3	Halogen Light Source	2	REPLENISH.	○	○	○	○	○	2	
II-3-4	Endoscopic Suction Pump	2	REPLENISH.	○	○	○	○	○	2	
II-3-5	Endoscopic Trolley	2	REPLENISH.	○	○	○	○	○	2	
II-3-6	Thoracoscope	1	NEW PURCH.	○	○	○	○	○	1	
II-3-7	Cabinet for Endoscope	1	REPLENISH.	○	○	○	○	○	1	
II-3-8	Ultrasound Scanner	1	REPLENISH.	○	○	○	○	○	1	
	4. Basic Essential Equipment/Common Use									
II-4-1	Height Measuring Rod	1	REPLACEM.	○	○	○	○	○	1	
II-4-2	Weighing Scale	1	REPLACEM.	○	○	○	○	○	1	

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

NO.	NAME OF EQUIPMENT	REQ. QTY	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QTY OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
II-4-3	Stethoscope	15	REPLACEM.	◎	○	○	○	○	15	
II-4-4	Sphygmomanometer	30	REPLACEM.	◎	○	○	○	○	0	Function could be performed by other equipment.
II-4-5	Diagnostic Set	2	REPLACEM.	◎	○	○	○	○	2	
II-4-6	Clinical Thermometer	30	REPLACEM.	◎	○	○	○	○	2	2 sets of 20 units
II-4-7	Laryngoscope	16	REPLACEM.	◎	×	○	○	×	0	Function could be performed by other equipment.
II-4-8	Small Operating Instrument Set	2	REPLACEM.	◎	○	○	○	○	2	
II-4-9	Operating Instrument Set	2	REPLACEM.	◎	×	○	○	×	0	Existing equip. still remain serviceable. Could be procured by Kyrgyz side
II-4-10	Boiling Sterilizer	4	REPLACEM.	○	○	○	○	○	4	
II-4-11	Instrument Sterilizing Case	14	REPLACEM.	○	○	○	○	○	14	
II-4-12	Dressing Jar with Stand	8	REPLACEM.	○	○	○	○	○	8	
II-4-13	Stretcher	7	REPLACEM.	○	○	○	○	○	7	
II-4-14	Instrument Table	8	REPLACEM.	○	○	○	○	○	8	
II-4-15	Instrument Carriage	8	REPLACEM.	○	○	○	○	○	8	
II-4-16	Emergency Cart	3	REPLACEM.	◎	○	○	○	○	3	
II-4-17	Mobile Stand Lamp	1	REPLACEM.	○	×	○	○	×	0	Existing equipment still remain serviceable.
II-4-18	Ambu Bag	2	REPLACEM.	◎	○	○	○	○	2	

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

III. Republican Infection Disease Hospital

NO.	NAME OF EQUIPMENT	REQ. QTY	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QTY OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
	1. Pediatric/Neonatal Reanimation									
III-1-1	Infant Incubator	3	REPLACEM.	◎	○	○	○	○	3	
III-1-2	Infant Scale	5	REPLACEM.	○	○	○	○	○	5	
III-1-3	Ultrasonic Nebulizer	5	REPLACEM.	○	○	○	○	○	5	
III-1-4	Infant Ventilator	2	REPLACEM.	◎	○	○	○	○	2	
III-1-5	Ambu Bag for Neonate and Adult	5	REPLACEM.	◎	○	○	○	○	5	
III-1-6	Neonatal Monitor	2	REPLACEM.	◎	○	○	○	○	2	
III-1-7	Syringe Pump	2	NEW PURCH.	◎	○	○	○	○	2	
III-1-8	Infusion Pump	5	REPLENISH.	◎	○	○	○	○	5	
III-1-9	Oxygen Tent	2	NEW PURCH.	◎	×	○	○	×	0	Low necessity.
III-1-10	Electrical Suction Unit	2	REPLACEM.	○	○	○	○	○	2	
III-1-11	Endotracheal Set	1	REPLENISH.	◎	○	○	○	○	1	
	2. ICU									
III-2-1	Ventilator	2	REPLACEM.	◎	○	○	○	○	2	
III-2-2	Bedside Monitor	4	REPLACEM.	◎	○	○	○	○	2	
III-2-3	Defibrillator	1	REPLACEM.	◎	○	○	○	○	1	
III-2-4	Electrocardiograph	1	REPLACEM.	◎	○	○	○	○	1	
III-2-5	Low Pressure Cont. Suction Unit	3	NEW PURCH.	◎	×	○	○	×	0	Low necessity.
III-2-6	Ultrasonic Nebulizer	2	REPLENISH.	○	○	○	○	○	2	

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

NO.	NAME OF EQUIPMENT	REQ. QT'Y	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QT'Y OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
III-2-7	Endotracheal Set	1	REPLACEM.	◎	○	○	○	○	1	
	3. X-ray Department									
III-3-1	X-ray Unit	1	REPLACEM.	◎	○	○	△	○	1	
III-3-2	X-ray Film Processor	1	REPLACEM.	○	○	○	○	○	1	
III-3-3	Film Illuminator	1	REPLACEM.	○	○	○	○	○	1	
	4. Biochemical Clinical Laboratory									
III-4-1	Blood Cell Counter	1	REPLACEM.	○	○	○	△	○	1	
III-4-2	Binocular Microscope	2	REPLACEM.	○	○	○	○	○	2	
III-4-3	Centrifuge	1	REPLACEM.	○	○	○	○	○	1	
III-4-4	K, Na, Cl Analyzer	1	REPLACEM.	○	○	○	△	○	1	
III-4-5	Glucose Analyzer	1	REPLACEM.	○	○	○	△	○	1	
III-4-6	Clinical Refractometer	1	REPLACEM.	○	○	○	○	○	1	
III-4-7	Hot Air Sterilizer	1	REPLACEM.	○	○	○	○	○	1	
III-4-8	Digital Micro Pipette Set	2	NEW PURCH.	○	×	○	○	×	0	Existing equipment still remain serviceable.
	5. Sterilizing and Others									
III-5-1	Steam Sterilizer	1	REPLACEM.	○	○	○	○	○	1	
III-5-2	Ultrasound Scanner	1	REPLACEM.	○	○	○	○	○	1	
III-5-3	Blood Gas Analyzer	1	REPLACEM.	◎	○	○	△	○	1	
	6. Basic Essential Equipment /Common Use									
III-6-1	Height Measuring Rod	1	REPLACEM.	○	×	○	○	×	0	Existing equipment still remain serviceable.

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

NO.	NAME OF EQUIPMENT	REQ. QTY	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QTY OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
III-6-2	Weighing Scale	1	REPLACEM.	○	○	○	○	○	1	
III-6-3	Stethoscope	12	REPLACEM.	◎	○	○	○	○	12	
III-6-4	Sphygmomanometer	6	REPLACEM.	◎	○	○	○	○	6	
III-6-5	Diagnostic Set	2	REPLACEM.	◎	○	○	○	○	2	
III-6-6	Clinical Thermometer	20	REPLACEM.	◎	○	○	○	○	1	1 set of 20 units
III-6-7	Laryngoscope	2	REPLACEM.	◎	○	○	○	○	2	
III-6-8	Small Operating Instrument Set	2	REPLACEM.	◎	○	○	○	○	2	
III-6-9	Operating Instrument Set	1	REPLACEM.	○	×	○	○	×	0	Low necessity.
III-6-10	Boiling Sterilizer	5	REPLACEM.	○	○	○	○	○	5	
III-6-11	Instrument Sterilizing Case	2	REPLACEM.	○	○	○	○	○	2	
III-6-12	Dressing Jar with Stand	1	REPLACEM.	○	○	○	○	○	1	
III-6-13	Stretcher	2	REPLACEM.	○	○	○	○	○	2	
III-6-14	Instrument Table	1	REPLACEM.	○	○	○	○	○	1	
III-6-15	Instrument Carriage	1	REPLACEM.	○	○	○	○	○	1	
III-6-16	Emergency Cart	1	REPLACEM.	◎	○	○	○	○	1	
III-6-17	Mobile Stand Lamp	2	REPLACEM.	○	○	○	○	○	2	

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

IV. City Hospital No.3 for Children

NO.	NAME OF EQUIPMENT	REQ. QT'Y	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QT'Y OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
	1. X-ray									
IV-1-1	X-ray Unit	1	REPLACEM.	○	○	○	△	○	1	
IV-1-2	X-ray Unit/Mobile	1	REPLACEM.	○	○	○	△	○	1	
	2. Operating Room and Sterilization									
IV-2-1	Anesthesia Apparatus w/Ventilator	4	REPLACEM.	◎	○	○	○	○	4	
IV-2-2	Defibrillator	1	REPLENISH.	◎	○	○	○	○	1	
IV-2-3	Pulse Oximeter	4	REPLENISH.	◎	○	○	○	○	4	
IV-2-4	Operating Table	6	REPLACEM.	◎	○	○	○	○	6	
IV-2-5	Hypo/Hyperthermia Unit	1	REPLACEM.	◎	○	○	○	○	1	
IV-2-6	Electro-Surgical Unit	2	REPLACEM.	◎	○	○	○	○	2	
IV-2-7	Operating Light	6	REPLACEM.	◎	○	○	○	○	6	
IV-2-8	Operating Light/Stand Type	2	REPLENISH.	◎	○	○	○	○	2	
IV-2-9	Electrical Suction Unit	2	REPLACEM.	○	○	○	○	○	2	
IV-2-10	Operating Microscope	1	NEW PURCH.	○	○	○	○	○	1	
IV-2-11	Steam Sterilizer	1	REPLACEM.	◎	○	○	○	○	1	
IV-2-12	Distillator	1	REPLENISH.	○	○	○	○	○	1	
	3. Pediatric & Others									
IV-3-1	Syringe Pump	6	NEW PURCH.	◎	○	○	○	○	6	
IV-3-2	Pediatric Surgical Incubator	2	NEW PURCH.	◎	○	○	○	○	2	It would be ordinary infant incubator.

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

NO.	NAME OF EQUIPMENT	REQ. QTY	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QTY OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
IV-3-3	Pulse Oximeter	6	REPLENISH.	◎	○	○	○	○	6	
IV-3-4	Electrical Suction Unit	4	REPLENISH.	○	○	○	○	○	4	
IV-3-5	Ventilator	2	REPLENISH.	◎	○	○	○	○	2	
IV-3-6	Blood Gas Analyzer	1	REPLACEM.	◎	○	○	△	○	1	
IV-3-7	Bedside Monitor	6	REPLENISH.	◎	○	○	○	○	6	
IV-3-8	Na,K,Cl Analyzer	1	REPLENISH.	○	○	○	△	○	1	
IV-3-9	Ultrasonic Nebulizer	7	REPLENISH.	○	○	○	○	○	7	
	4. Endoscope & Others									
IV-4-1	Rigid Respiratory Bronchoscope	1	REPLACEM.	○	○	○	○	○	1	
IV-4-2	Gastroduodeno Fiberscope	1	REPLENISH.	○	○	○	○	○	1	
IV-4-3	Halogen Light Source	1	NEW PURCH.	○	○	○	○	○	1	
IV-4-4	Endoscopic Suction Unit	1	REPLENISH.	○	○	○	○	○	1	
IV-4-5	Endoscopic Trolley	1	REPLENISH.	○	○	○	○	○	1	
IV-4-6	Endoscope Table	2	REPLENISH.	○	×	○	○	×	0	Existing equipment still remain serviceable.
IV-4-7	Cysto-Urethroscope Set	1	REPLENISH.	○	○	○	○	○	1	
IV-4-8	Halogen Light Source	1	REPLENISH.	○	○	○	○	○	1	
	5. Basic Essential Equipment /Common Use									
IV-5-1	Height Measuring Rod	1	REPLACEM.	○	×	○	○	×	0	Existing equipment still remain serviceable.
IV-5-2	Weighing Scale	5	REPLACEM.	○	○	○	○	○	4	
IV-5-3	Stethoscope	10	REPLACEM.	◎	○	○	○	○	10	

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

NO.	NAME OF EQUIPMENT	REQ. QT'Y	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QT'Y OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
IV-5-4	Sphygmomanometer	6	REPLACEM.	◎	○	○	○	○	6	
IV-5-5	Diagnostic Set	2	REPLACEM.	◎	○	○	○	○	2	
IV-5-6	Clinical Thermometer	20	REPLACEM.	◎	○	○	○	○	1	1 set of 20 units
IV-5-7	Laryngoscope	3	REPLACEM.	◎	○	○	○	○	3	
IV-5-8	Small Operating Instrument Set	6	REPLACEM.	○	○	○	○	○	6	
IV-5-9	Operating Instrument Set	8	REPLACEM.	○	×	○	○	×	0	Existing equip. still remain serviceable. Could be procured by Kyrgyz side
IV-5-10	Boiling Sterilizer	7	REPLACEM.	○	○	○	○	○	7	
IV-5-11	Instrument Sterilizing Case	8	REPLACEM.	○	○	○	○	○	8	
IV-5-12	Dressing Jar with Stand	7	REPLACEM.	○	○	○	○	○	7	
IV-5-13	Stretcher	6	REPLACEM.	○	○	○	○	○	6	
IV-5-14	Instrument Table	8	REPLACEM.	○	○	○	○	○	8	
IV-5-15	Instrument Carriage	6	REPLACEM.	○	○	○	○	○	6	
IV-5-16	Emergency Cart	2	REPLACEM.	◎	○	○	○	○	2	
IV-5-17	Mobile Stand Lamp	4	REPLACEM.	○	○	○	○	○	4	

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

V. Maternity House No.2

NO.	NAME OF EQUIPMENT	REQ. QT'Y	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QT'Y OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
	1. Reanimation									
V-1-1	Infant Incubator	6	REPLACEM.	◎	○	○	○	○	5	
V-1-2	Syringe Pump	2	REPLENISH.	◎	○	○	○	○	2	
V-1-3	Phototherapy Unit	3	REPLACEM.	◎	○	○	○	○	2	
V-1-4	Ambu Bag	3	REPLENISH.	◎	○	○	○	○	3	
V-1-5	Infant Warmer	2	REPLACEM.	◎	○	○	○	○	2	
V-1-6	Infant Ventilator	4	REPLACEM.	◎	○	○	○	○	3	
V-1-7	Automatic Resuscitator	1	NEW PURCH.	◎	×	○	○	×	0	Function could be performed by other equipment.
V-1-8	Oxygen Flowmeter	2	NEW PURCH.	○	×	○	○	×	0	Low necessity.
V-1-9	Neonatal Monitor	2	REPLACEM.	◎	○	○	○	○	2	
V-1-10	Reanimation Set	2	REPLENISH.	◎	○	○	○	○	2	
V-1-11	Ventilator	3	REPLENISH.	◎	○	○	○	○	3	
V-1-12	Bedside Monitor	2	REPLENISH.	◎	○	○	○	○	2	
V-1-13	Electrocardiograph	1	REPLACEM.	◎	○	○	○	○	1	
V-1-14	Na, K, Cl Analyzer	1	REPLACEM.	◎	○	○	△	○	1	
V-1-15	Blood Gas Analyzer	1	NEW PURCH.	◎	○	○	△	○	0	It will be difficult in the point of view of budgetary arrangement for maintenance
V-1-16	Infusion Pump	2	REPLENISH.	◎	○	○	○	○	2	
	2.Obstetrics and Gynecology									
V-2-1	Fetal Monitor	4	REPLENISH.	○	○	○	○	○	4	
V-2-2	Ultrasound Scanner	1	REPLACEM.	○	○	○	○	○	1	

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

NO.	NAME OF EQUIPMENT	REQ. QT'Y	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QT'Y OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
V-2-3	Colposcope	1	REPLACEM.	○	○	○	○	○	1	
	3. Operating Room and Sterilization									
V-3-1	Operating Instrument Set Ob/Gye	3	REPLENISH.	◎	×	○	○	×	0	Existing equip. still remain serviceable. Could be procured by Kyrgyz side
V-3-2	Anesthesia Apparatus w/ Ventilator	3	REPLACEM.	◎	○	○	○	○	3	
V-3-3	Steam Sterilizer	2	REPLACEM.	○	○	○	○	○	1	
	4. Basic Essential Equipment /Common Use									
V-4-1	Height Measuring Rod	2	REPLACEM.	○	○	○	○	○	2	
V-4-2	Weighing Scale	2	REPLACEM.	○	○	○	○	○	2	
V-4-3	Stethoscope	17	REPLACEM.	◎	○	○	○	○	17	
V-4-4	Sphygmomanometer	10	REPLACEM.	◎	○	○	○	○	10	
V-4-5	Clinical Thermometer	10	REPLACEM.	◎	×	○	○	×	0	Existing equipment still remain serviceable.
V-4-6	Laryngoscope	3	REPLACEM.	◎	○	○	○	○	3	
V-4-7	Small Operating Instrument Set	4	REPLACEM.	◎	○	○	○	○	4	
V-4-8	Boiling Sterilizer	4	REPLACEM.	○	○	○	○	○	4	
V-4-9	Instrument Sterilizing Case	6	REPLACEM.	○	○	○	○	○	6	
V-4-10	Dressing Jar with Stand	5	REPLACEM.	○	○	○	○	○	5	
V-4-11	Stretcher	2	REPLACEM.	○	○	○	○	○	2	
V-4-12	Instrument Table	2	REPLACEM.	○	○	○	○	○	2	
V-4-13	Instrument Carriage	2	REPLACEM.	○	○	○	○	○	2	
V-4-14	Emergency Cart	1	REPLACEM.	◎	○	○	○	○	1	
V-4-15	Mobile Stand Lamp	2	REPLACEM.	○	○	○	○	○	2	

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

VI. Maternity House No.4

NO.	NAME OF EQUIPMENT	REQ. QT'Y	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QT'Y OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
	1.Delivery/ Operation Room/Others									
VI-1-1	Vacuum Extractor	1	NEW PURCH.	◎	○	○	○	○	1	
VI-1-2	Electrical Suction Unit	3	REPLACEM.	○	○	○	○	○	3	
VI-1-3	Fetal Monitor	3	REPLACEM.	◎	○	○	○	○	3	
VI-1-4	Neonatal Monitor	2	REPLENISH.	◎	○	○	○	○	2	
VI-1-5	Infant Scale	2	REPLACEM.	○	○	○	○	○	2	
VI-1-6	Automatic Resuscitator	2	NEW PURCH.	◎	×	○	○	×	0	Function could be performed by other equipment.
VI-1-7	Fetal Doppler	3	REPLENISH.	○	○	○	○	○	3	
VI-1-8	Mobile Stand Lamp	3	REPLACEM.	○	○	○	○	○	3	
VI-1-9	Automatic Resuscitator	4	NEW PURCH.	◎	×	○	○	×	0	Function could be performed by other equipment.
VI-1-10	Infant Incubator	8	REPLENISH.	◎	○	○	○	○	8	
VI-1-11	Ultrasound Scanner	1	REPLENISH.	○	○	○	○	○	1	
VI-1-12	Electrocardiograph	1	REPLACEM.	◎	○	○	○	○	1	
VI-1-13	Automatic Recording Densitometer	1	NEW PURCH.	○	×	○	○	×	0	Low necessity.
VI-1-14	Electrophoresis Apparatus	1	NEW PURCH.	○	×	○	△	×	0	Low necessity.
VI-1-15	Ventilator	1	REPLENISH.	◎	○	○	○	○	1	
VI-1-16	Infant Ventilator	2	REPLENISH.	◎	○	○	○	○	2	
VI-1-17	Anesthesia Apparatus w/ Ventilator	2	REPLACEM.	◎	○	○	○	○	2	
VI-1-18	Blood Gas Analyzer	1	REPLENISH.	◎	○	○	△	○	1	
VI-1-18'	Na,K, Cl Analyzer	1	REPLENISH.	◎	○	○	△	○	1	

TABLE OF RESULT OF THE EXAMINATION OF REQUESTED EQUIPMENT

NO.	NAME OF EQUIPMENT	REQ. QT'Y	CLASIF.	RELAT. W/ EMERG. MED. CARE	EVALUATION (1)	(2)	(3)	OVERALL EVALUAT.	QT'Y OF EQUIP. TO BE PROCURED UNDER THIS PROJ.	REMARKS
VI-1-19	Operating Table	2	REPLACEM.	◎	○	○	○	○	2	
VI-1-20	Operating Light	2	REPLACEM.	◎	○	○	○	○	2	
VI-1-21	Bedside Monitor	2	REPLACEM.	◎	○	○	○	○	2	
VI-1-22	Ultrasonic Nebulizer	4	REPLENISH.	○	○	○	○	○	4	
VI-1-23	Colposcope	1	REPLENISH.	○	○	○	○	○	1	
	2. Basic Essential Equipment /Common Use									
VI-2-1	Height Measuring Rod	1	REPLACEM.	○	○	○	○	○	1	
VI-2-2	Weighing Scale	2	REPLACEM.	○	○	○	○	○	2	
VI-2-3	Stethoscope	5	REPLACEM.	◎	○	○	○	○	5	
VI-2-4	Sphygmomanometer	5	REPLACEM.	◎	○	○	○	○	5	
VI-2-5	Small Operating Instrument Set	2	REPLACEM.	◎	×	○	○	×	0	Low necessity.
VI-2-6	Operating Instrument Set	4	REPLACEM.	◎	×	○	○	×	0	Existing equip. still remain serviceable. Could be procured by Kyrgyz side
VI-2-7	Table-top Sterilizer	2	REPLACEM.	◎	○	○	○	○	2	
VI-2-8	Instrument Sterilizing Case	12	REPLACEM.	○	○	○	○	○	12	
VI-2-9	Dressing Jar with Stand	6	REPLACEM.	○	○	○	○	○	6	
VI-2-10	Stretcher	4	REPLACEM.	○	○	○	○	○	4	
VI-2-11	Instrument Table	2	REPLACEM.	○	○	○	○	○	2	
VI-2-12	Instrument Carriage	2	REPLACEM.	○	○	○	○	○	2	
VI-2-13	Emergency Cart	3	REPLACEM.	◎	○	○	○	○	3	
VI-2-14	Mobile Stand Lamp	2	REPLACEM.	○	×	○	○	×	0	Existing equipment still remain serviceable.

(2) Equipment design

1) Equipment List

In accordance with the examination mentioned above, the equipment to be procured in this project are shown as following list.

LIST OF EQUIPMENT TO BE PROCURED UNDER THIS PROJECT

I. Bishkek Ambulance Center

No.	Name of Equipment	Quantity
I-1	Ambulance Car	20
I-2	Portable Defibrillator	10
I-3	Electrocardiograph	10
I-4	Electrical Suction Unit	10
I-5	Intubation Set	10
I-6	Steam Sterilizer	1
I-7	Communication Device	1
I-9	Mobile Artificial Respiration Apparatus	10
I-10	Ambu Bag for Children	6
I-11	Ambu Bag for Adults	14
I-12	Glucose Analyzer	5
I-13	Sphygmomanometer for Children	6
I-14	Sphygmomanometer for Adult	14

II. National Surgical Center

No.	Name of Equipment	Quantity
	1. Operating Room and Sterilization	
II-1-1	Electro-Surgical Unit	6
II-1-2	Electrical Suction Unit	6
II-1-3	Operating Table	6
II-1-4	Operating Light	6
II-1-5	Operating Light/Stand Type	3
II-1-6	Anesthesia Apparatus w/Ventilator	6
II-1-7	Patient Monitor	3
II-1-8	Defibrillator	3
II-1-10	Film Illuminator	6
II-1-11	C-arm X-ray TV System	1
II-1-12	Ambu Bag/Laryngoscope	3
II-1-13	Steam Sterilizer	2
	2. ICU	
II-2-1	Defibrillator	1
II-2-2	Bedside Monitor	6
II-2-3	Ventilator	6
II-2-4	Sphygmomanometer	12

LIST OF EQUIPMENT TO BE PROCURED UNDER THIS PROJECT

No.	Name of Equipment	Quantity
II-2-6	Low Pressure Cont. Suction Unit	6
II-2-8	Oxygen Tent	1
II-2-9	Ambu Bag/Laryngoscope	3
II-2-10	Blood Gas Analyzer	1
II-2-11	Coagulometer	1
	3. Endoscopy-Abdominal & Others	
II-3-1	Bronchoscope/Flexible	1
II-3-2	Gastrointestinal Fiberscope	1
II-3-3	Halogen Light Source	2
II-3-4	Endoscopic Suction Pump	2
II-3-5	Endoscopic Trolley	2
II-3-6	Thoracoscope	1
II-3-7	Cabinet for Endoscope	1
II-3-8	Ultrasound Scanner	1
	4. Basic Essential Equipment/Common Use	
II-4-1	Height Measuring Rod	1
II-4-2	Weighing Scale	1
II-4-3	Stethoscope	15
II-4-5	Diagnostic Set	2
II-4-6	Clinical Thermometer	2
II-4-8	Small Operating Instrument Set	2
II-4-10	Boiling Sterilizer	4
II-4-11	Instrument Sterilizing Case	14
II-4-12	Dressing Jar with Stand	8
II-4-13	Stretcher	7
II-4-14	Instrument Table	8
II-4-15	Instrument Carriage	8
II-4-16	Emergency Cart	3
II-4-18	Ambu Bag	2

III. Republican Infection Disease Hospital

No.	Name of Equipment	Quantity
	1. Pediatric/Neonatal Reanimation	
III-1-1	Infant Incubator	3
III-1-2	Infant Scale	5

LIST OF EQUIPMENT TO BE PROCURED UNDER THIS PROJECT

No.	Name of Equipment	Quantity
III-1-3	Ultrasonic Nebulizer	5
III-1-4	Infant Ventilator	2
III-1-5	Ambu Bag for Neonate and Adult	5
III-1-6	Neonatal Monitor	2
III-1-7	Syringe Pump	2
III-1-8	Infusion Pump	5
III-1-10	Electrical Suction Unit	2
III-1-11	Endotracheal Set	1
	2. ICU	
III-2-1	Ventilator	2
III-2-2	Bedside Monitor	2
III-2-3	Defibrillator	1
III-2-4	Electrocardiograph	1
III-2-6	Ultrasonic Nebulizer	2
III-2-7	Endotracheal Set	1
	3. X-ray Department	
III-3-1	X-ray Unit	1
III-3-2	X-ray Film Processor	1
III-3-3	Film Illuminator	1
	4. Biochemical Clinical Laboratory	
III-4-1	Blood Cell Counter	1
III-4-2	Binocular Microscope	2
III-4-3	Centrifuge	1
III-4-4	K, Na, Cl Analyzer	1
III-4-5	Glucose Analyzer	1
III-4-6	Clinical Refractometer	1
III-4-7	Hot Air Sterilizer	1
	5. Sterilizing and Others	
III-5-1	Steam Sterilizer	1
III-5-2	Ultrasound Scanner	1
III-5-3	Blood Gas Analyzer	1
	6. Basic Essential Equipment /Common Use	
III-6-2	Weighing Scale	1
III-6-3	Stethoscope	12
III-6-4	Sphygmomanometer	6

LIST OF EQUIPMENT TO BE PROCURED UNDER THIS PROJECT

No.	Name of Equipment	Quantity
III-6-5	Diagnostic Set	2
III-6-6	Clinical Thermometer	1
III-6-7	Laryngoscope	2
III-6-8	Small Operating Instrument Set	2
III-6-10	Boiling Sterilizer	5
III-6-11	Instrument Sterilizing Case	2
III-6-12	Dressing Jar with Stand	1
III-6-13	Stretcher	2
III-6-14	Instrument Table	1
III-6-15	Instrument Carriage	1
III-6-16	Emergency Cart	1
III-6-17	Mobile Stand Lamp	2

IV. City Hospital No. 3 for Children

No.	Name of Equipment	Quantity
	1. X-ray	
IV-1-1	X-ray Unit	1
IV-1-2	X-ray Unit/Mobile	1
	2. Operating Room and Sterilization	
IV-2-1	Anesthesia Apparatus w/Ventilator	4
IV-2-2	Defibrillator	1
IV-2-3	Pulse Oximeter	4
IV-2-4	Operating Table	6
IV-2-5	Hypo/Hyperthermia Unit	1
IV-2-6	Electro-Surgical Unit	2
IV-2-7	Operating Light	6
IV-2-8	Operating Light/Stand Type	2
IV-2-9	Electrical Suction Unit	2
IV-2-10	Operating Microscope	1
IV-2-11	Steam Sterilizer	1
IV-2-12	Distillator	1
	3. Pediatric & Others	
IV-3-1	Syringe Pump	6
IV-3-2	Infant Incubator	2
IV-3-3	Pulse Oximeter	6

LIST OF EQUIPMENT TO BE PROCURED UNDER THIS PROJECT

No.	Name of Equipment	Quantity
IV-3-4	Electrical Suction Unit	4
IV-3-5	Ventilator	2
IV-3-6	Blood Gas Analyzer	1
IV-3-7	Bedside Monitor	6
IV-3-8	Na,K,Cl Analyzer	1
IV-3-9	Ultrasonic Nebulizer	7
	4. Endoscope & Others	
IV-4-1	Rigid Respiratory Bronchoscope	1
IV-4-2	Gastroduodeno Fiberscope	1
IV-4-3	Halogen Light Source	1
IV-4-4	Endoscopic Suction Unit	1
IV-4-5	Endoscopic Trolley	1
IV-4-7	Cysto-Urethroscope Set	1
IV-4-8	Halogen Light Source	1
	5. Basic Essential Equipment /Common Use	
IV-5-2	Weighing Scale	4
IV-5-3	Stethoscope	10
IV-5-4	Sphygmomanometer	6
IV-5-5	Diagnostic Set	2
IV-5-6	Clinical Thermometer	1
IV-5-7	Laryngoscope	3
IV-5-8	Small Operating Instrument Set	6
IV-5-10	Boiling Sterilizer	7
IV-5-11	Instrument Sterilizing Case	8
IV-5-12	Dressing Jar with Stand	7
IV-5-13	Stretcher	6
IV-5-14	Instrument Table	8
IV-5-15	Instrument Carriage	6
IV-5-16	Emergency Cart	2
IV-5-17	Mobile Stand Lamp	4

V. Maternity House No. 2

No.	Name of Equipment	Quantity
	1. Reanimation	
V-1-1	Infant Incubator	5

LIST OF EQUIPMENT TO BE PROCURED UNDER THIS PROJECT

No.	Name of Equipment	Quantity
V-1-2	Syringe Pump	2
V-1-3	Phototherapy Unit	2
V-1-4	Ambu Bag	3
V-1-5	Infant Warmer	2
V-1-6	Infant Ventilator	3
V-1-9	Neonatal Monitor	2
V-1-10	Reanimation Set	2
V-1-11	Ventilator	3
V-1-12	Bedside Monitor	2
V-1-13	Electrocardiograph	1
V-1-14	Na, K, Cl Analyzer	1
V-1-16	Infusion Pump	2
	2. Obstetrics and Gynecology	
V-2-1	Fetal Monitor	4
V-2-2	Ultrasound Scanner	1
V-2-3	Colposcope	1
	3. Operating Room and Sterilization	
V-3-2	Anesthesia Apparatus w/ Ventilator	3
V-3-3	Steam Sterilizer	1
	4. Basic Essential Equipment /Common Use	
V-4-1	Height Measuring Rod	2
V-4-2	Weighing Scale	2
V-4-3	Stethoscope	17
V-4-4	Sphygmomanometer	10
V-4-6	Laryngoscope	3
V-4-7	Small Operating Instrument Set	4
V-4-8	Boiling Sterilizer	4
V-4-9	Instrument Sterilizing Case	6
V-4-10	Dressing Jar with Stand	5
V-4-11	Stretcher	2
V-4-12	Instrument Table	2
V-4-13	Instrument Carriage	2
V-4-14	Emergency Cart	1
V-4-15	Mobile Stand Lamp	2

LIST OF EQUIPMENT TO BE PROCURED UNDER THIS PROJECT

VI. Maternity House No. 4

No.	Name of Equipment	Quantity
	1. Delivery/ Operation Room/Others	
VI-1-1	Vacuum Extractor	1
VI-1-2	Electrical Suction Unit	3
VI-1-3	Fetal Monitor	3
VI-1-4	Neonatal Monitor	2
VI-1-5	Infant Scale	2
VI-1-7	Fetal Doppler	3
VI-1-8	Mobile Stand Lamp	3
VI-1-10	Infant Incubator	8
VI-1-11	Ultrasound Scanner	1
VI-1-12	Electrocardiograph	1
VI-1-15	Ventilator	1
VI-1-16	Infant Ventilator	2
VI-1-17	Anesthesia Apparatus w/ Ventilator	2
VI-1-18-1	Blood Gas Analyzer	1
VI-1-18-2	Na,K, Cl Analyzer	1
VI-1-19	Operating Table	2
VI-1-20	Operating Light	2
VI-1-21	Bedside Monitor	2
VI-1-22	Ultrasonic Nebulizer	4
VI-1-23	Colposcope	1
	2. Basic Essential Equipment /Common Use	
VI-2-1	Height Measuring Rod	1
VI-2-2	Weighing Scale	2
VI-2-3	Stethoscope	5
VI-2-4	Sphygmomanometer	5
VI-2-7	Table-top Sterilizer	2
VI-2-8	Instrument Sterilizing Case	12
VI-2-9	Dressing Jar with Stand	6
VI-2-10	Stretcher	4
VI-2-11	Instrument Table	2
VI-2-12	Instrument Carriage	2
VI-2-13	Emergency Cart	3

2) Specification of main equipment

The specification of main equipment to be procured in this project are shown as follows;

PRINCIPAL EQUIPMENT LIST

EQUIPMENT	PRINCIPAL SPECIFICATIONS	APPLICATION	QUANTITY
Ambulance Car	Type of Engine : Gasoline Wheel drive: 2WD Type of car : One-box type Equipment : Stretcher(Main and supplementary, heater, ventilation, hand washing unit, partition, lamp	Treatment of emergency patient and transportation to an emergency hospital.	20
Defibrillator	Output Energy : Max. 360J (No less than 10 steps) Charging time : Less than 10 sec. Display : Provided Power source : AC, charging battery	Recover heartbeat normally by transcutaneously galvanization, in case of venticular flutter.	5
Electrocardiograph	ECG leads : Standard12 lead Sensitivity selection : 5, 10 and 20mm/mV Display : Provided Recorder : 25 and 50mm/s Power source : AC, charging battery Others : Carrying case	To be equipped in the ambulance car. Diagnose arhythmia, ischemic heart disease and circulatory aberration like auxocardia.	10
Electrocardiograph	ECG leads : Standard12 lead Sensitivity selection : 5, 10 and 20mm/mV Diplay : Provided Recorder : 25 and 50mm/s Power source : AC, charging battery Others : Cart	Diagnose arrhythmia, ischemic heart disease and circulatory aberration like auxocardia.	3
Steam Sterilizer	type : Horizontal、swing door Capacity : approx. 220 l Chamber dimensions : 500(W)x500(H)x900(D) mm Others : Boiler, pump and water softener	Sterilization of operating instruments, etc. to be used in the hospital.	6
Communication Device	PABX Speech path : PCM time division switch Control system : SPC Processor : 32 bit Trunk line : Max. 48 lines Extension : Max. 48 lines Power equip. : Built-in and battery MDF : Self-standing and wall mounting. Capacity 100P Dispatcher console : Desk top and head set type Display : LCD Telephone Type : Desk top and ordinary hand set Fuction key : Hold, transfer and response Mobile radio Channel : 12 or more	Call for ambulance car by people is connected to dispatcher console via switchboard. After confirmation of situation, the call is forwarded to senior dispatcher console. In this stage, situation is reconfirmed if it is needed and ambulance car starts to the site. The ambulance car and the center contact by radio communication. Communication device for ambulance car is a device to operate above connected system. But each device is not special device but combination of usual apparatus.	1

PRINCIPAL EQUIPMENT LIST

Mobile Artificial Respiration App.	Portable ventilator for ambulance car Ventilation mode : CMV and assist/CMV Tidal volume : Approx. 100～900 ml I:E ratio : Approx. 1:1 to 1:10 Power source : AC, DC, internal battery	Take the place of patient's breathing, who stopped breathing or being hypopnea, while transport to emergency hospital. To be mounted in ambulance car.	10
Ventilator	Ventilation system : Volume preset, time cycling pressure preset, time cycling Respiratory mode: CMV volume limited, CMV pressure limited, IDV pressure support, CPA Inspiratory pressure : Approx. 5～70cmH2O PEEP : 0～20cmH2O Oxygen concentration : Approx. 20～200%	Take the place of patient's breathing, who is medically or surgically hypopnea (mainly adult), or who needs ventilation control after operation.	14
Infant Ventilator	Ventilation mode:CMV, IMV, plateau PEEP/CPAP, etc. Minute volume : 20l/min or more Tidal volume: 50 to 1,200 ml or more Flow rate: 25l/min or more Humidifier : Provided O2 concentration : Approx. 20～100%	Take the place of patient's breathing, who is medically hypopnea (mainly infant), or who need ventilation control after operation.	7
Operating Table	Table top dimensions : Approx. 490x2,000mm Radio translucent taps Elevation range : 70～100cm Trandelenburg : 45˘ approx. Reverse : 45˘ approx. Lateral tilt : 30˘ each side Table top rotation : 180˘	Multi-funtional operating table to meet many type of operation. According to operational region, each part is adjustable.	14
Operating Light	No. of bulbs (Main lamp) : 12 pieces approx. (Auxiliary lamp) : 4 pieces approx. Bulbs : Halogen bulb Light intensity (Main lamp) : Max. 150,000 lux (Auxiliary lamp) : Max. 90,000 lux	Light operational region correctly for smooth operation Especially, shadowless effect of combination of main and auxiliary lamp is suitable for thoracal surgery.	9
Anesthesia Apparatus w/ Ventilator	Flowmeter : O2, N2O Canister : Chamber type Vaporizer : Halothane, fluothane Ventilator Tidal volume : Approx. 100～900 ml or more Respiratory rate : Approx. 5～40 times／min.	General anesthesia device using inhalant anesthetic for analogesic operation. Attached ventilator controls patient's breathing while operation.	15

PRINCIPAL EQUIPMENT LIST

Patient Monitor	Measuring parameters : ECG, SpO2, temperature, NIBP ECG lead : 3 electrode; I, II, III Respiration measuring method : Impedance method Display : Provided	Monitor electrocardiogram of CCU patient like myocardial infarction or angina patient, and monitor incidence and type of tachycardia, brachycardia and arthythmia.	3
C-armX-ray TV System	Max. tube voltage : 105kV approx. Max. fluoroscopic tube current : 3.1mA Max. tube current : 20mA Max. mAs:80 TV system : CCD sensor TV camera : Provided	For fluoroscopic, orthopedic procedures, etc.	1
X-ray Unit/Mobile	Tube voltage : 40kV～120kV approx. Range of tube current : 0.2～250mA(40KV) 0.2～100mA(120kV)	Radiography especially for ward patients.	1
X-ray Unit	General radiographic · Fluoroscopy Radiography tube voltage : 40kV～150kV approx. Fluoroscopic tube current : 0.1mA～6mA Nominal rating current/voltage 650mA/70kV 625mA/80kV 500mA/100kV 400mA/125kV	Fluoroscopy, thoracal and ventral radiography.	1
X-ray Unit	General radiographic · Fluoroscopy · Tomography Radiographic tube voltage : 40kV～150kV approx. Fluoroscopic tube voltage : 40kV～125kV approx. Fluoroscopic tube current : 0.1mA～6mA Nominal rating current/voltage 650mA/70kV 625mA/80kV 500mA/100kV 400mA/125kV Tomo angle in degrees/time 8° /0.4 s , 20° /1.0 s , 40° /2.0 s	Fluoroscopy, thoracal and ventral radiography.	1
Bedside Monitor	Measuring parameters : ECG, rep, SpO2, temperature, NIBP, IBP ECG lead : 3 electrode; I, II, III Respiration measuring method : Impedance method Display : Provided	Monitor electrocardiogram of CCU patient like myocardial infarction or angina patient, and monitor incidence and type of tachycardia, brachycardia and arthythmia.	6
Bedside Monitor	Measuring paramters : ECG, Resp, SpO2, Temperature, NIBP ECG leads : 3 electrodes; I, II, III Display : Provided	Ditto	12

PRINCIPAL EQUIPMENT LIST

Blood Gas Analyzer	Measuring parameters : pH, pCO2, pO2 Sample size : 25μl~85μl approx. Analysis time : 20 sec. or more	Measure blood gas of tribasic disiquilibrium casual and semeiotic patient of respiratory system.	4
Coagulometer	Wave length : 660nm approx. Measuring parameters : PT, APTT, Fib, TT, HPT Operation: Automatic Display : LCD Printer : Provided	Measure blood coagulation time.	1
Bronchoscope/ Flexible	Field of view : 120° Range of distal end bending : Up 180° ; down 130° Working lenght : 550mm approx.	Diagnose and treatment of upper gastrointestinal disease.	1
Gastrointestinal Fiberscope	Field of view : 120° Range of distal end bending : Up 210° ; down 90° ; right and left 100° Working length : 1,030mm approx.	Ditto	1
Gastroduodeno Fiberscope	Field of view : 100° Range of distal end bending : Up 210° ; down 90° ; right and left 100° Working length : 1,025mm	Ditto	1
Thoracoscope	Telescope diameter10mm Working length : 31mm TV system Camera system : PAL Monitor : Color monitor Light source : Halogen lamp	To be used for endoscopic operation of chest surgery. Surgeon handles forceps looking through TV monitor, for diagnosis, operation and treatment.	1
Rigid Respiratory Bronchoscope	Working length : 30cm size 6 30cm size 4.5 30cm size 3.7 26cm size 3.5 26cm size 3 Light source : Halogen lamp	Diagnosis, observation and foreign body removal treatment for chest surgery, internal medicine and otolaryngology.	1
Cysto-urethroscope	Outer diameter : Approx. 1.9mm Direction of view : 0°	Diagnosis and treatment of bladder and urethra.	1
Ultrasound	Scanning method : Electronic sector convex, electronic linear Image display modes : B, B/M, M, color doppler Display magnification : Max. 8 steps Measuring parameters : Basic parameters, heart rate, gestational age, fetal age, doppler Monitor : Color monitor	General ultrasound diagnostic equipment (with color doppler). Especially for the use of abdominal and obstetrics. Also for tumor diagnosis.	2

PRINCIPAL EQUIPMENT LIST

Ultrasound	Scanning method : Electronic sector convex, electronic linear Image display modes : B, B/M, M Display magnification : Max. 3 steps Measuring parameters : Distance, are and circunference, angle, volume, LV functio, LV mass, gestational age, etc. Monitor : Black and white monitor	Especially for the use of abdominal and obstetrics. Also for tumour diagnosis.	2
Blood Cell Counter	Measuring parameters : WBC, RBC, HGB, MCV, PLT Capacity : Approx. 60 samples/h Derivated parameters : MCH, MCHC, HCT Sample volume : 135 μl approx.	Measure number, size and type of erythrocyte, leucocyte and platelet and make hemanalysis for anemia diagnostic effieciently and increase quality. Less differences between results of each technician.	1
Na, K, Cl Analyzer	Sample volume : 500 μl approx. Type of sample : Whole blood, serum, plasma, urine Measuring parameters : Na , K, Cl Analysis time: 55 sec approx.	To control electrolyte during operation.	4
Hypo/Hyperthermia Unit	Temperature display : Patient body temperature and water of blanket Temperature : Approx. 40℃ Safety : Back-up thermostat system Temperature control : Digital	Prevent patient's body from hypo/hyperthermia during operation and keep and control patient's body temperature normally.	1
Operating Microscope	Optical system: Infinity optical system Total magnification: 40X to 1,000X Eyepiece tube: Binocular eyepiece tube Illumination system: Halogen lamp Others : For two persons	To be used for abdominal operation which needs subtle ectomy and angiorrhaphy.	1
Distillator	Type : Heater system Capacity : 20 l/h	To be installed in the CSSD. The distilled water will be used for washing (rinse) of material to be used in the hospital and also in the steam sterilizer.	1
Fetal Monitor	FHR measuring range : 50～210bpm FM measuring : Available UC measurement method : Strain gauge type or equivalent Recorder : 1～3cm／min.	Measure fetal heartbeat, movement and labor and monitor fetal situation.	7

Analysis of Dispatching cases by time on 18 Sep. 1998

	Frequency	No. of Dispatching by time																Remark
No. of Calling	336	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18	19	20	21	22	23		
Cancel	17																	
Specialist Team	113	10	3	2	5	13	10	4	11	11	7	10	7	7	5	8		35.4%
Within 4 minutes	103	10	3	2	5	8	8	4	11	11	5	9	7	7	5	8		
4 minutes more	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
15 minutes more	6	0	0	0	0	2	1	0	0	0	2	1	0	0	0	0		
30 minutes more	3	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0		
1 hour more	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0		
Total of delay	10	0	0	0	0	5	2	0	0	0	2	1	0	0	0	0		
Stay onsite 50 minutes more	23	2	0	1	0	2	1	0	2	3	3	3	3	0	1	2		
Paediatric Team	53	3	9	0	1	1	5	2	3	6	4	5	5	2	6	1		16.6%
Within 4 minutes	49	3	9	0	1	1	3	1	3	6	4	5	5	1	6	1		
4 minutes more	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
15 minutes more	2	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0		
30 minutes more	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0		
1 hour more	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total of delay	4	0	0	0	0	0	2	1	0	0	0	0	0	1	0	0		
Stay onsite 50 minutes more	23	2	5	0	1	0	2	0	2	4	1	2	3	1	0	0		
Sub-center No.1	51	6	3	3	1	2	6	4	7	5	3	2	4	1	3	1		16.0%
Within 4 minutes	45	6	3	3	0	1	4	4	7	5	3	2	3	1	3	0		
4 minutes more	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0		
15 minutes more	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
30 minutes more	2	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0		
1 hour more	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0		
Total of delay	6	0	0	0	1	1	2	0	0	0	0	0	1	0	0	1		
Stay onsite 50 minutes more	9	0	1	0	0	0	2	2	1	1	0	0	1	0	1	0		
Sub-center No.2	54	2	0	0	3	7	5	1	4	10	2	4	6	6	2	2		16.9%
Within 4 minutes	40	2	0	0	3	3	3	1	4	8	2	2	5	3	2	2		
4 minutes more	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
15 minutes more	9	0	0	0	0	2	1	0	0	1	0	2	1	2	0	0		
30 minutes more	4	0	0	0	0	1	1	0	0	1	0	0	0	1	0	0		
1 hour more	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0		
Total of delay	14	0	0	0	0	4	2	0	0	2	0	2	2	1	3	0		
Stay onsite 50 minutes more	18	1	0	0	2	2	2	0	2	5	0	2	2	0	1	0		
Sub-center No.3	48	0	1	2	2	5	8	5	6	7	2	5	2	1	2	0		15.0%
Within 4 minutes	46	0	1	2	2	4	8	5	6	7	2	4	2	1	2	0		
4 minutes more	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
15 minutes more	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0		
30 minutes more	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0		
1 hour more	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total of delay	2	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0		
Stay onsite 50 minutes more	23	0	0	1	1	3	3	3	2	4	2	2	0	2	0	0		
Whole Ambulance Center	319	21	16	7	12	28	34	16	31	39	18	26	24	17	18	12		100%
Within 4 minutes	283	21	16	7	11	17	26	15	31	37	16	22	22	13	18	11		88.7%
4 minutes more	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0		0.6%
15 minutes more	19	0	0	0	0	4	3	0	0	1	2	4	1	3	0	1		6.0%
30 minutes more	12	0	0	0	1	4	3	1	0	1	0	0	1	1	0	0		3.8%
1 hour more	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0		0.9%
Total of delay	36	0	0	0	1	11	8	1	0	2	2	4	2	4	0	1		11.3%
Stay onsite 50 minutes more	97	5	6	2	4	7	10	5	9	17	6	9	9	3	3	2		30.4%

Maximum dispatching cases are 26 cases on 19

** Cases delayed more than 15 minutes are 34 / 319=10.65%

Exhibit 2

Discarding plan of existing Ambulance car

No.	Car No.	Plate No.	Manufacturing Country	Manufacturer	Model No.	Manufactured Year	Mileage in Oct. '98	Mileage km/year	Date over 30mil.km	Date to be Discarded	Belonging	Present situation Lvl.	
1	18	9675Ф Н М	LATVIA	ELGAVA	РАФ22031	1991	370,210	52,887	Before'97	98/12	Sub-Stn. No. 1	D	Super-mileage
2	24	7480Ф Н М	LATVIA	ELGAVA	РАФ22031	1990	370,000	46,250	Before'97	98/12	Sub-Stn. No. 2	D	Super-mileage
3	44	7468Ф Н М	LATVIA	ELGAVA	РАФ22031	1990	351,240	43,905	Before'97	98/12	Amb. Center	E	To be repaired
4	06	8823Ф Н М	LATVIA	ELGAVA	РАФ22031	1990	317,654	39,707	98	99/12	Amb. Center	D	Engine repaired
5	19	9785Ф Н М	LATVIA	ELGAVA	РАФ22031	1991	312,000	44,571	98	99/12	Sub-Stn. No. 1	C	Super-mileage
6	13	9780Ф Н М	LATVIA	ELGAVA	РАФ22031	1991	311,217	44,460	98	99/12	Sub-Stn. No. 1	C	Super-mileage
7	36	8301Ф Н М	LATVIA	ELGAVA	РАФ22031	1989	311,217	34,580	98	99/12	Sub-Stn. No. 3	D	Super-mileage
8	20	9687Ф Н М	LATVIA	EAGLE	РАФ22031	1991	304,745	43,535	98	99/12	Sub-Stn. No. 2	C	Super-mileage
9	42	9681Ф Н М	LATVIA	EAGLE	РАФ22031	1991	302,945	43,278	98	98/12	ABM. Center	E	Damaged
10	31	9680Ф Н М	LATVIA	ELGAVA	РАФ22031	1991	300,147	42,878	98	99/12	Sub-Stn. No. 3	C	Super-mileage
11	01	?	LATVIA	ELGAVA	РАФ22031	1991	290,000	41,429	99/2	98/12	Amb. Center	E	Damaged
12	17	9787Ф Н М	LATVIA	ELGAVA	РАФ22031	1991	285,147	40,735	99/3	99/12	Sub-Stn. No. 1	B	
13	55	9781Ф Н Р	LATVIA	ELGAVA	РАФ22031	1991	275,189	39,313	99/6	99/12	Amb. Center	B	
14	16	7478Ф Н М	LATVIA	ELGAVA	РАФ22031	1990	272,140	34,018	99/7	99/12	Sub-Stn. No. 1	B	
15	48	7467Ф Н М	LATVIA	ELGAVA	РАФ22031	1990	271,145	33,893	99/7	99/12	Amb. Center	B	
16	02	2614Ф Н Р	LATVIA	ELGAVA	РАФ22031	1991	268,147	38,307	99/8	99/12	Amb. Center	C	Engine repaired
17	30	2613Ф Н Р	LATVIA	ELGAVA	РАФ22031	1991	252,947	36,135	00/1	00/12	Sub-Stn. No. 3	C	Engine repaired
18	15	9783Ф Н М	LATVIA	ELGAVA	РАФ22031	1991	252,000	36,000	00/2	00/12	Sub-Stn. No. 1	B	
19	34	6807Ф Н М	LATVIA	ELGAVA	РАФ22031	1990	233,776	29,222	00/8	00/12	Sub-Stn. No. 3	B	
20	35	9684Ф Н М	LATVIA	ELGAVA	РАФ22031	1991	233,445	33,349	00/8	00/12	Sub-Stn. No. 3	B	
21	11	8483Ф Н М	LATVIA	ELGAVA	РАФ22031	1990	232,100	29,013	00/8	98/12	Amb. Center	D	To be repaired
22	21	?	LATVIA	ELGAVA	РАФ22031	1991	232,000	33,143	00/9	00/12	Sub-Stn. No. 2	B	
23	26	7473Ф Н М	LATVIA	ELGAVA	РАФ22031	1990	217,125	27,141	01/1	01/12	Sub-Stn. No. 2	D	To be repaired
24	32	0981Ф Н Р	LATVIA	ELGAVA	РАФ22031	1991	208,007	29,715	01/4	98/12	Sub-Stn. No. 3	E	Damaged
25	23	2608Ф Н Р	LATVIA	ELGAVA	РАФ22031	1991	207,579	29,654	01/9	01/12	Sub-Stn. No. 2	B	
26	51	8481Ф Н М	LATVIA	ELGAVA	РАФ22031	1990	192,247	24,031	01/10	01/12	Amb. Center	B	
27	09	2611Ф Н Р	LATVIA	ELGAVA	РАФ22031	1991	190,000	27,143	02/1	02/12	Amb. Center	C	Engine repaired
28	14	9694Ф Н М	LATVIA	ELGAVA	РАФ22031	1991	180,962	25,852	02/4	02/12	Sub-Stn. No. 1	B	
29	52	6474Ф Н Р	RUSSIA	UAZ	У А33962	1992	172,000	28,667	02/5	02/12	Amb. Center	B	
30	04	9692Ф Н М	LATVIA	ELGAVA	РАФ22031	1991	169,279	24,183	03/2	03/12	Amb. Center	B	
31	05	2615Ф Н Р	LATVIA	ELGAVA	РАФ22031	1991	142,000	20,286	03/3	03/12	Amb. Center	C	Engine repaired
32	25	2607Ф Н Р	LATVIA	ELGAVA	РАФ22031	1991	137,088	19,584	03/5	03/12	Sub-Stn. No. 2	B	
33	54	9266Ф Н Р	LATVIA	ELGAVA	РАФ22031	1995	130,000	43,333	03/5	03/12	Amb. Center	A	
34	03	9265Ф Н Р	LATVIA	ELGAVA	РАФ22031	1995	129,999	43,333	03/6	03/12	Amb. Center	A	
35	07	9267Ф Н Р	LATVIA	ELGAVA	РАФ22031	1995	128,120	42,707	03/6	03/12	Amb. Center	A	
36	08	9264Ф Н Р	LATVIA	ELGAVA	РАФ22031	1995	127,940	42,647	03/11	03/12	Amb. Center	A	
37	40	3969BA	RUSSIA	UAZ	У А33962	1996	112,000	56,000	04/7	04/12	Amb. Center	A	
38	22	883BL	RUSSIA	UAZ	У А33962	1996	89,000	44,500	04/7	04/12	Sub-Stn. No. 2	A	
39	49	881BL	RUSSIA	UAZ	У А33962	1996	88,147	44,074	04/8	04/12	Amb. Center	A	
40	33	879BL	RUSSIA	UAZ	У А33962	1996	85,000	42,500	04/9	04/12	Sub-Stn. No. 3	A	
41	45	885BL	RUSSIA	UAZ	У А33962	1996	82,129	41,065	04/10	04/12	Amb. Center	A	
42	43	882BL	RUSSIA	UAZ	У А33962	1996	79,247	39,624	04/11	04/12	Amb. Center	A	
43	53	884BL	RUSSIA	UAZ	У А33962	1996	75,247	37,624	05/10	05/12	Amb. Center	A	
44	41	4417BA	USA	FORD		1987	41,926	3,811	06/10	06/12	Amb. Center	B	
45	12	9786Ф Н М	LATVIA	ELGAVA	РАФ22031	1991	(259,560)	(37,080)	99/11	99/12	Amb. Center	B	
46	60	9691Ф Н М	LATVIA	ELGAVA	РАФ22031	1991	(259,560)	(37,080)	99/11	98/12	Amb. Center	E	Damaged

Total mileage of 43 cars 1,594,266 km

Annual average mileage of 43 cars 37,076 km

Ehibit 3

Statistics of Ambulance Car in Bishkek and Japanese local city

No.	Contents	Bishkek 1995	Bishkek 1997	Bishkek 2004	Bishkek 2004	Bishkek 2004	Kumamoto 1997	Hiroshima 1997
1	Population (Service population)	682,200	963,400	1,081,800	1,081,800	1,081,800	658,163	1,108,888
2	Dispatching of Car (case)	129,574	133,435	131,387	131,387	131,387	16,639	28,247
3	Delivery to hospital (case)							
4	Delivery to hospital (person)	38,625	40,435	39,416	65,694	91,971	15,388	25,583
5	Un-delivery (person)	109,490	93,000	91,971	65,694	39,416	1,714	2,664
6	Delivered person / Dispatching	29.8%	30.3%	30.0%	50.0%	70.0%	92.5%	90.6%
7	Dispatching / 1,000 residents	190	139	121	121	121	25	25
8	Dispatching / day	355	366	360	360	360	46	77
9	Delivery (p). / 1,000 residents / year	57	42	36	61	85	23	23
10	Delivery (p). / day	106	111	108	180	252	42	70
11	No. of existing ambulance car	36	46				17+(3)*	28+(4)*
12	No. of.existing ambulance car / 100,000 residents	5.5	4.8		.(2.5)		2.6	2.5
13	Dispatching / ambulance car / day	10	8				3	3
14	Delivery / ambulance car / day	2	2				2	3
15	No. of ambulance car similar to Hiroshima	17+(2)**	24+(2)**		27+(2)**			
16	Disp. / ambulance car similar to Hiroshima / day	20.9	15.2		13.3		3	3
17	Delivery / ambulance car similar to Hiroshima / day	6.2	14.6	4.0	6.7	9.3		
18	No. of ambulance car based on Japanese standard***	13	17		19		13	19
19	Dispatching / car based on Japanese standard / day	27.3	21.5		18.9		4	4
20	Delivery (p) / car based on Japanese standard /day	8.1	6.5	5.7	9.5	13.3	3	4

* (X)=No. of spare car

** (X)=No. of spare car by Kyrgyz

*** Japanese standard for Quantity of Ambulance car (1990)

: Population less than 150,000 → 1 / 50,000 residents

: Population more than 150,000 → 3 + 1 / 70,000 residents

Dispatching of ambulance car by disease in BIshkek(1997)

Exhibit 4

A: Tertiary emergency cases that patient should be derivered to hospital immediately

Disease	疾 患 名	Emergency	Non-emergency	Level	Comment
Myocardial Infarction	心筋梗塞	7,019		A	A in acute case
Cerebro-vascular diseases	脳血管疾患	4,733	706	A	A by condition
Pancreatitis	膵炎	4,046	21	A	A in acute case
Fracture of skull bones	頭蓋骨骨折	2,071		A	
Allergy and anaphylactic shock	ｱﾚﾙｷﾞｰ・ｱﾅﾌｨﾗｷｼｰｼｮｯｸ	2,048		A	
Intsetinal obstructin	腸閉塞	2,026		A	
Complecations of pregnancy, delivery	周産期合併症	1,386	18	A	
Poisoning	中毒	1,038		A	
Perforated ulcer	穿孔性潰瘍	222		A	
Gastric-intestinal bleeding	胃腸管出血	144	1	A	
Sub-Total	小計	24,733	746		
Ratio	比率(%)	12.5%	0.4%		

B: Secondary emergency cases that be required emergency medical care by condition / symptom

Disease	疾 患 名	Emergency	Non-emergency	Level	Comment
Respiratory infectious Disease	呼吸器感染症	14,355	2,628	B	A in case of difficulty of breathing etc.
Other trauma	他の外傷	9,363		B	A by condition
Other cardiovascular diseases	他の心血管疾患	9,007	225	B	No information on detail
Pneumonia	肺炎	8,097	24	B	A in case of difficulty of breathing etc.
Burns	火傷	8,061		B	A by condition
Abortion	流産	8,059		B	A in case of abortus imminens
Nervous diseases	神経疾患	6,088	8,043	B	No information on detail
Coronary heart disease	冠状動脈疾患	5,132	652	B	
Bronchial asthma	気管支喘息	5,080		B	A in case of reduplicated attack
Gastric & duodenal ulcer	胃・十二指腸潰瘍	5,063	32	B	A in case of bloody vomit
Gallstones	胆石症	3,050	40	B	A in case of fitful gallstone colic
Appendicitis	虫垂炎	2,869		B	A in case of peritonitis complicated
Intestinal Infections	腸管感染症	2,792		B	A by degree of dehydration, Bloody excrement
Delivery	分娩	2,767		B	A in case of abnormal delivery
Angina pectoris	狭心症	2,360		B	
Other fractures	その他の骨折	2,199		B	A by condition
Bites	咬傷	2,099		B	
Other affects of the environment	その他環境による影響	2,098		B	No information on detail
Epilepsy	てんかん	1,495	2	B	
Alcohol intoxication	アルコール中毒	1,350	787	B	A in acute case or by symptom
Kidney stones	腎結石	1,343	11	B	
Diabetes	糖尿病	440	28	B	A in case of diabetic coma
Other pulmonary diseases	その他の肺疾患	190	45	B	No information on detail
Abdominal hernia	腹壁ヘルニア	177	29	B	
Complications after delivery	産後の合併症	170	13	B	No information on detail
Extrauterine sex organs pregnancy	子宮外妊娠	143		B	
Diseases of blood	血液疾患	60	13	B	No information on detail
Uterine bleeding	子宮出血	45		B	
Hypertension	高血圧症	9,343	454	B	
Sub-Total	小計	113,295	13,026		
Ratio	比率(%)	57.4%	6.6%		

C: Primary emergency cases that may be observed for the time being and therefore do not require emergency medical care

Disease	疾 患 名	Emergency	Non-emergency	Level	Comment
Female edeitis	女性性器炎	9,033	200	C	
Other mental disturbance	その他の精神疾患	4,675	7,084	C	
Rheumatism	リュウマチ	2,057	33	C	B in case of complication
Other urogenital diseases	他の泌尿器疾患	1,986	348	C	No information on detail
Other gall bladder diseases	その他の胆嚢疾患	1,681	154	C	No information on detail
Other respiratory diseases	その他の呼吸器疾患	1,397	151	C	No information on detail
Influenza	インフルエンザ	1,297	165	C	A in case of difficulty of breathing etc.
Other viral infections	その他のウイルス感染症	994	6	C	No information on detail
Shizophrenia	精神分裂病	674	151	C	
Other infections and parasites	その他の感染症と寄生虫疾患	564	92	C	No information on detail
Alcoholic psychosis	アルコール精神病	542		C	
Viral hepatitis	ウイルス性肝炎	374		C	A in case of hepatic coma
Tumors	腫瘍	329	1,245	C	No information on detail
Death in presence of ambulance team	救急医療チームの面前での死亡	116	1,134	C	
Endocrine system diseases	内分泌疾患	83	26	C	No information on detail
Delivery at home	在宅出産	76		C	
Other diseases	その他の疾患	3,277			No information on detail
Other gastro-intestinal diseases	その他の胃・腸疾患	2,809	1,319		No information on detail
Others	その他		1,573		
Sub-Total	小計	31,964	13,681		
Ratio	比率(%)	16.2%	6.9%		
TOTAL	合計	169,992	27,453		
GRAND TOTAL	総計	197,445		100%	C+Non-emergency =59,417=30.1%

Chapter 3

Implementation Plan

CHAPTER 3 PROJECT IMPLEMENTATION PLAN

3-1 Implementation plan

3-1-1 Implementation Concept

This project is to be implemented formally within the framework of grant aid cooperation of the Government of Japan after the signing of the Exchange of Notes, which is to be approved by the governments of the two countries. In implementing this project a Japanese consultant firm, which is to be selected by the Kyrgyzstan side, is to start working out detail drawings. After the completion of the detail drawings, a Japanese business corporation selected through bidding is to take charge of the procurement and installation of equipment.

The consultant agreement and the equipment procurement contract are to take effect subject to their certification by the Government of Japan.

The project is to be implemented within the framework of grant aid cooperation of the Government of Japan and to be paid careful attention to each of the following criteria.

(1) The Japanese side and the Kyrgyzstan side should determine the scope of work to be carried out by each side and the timing of the start and completion of each operation on the schedule coordinated to be no overlap of the works by both sides.

(2) To promote the transfer of technology to the Kyrgyzstan engineers in charge, manufacturers of the main items of equipment should give proper instructions on their operation and guidance on their periodical maintenance to these engineers.

(3) As to the X-ray unit, the ultrasound, the bedside monitor, the blood gas analyzer and the Na, K, Cl analyzer, all of which require careful maintenance and management, engineers from manufacturers of equipment or their local distributors should give guidance on their installation and operation at each of the project institutions.

3-1-2 Implementation Conditions

In view of the fact that all the institutions concerned are medical institutions, it should be verified in advance that neither of the equipment transportation schedule, the route of transportation and the places for equipment storage will interrupt routine medical care activities at the medical institutions concerned and the equipment installation procedures should be discussed with the project institutions. As to the X-ray unit, the steam sterilizer, the operating light and the communication device, in particular, the timing of removal of the existing items of equipment should be discussed fully to ensure that there is no such significant time lag between the removal of the existing items of equipment and the installation of the newly procured items of equipment as to hamper ongoing medical care activities.

3-1-3 Scope of Work

(1) The work to be carried out by the Japanese side within the frame work of grant aid cooperation of the Government of Japan includes the procurement and installation of ambulance cars, radio communication devices and medical equipment for the ambulance center and five other medical institutions. Its scope is as itemized below.

1. Equipment as shown in the above-mentioned equipment plan table
2. Costs of maritime and land transport of the procured equipment and their domestic transport to the project institutions.
3. Installation of the procured equipment
4. Test working, operation, inspection, maintenance and management of the procured items of equipment

2) Other work to be carried out by the Kyrgyzstan side under the project

1. Provision of a facility to be used as a temporary office during the implementation of this project in each of the project institutions.
2. Provision of utilities (electric power, water supply, drainage, air-conditioning/ventilating equipment, medical gas, and other facilities) necessary for the implementation of this project and removal of the existing equipment in facilities where the newly procured equipment are to be installed.
3. Cleaning, repainting, repairing and putting in order the rooms where newly procured equipment are to be installed prior to the carrying of the newly procured equipment into such rooms.
4. Provision of routes of transportation of steam sterilizer and X-ray units, in particular, and making spaces for unloading them and apertures for carrying them into the rooms.
5. Securing rooms in which communication devices and switchboards are to be installed under this project, providing electric power to these equipment, conducting switchboard/telephone wiring, and changing the wiring on an as needed basis.
6. Taking steps to protect against radiation in the rooms where X-ray units are to be installed in compliance with the relevant Kyrgyzstan and international standard, and setting up an X-ray control room on an as required basis.

3-1-4 Implementation Plan

(1) Implementation System

This project is to be implemented by the following organizations.

1) Organizations Responsible for the Implementation of the Project

The Foreign Investment Economic Assistance Committee is the organization responsible for the management of implementation of this project and the Ministry of Health of Kyrgyz is the organization directly responsible for the implementation of this project. The Vice-Minister of

Health is to be responsible for actual operations to be carried out under this project.

2) Consultant

Since this project is to be implemented with the grant aid cooperation of the Government of Japan, a qualified Japanese consultant firm is to give guidance and advice and conduct coordination work in each of the stages of detail design preparation, bidding and execution, and carry out all other activities required to ensure the smooth implementation of this project.

Specific activities to be carried out by the consultant firm are:

* Detail design

Preparation of tender documents for use in the procurement of equipment

* Expediting the processes of bidding and signing of the procurement contract

Determination of the type of the procurement contract, preparation of a draft procurement contract, examination of the contents of the equipment installation instruction manual, and selection of a Japanese corporation to procure equipment (tender announcement, acceptance of tenders, evaluation of the tenders accepted, negotiations for the procurement contract and witnessing the signing of the procurement contract)

* Examination and approval of the working drawing submitted

Examination and approval of the equipment specifications, the working drawing and the scheme of execution, which are submitted by the Japanese corporation responsible for equipment procurement

* Reporting on the progress of work

Reporting the progress of work to the project implementing organization and other related organizations.

* Cooperation in the payment approval procedures

Cooperation in the examination of the details of the bills relating to remuneration for operations after loading and the payment procedures

* The consultant firm's other role in the process of work

Supervision of operations from the start to the completion of work.

3) Japanese Corporation to Take Charge of Equipment Procurement

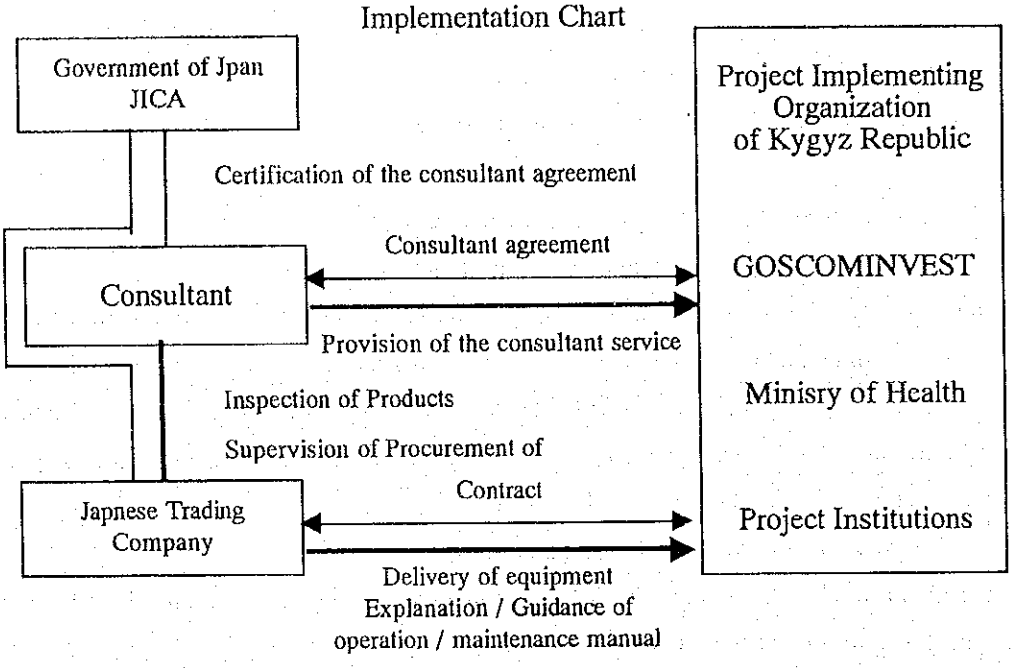
The procurement of equipment is to be carried out by a Japanese corporation (trading company) selected through bidding. Such Japanese corporation is to take charge of manufacturing, supplying, transporting and installing of equipment in accordance with the contract it concludes with the organization of Kyrgyz responsible for the implementation of this project, and deliver the equipment after giving guidance on operation, maintenance and management.

4) Japan International Cooperation Agency

The Japan International Cooperation Agency (JICA) is to direct the consultant firm and the Japanese corporation to take charge of equipment procurement to ensure that this project is

implemented properly within the framework of grant aid cooperation of the Government of Japan. The agency is also to consult with the organization of Kyrgyz responsible for the implementation of this project on an as required basis to expedite the implementation of this project.

The flowchart for the implementation of this project is as illustrated below.



(2) Detail Design and Supervision

The consultant firm is to conduct detail design and supervision of implementation in accordance with the consultant agreement it concludes with the organization of Kyrgyz responsible for the implementation of this project. Detail design means verifying the equipment specifications and preparing tender documents, which include specifications, a list of bidding requirements, and a draft equipment procurement contract.

Supervision means determining whether or not the Japanese corporation responsible for equipment procurement is carrying out its operations in accordance with the contract and ensuring that each provision of the contract is performed properly. It also includes giving guidance, advice and coordination from a fair stand point. Specific operations to be carried out by the consultant firm are as follows.

1) Stage of Detail Design

Preparation of working drawings, making preparations for bidding, drafting of the contract

2) Stage of Bidding

Prior screening of applicants for bidding, acceptance of tenders, evaluation of the contents of the tenders accepted, conclusion of the contract

3) Stage of Supervision

Supervision (examination/approval of equipment specifications, supervision of loading/maritime transport/inland transport, guidance on and supervision of equipment installation, supervision of the work carried out by the Kyrgyzstan side), reporting on the progress of works, and issuance of certificates. (The consultant firm is to attend equipment deliveries after confirming that the equipment installation work was completed in compliance with the contract, and its service is to be completed after receipt and approval of the equipment procured and installed by the organization of Kyrgyz.)

In addition to the above-mentioned operations, the consultant firm is to report the progress of this project, the payment procedures, the completion and delivery of the procured equipment to the Japanese government agencies concerned.

(3) Staffing Plan

The consultant firm's staff members to take charge of detail design and supervision are as follows.

1) Chief

The chief is to be responsible for the supervision of the consultant firm's service and the preparation of the equipment operation, maintenance and management plan.

2) Two staff members in charge of the medical equipment plan

These staff members are to be responsible for preparation of tender documents, verification of the equipment plan and supervision of work.

3) Staff member in charge of the equipment plan

This staff member is to be responsible for supplementary operations related to the communication device included in the equipment plan.

3-1-5 Equipment Procurement Plan

(1) Equipment Procurement

In principle, all required items of equipment are to be procured in Japan under this project. From the standpoint of equipment maintenance and management and the smooth procurement of replacement parts, reagents and consumables, however, the following items of equipment are to be procured in third countries. The precondition for equipment procurement in third countries is that equipment manufacturers have distributors in Kyrgyz, other Central Asian countries and Russia (Moscow) and therefore can provide after-sales services.

Equipment to Be Procured in Third Countries

Equipment	Third country
X-ray unit	European countries
Blood gas analyzer, Na, K, Cl analyzer	European countries
Thoracoscope, rigid respiratory broncoscope, endoscope	European countries
Respirator for infant	European countries

As for the X-ray unit and the respirator for infant, it is important to select the equipment produced by third country in consideration with easiness of periodical inspection by maker and experiences of local staffs.

(2) Methods of Transportation

1) Items of Equipment Procured in Japan

All of equipment procured in Japan are to be transported by sea from Port of Yokohama to Vostochny and then transported to Bishkek by Trans-Siberia Railroad trains. From Bishkek Station, they are to be transported to each of the project institutions by truck. It will take about 36 days to transport these items of equipment from Yokohama to each of the project institutions.

2) Equipment procured in Third Countries

All of equipment procured in European countries are to be collected in Frankfurt, Germany, and then are to be transported to Brest by rail after being grouped by destination. They are to be transported to Bishkek by rail after being transshipped in Brest. From Bishkek to each of the project institutions, they are to be transported by truck. It will take about 25 days to transport them from Frankfurt to each of the project institutions.

3) It will be necessary to leave both the equipment procured in Japan and those procured in third countries in safekeeping at each of the project institutions until they are installed. The equipment may be transported to destinations in leased containers.

3-1-6 Project Implementation Schedule

(1) Implementation schedule

When the Government of Japan approves this project in a Cabinet meeting and when the governments of the two countries sign the Exchange of Notes, this project is to be implemented as follows.

1) Signing of the Exchange of Notes by the governments of the two countries

2) Conclusion of the agreement for payment of funds by the Japanese side between the project implementing organization and the foreign exchange bank authorized by the Government of Japan (bank arrangement)

3) Conclusion of the consultant agreement between the project implementing organization and the Japanese consultant firm

4) Issuance by the project implementing organization of the written payment authorization concerning the consultant agreement to the consultant firm

5) Certification of the above-mentioned consultant agreement and approval for payment of funds by the Government of Japan

6) Preparation of tender documents by the consultant firm

7) The project implementing organization's approval for the tender documents and preparations for bidding by the consultant firm

8) Acceptance of tenders and evaluation of tenders accepted

9) Conclusion of the contract for sale of equipment between the project implementing organization and the Japanese corporation to take charge of equipment procurement

10) Certification by the Government of Japan of the above-mentioned contract

11) Issuance by the Ministry of Health of the written payment authorization for the contract for sale of equipment

12) Approval for the equipment manufacturing/shop drawings (examination and approval of the equipment specifications submitted by equipment suppliers, necessary instructions, and coordination with the Ministry of Health for the smooth progress of the project)

13) Witnessing of equipment inspections (The consultant firm is to witness pre-shipment equipment inspections and approve them on behalf of the Ministry of Health on an as needed basis.)

14) Supervision of work (In accordance with the consultant agreement, the consultant firm is to examine and approve the equipment specifications and individual items of equipment, supervise inland equipment transport, give guidance on and supervise equipment installation, and supervise the work carried out by the Kyrgyzstan side.)

15) Management of work progress (The consultant firm is to manage the progress of work and give necessary instructions to equipment suppliers so that the equipment procurement contract may be fully performed within the period of time as specified in the Note of Exchanges.)

16) Completion inspections and trial working (The consultant firm is to conduct inspections of the equipment installed and their trial working to ensure that each item of equipment functions as indicated in the specifications and submit the certificate of completion of inspections to the Ministry of Health.)

17) Completion and delivery

(2) Period of Implementation

1) Project Implementation Schedule

The periods of operations to be carried out by the Japanese side after the signing of the Exchange of Notes are as shown in the following table.

	Operation	Period
Detail Design	1. Contract of Consultant agreement, Discussion on detail design	0.4 months
	2. Detail design, Preparation of Tender document	1.0 months
	3. Approval for Tender document	0.6 months
	4. Tendering,, Contract, Certification	2.0 months
Procurement	1. Manufacturing of equipment	4.5 months
	2. Transportation	2.0 months
	3. Installation (Trial operation, adjustment, guidance / training, on Operation / maintenance manual, delivery, certification)	1.5 months
Total		12 months