BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF MEDICAL EQUIPMENT FOR

MINISTRY OF HEALTH, EDUCATION AND SPORTS
THE REPUBLIC OF KAZAKHSTAN

NO. 1

# BASIC DESIGN STUDY ON THE PROJECT FOR IMPROVEMENT OF MEDICAL EQUIPMENT FOR CHILDREN HOSPITALS IN ASTANA CITY IN THE REPUBLIC OF KAZAKHSTAN

OCTOBER 1999

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JAPAN INTERNATIONAL COOPERATION AGENCY
SYSTEM SCIENCE CONSULTANTS INC.

MINISTRY OF HEALTH, EDUCATION AND SPORTS
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# PREFACE

In response to a request from the Government of the Republic of Kazakhstan, the Government of Japan decided to conduct a basic design study on the Project for Improvement of Medical Equipment for Children Hospitals in Astana City and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Kazakhstan a study team from March 28, 1999 to May 6, 1999. The team held discussions with the officials concerned of the Government of Kazakhstan, 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 Kazakhstan 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 the Republic of Kazakhstan for their close cooperation extended tot he teams.

October, 1999

Kimio Fujita
President
Japan International Cooperation Agency

October, 1999

# Letter of Transmittal

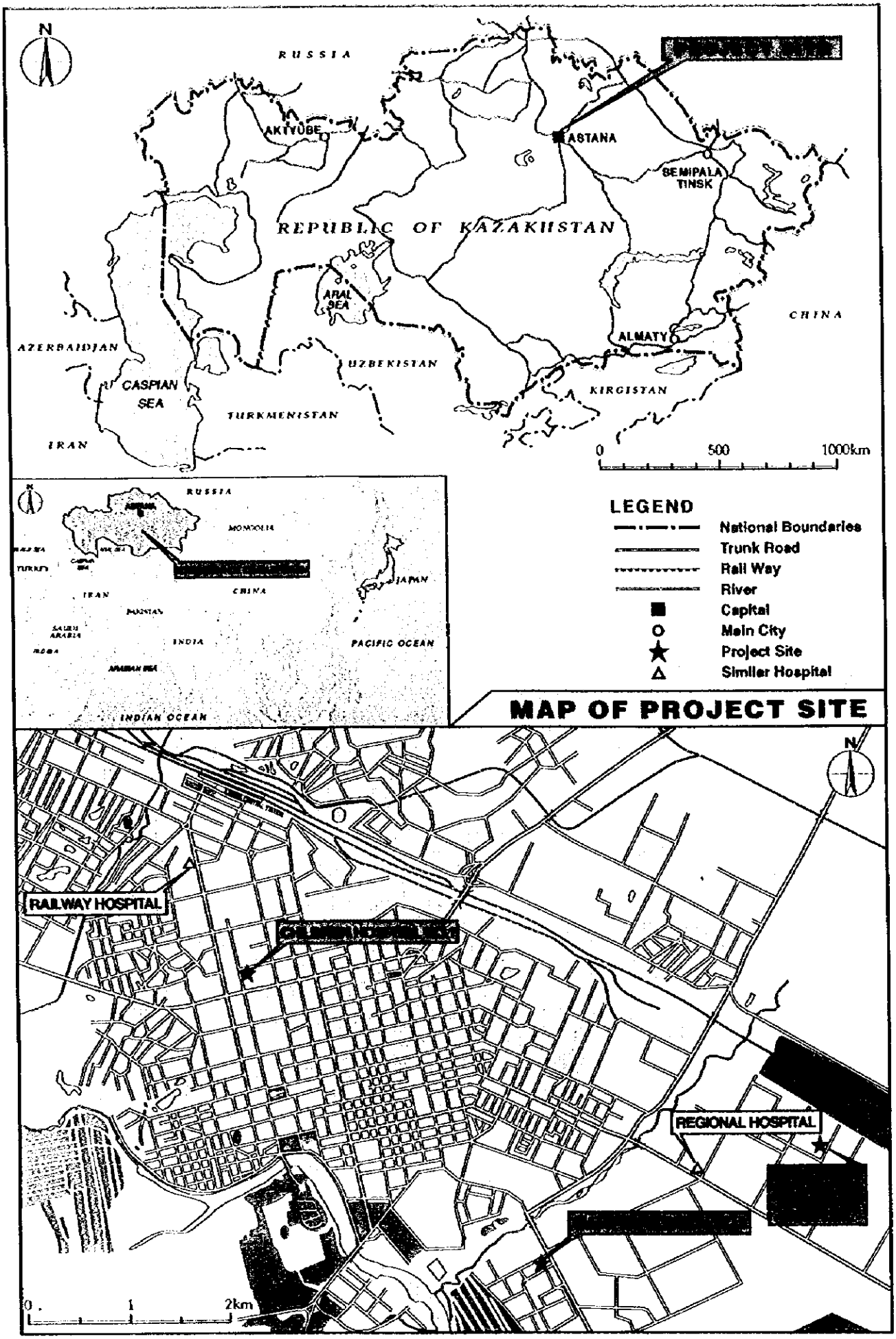
We are pleased to submit to you the basic design study report the Project for Improvement of Medical Equipment for Children Hospitals in Astana City in the Republic of Kazakhstan.

This study was conducted by System Science Consultants Inc. under a contract to JICA, during the period from March 28, 1999 to May 6, 1999. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Kazakhstan and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

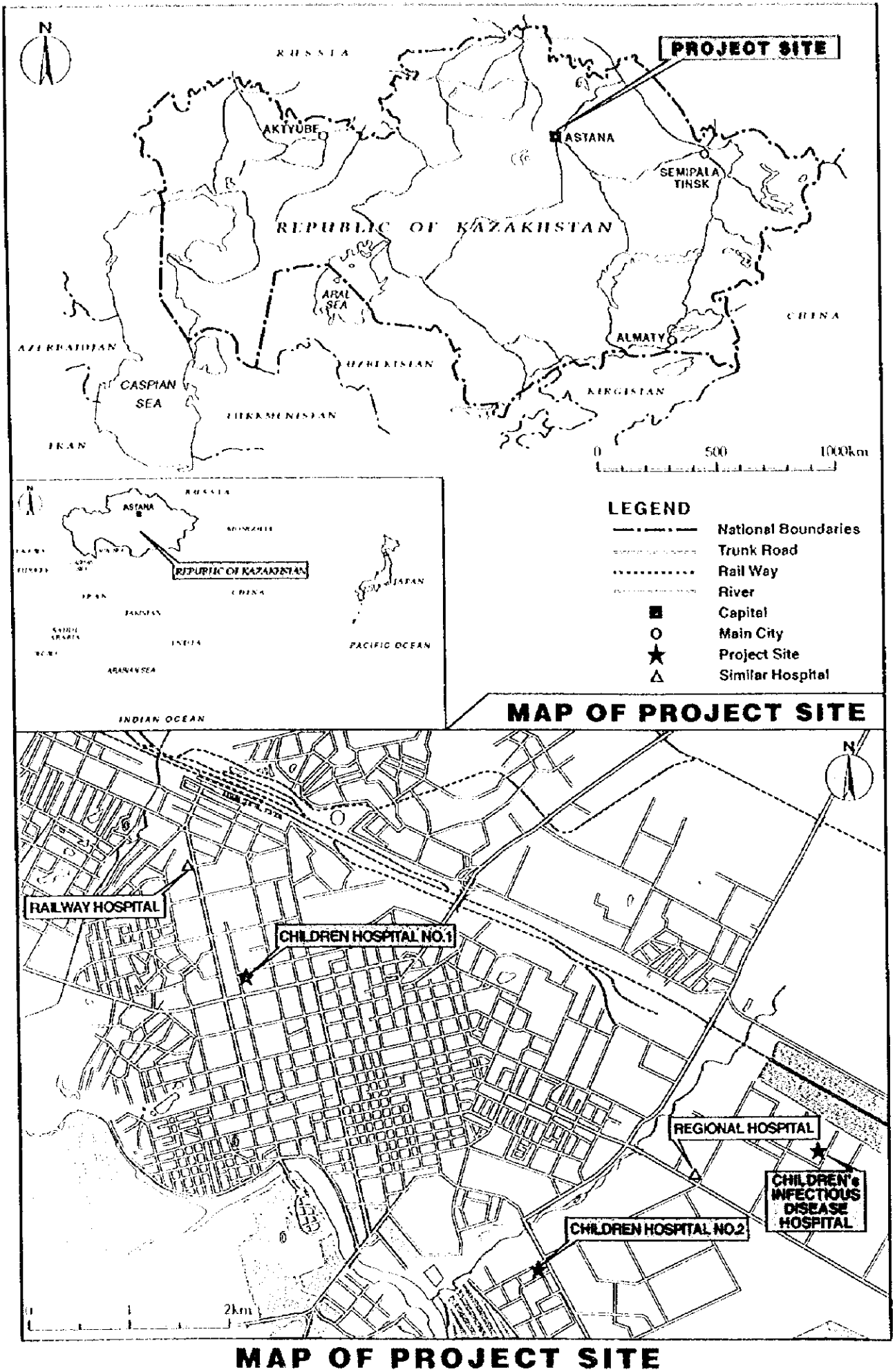
Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,

Norito Naito
Project Manager,
Basic Design Study Team on
the Project for Improvement of Medical Equipment
for Children Hospitals in Astana City
System Science Consultants Inc.




# MAP OF PROJECT SITE




MAP OF PROJECT SITE

# List of Abbreviations

| | |
|---|---|
| AIDS | Acquired Immuno-Deficiency Syndrome |
| ARI | Acute Resperatory Infections |
| AVR | Automatic Voltage Regulator |
| B/A | Banking Arrengement |
| BHN | Basic Human Needs |
| CT | Computed Tomography |
| E/N | Exchange of Notes |
| FAP | Feldsherski-Accoucheurski Punkt |
| GDP | Gross Domestic Products |
| GNP | Gross National Products |
| GOS | Government standard |
| GP | General Practitioner |
| GTZ | Deutsche Gesellschaft Fur Technische Zusammer |
| HIV | Human Immunodificiency Virus |
| ICU | Intensive Care Unit |
| IMF | International Monetary Fund |
| JICA | Japan International Cooperation Agency |
| MRI | Magnetic Resonance Imaging system |
| PHC | Primary Health Care |
| STD | Sexually Transmitted Disease |
| UNDP | United Nations Development Programme |
| UPS | Uninterruptiblr Power Supply |
| WHO | World Health Organization |

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# Chapter 1 Background of the Project

# Chapter 1 Background of the Project

## 1-1 Details of the Request

The Republic of Kazakhstan encompasses an area of 2.717 million square kilometers (about seven times the area of Japan) and has a population of 1,560,000 (1998). It borders five countries including Russia and China. Desert and semi-desert plains and flatlands comprise nearly half of the 3,200km area running from east to west and the Altai Mountains and Tien Shan mountain range are located in the south. The inland Caspian Sea and the Aral Sea are located in the west. The climate is continental and the difference in temperatures between day and night is large. Rainfall is limited and the annual volume of rainfall is about 250mm. The children s hospitals targeted by the Project are located in the new capital, Astana, which is on a plain about 1,000km northwest from the former capital, Almaty. Temperatures rise to 40°C during the peak summer season and drop to -40°C during the winter season; and the difference between the hot and cold seasons is 80°C. Blizzards commonly occur and the natural environment is harsh.

During the Russian revolution of 1917, Kazakhstan becomes an autonomous republic under the former Soviet regime for more than half a century. It became independent in December 1991 following the collapse of the former administration of the Soviet Union. Despite the production of natural resources such as coal and iron ore in the eastern area and the vast grain belt in the north, the economy has experienced stagnation and confusion in the shift from a socialist to a free market economy and the country is confronted by undeveloped infrastructure and inadequate resources.

With the introduction of its own currency, the tenge, in recent years (November 1993), the economy has shown signs of recovery with the advent of oil field development that has brought in foreign currency and the implementation of a separatist policy to disengage the country s currency from the Russian monetary system. The GDP growth rate has shifted to a plus since 1996, following a continued minus growth rate during the period of 1990 to 1994. According to a World Bank Report, an annual growth rate of 3 percent is anticipated in 2000. Per capita GDP has stabilized at an average of US$1,320 in 1996 to 1999. However, prioritising an economic policy based on macro economics produces an enlarged disparity in

income with a real GDP disparity of US$6,000 in incomes between the lower 20 percent of the poverty group and the higher 20 percent of the affluent group. Therefore, immediate countermeasures are need.

Health care conditions in Kazakhstan are characterized by a population of outflow to other countries, a lowered birth rate, a shorter lifespan due to an equalized mortality rate, and other deteriorating factors stemming from the social and economic instability in recent years. The major causes of death are circulatory diseases, malignant tumours, poisoning, and external injuries from accidents, and respiratory diseases. In addition, children under 14 years of age who comprise about 30 percent of the total population of Kazakhstan have a high contraction ratio of respiratory diseases, blood diseases, parasites and infections, acute digestive diseases, and malnutrition; and the high death ratio stems from respiratory diseases and parasites and infections.

In view of these social conditions, the president announced the national development plan, "Kazakhstan 2030" in 1998, and "The Health of the Nation Program" was compiled by the Ministry of Health, Education and Sports as a separate sector development plan in the same year. However, due to the continued economic stagnation, improvements to the infrastructure have not progressed and improvements to medical facilities and the task of replacing and supplementing medical equipment have lagged.

In 1997, the government of Japan implemented the "Project to Improve the Health Care Standards of Almaty Province", a technical assistance program for the southern region which provided grant aid assistance to improve the medical equipment of the National Akusai Children Hospital and the Regional Diagnostic Centers.

There are approximately 1,150,000 children in the four northern provinces; and the provision of improved facilities and equipment for the three regional pediatric hospitals (the First Municipal Children s Hospital, the Second Municipal Children s Hospital, and the Municipal Children s Infectious Hospital) have lagged. As the foremost medical facilities that are expected to provide early stage diagnoses and swift treatment in serious emergencies, they have not been equipped to attain adequate diagnostic capabilities. Moreover, Almaty City which is geographically located 1,000km away has made transporting patients difficult. Therefore, patients have been forced to utilize the facilities solely to undergo laparotomy for

diagnostic purposes or for treatment requiring long-term hospitalization; and they have not been able to receive swift and adequate health care service.

In view of these circumstances, the Kazakhstan government formulated a project to improve hospital equipment with the aim of establishing a system of pediatric care in the northern region, by replacing the existing, depreciated diagnostic and treatment equipment for adult patients and to supplement their number at the three municipal children's hospitals in Astana city. These hospitals are charged with providing top, comprehensive pediatric medical care for the four northern provinces. In order to implement this project, the Kazakhstan government requested the government of Japan for grant aid.

### 1-2 Summary of the Request

The equipment which was requested by the Kazakhstan side for this Project is shown as follows.

(1) Targeted Project Site : Astana city
Children Hospital No. 1
Children Hospital No. 2
Children's Infectious Diseases Hospital

(2) Requested Equipment

The equipment which was requested for the Project is diagnostic equipment, treatment equipment for patient, diagnostic equipment for each department, washing and sterilization equipment, ambulance, kitchen equipment for the nutrition section, and processing equipment for dairy products.

## Table 1 Equipment Requested for the Project

| Hospital | Category | Main equipment |
|---|---|---|
| Children Hospital No. 1 | Diagnostic equipment | X-ray stationary unit, Ultrasound stationary unit, ECG, EEG, Microscope, Blood gas analyzer, Biochemical analyzer, Blood cell counter, Centrifuge, etc. |
| | Treatment equipment | Ultrasonic Nebulizer, Neonatal monitor, Infant incubator, Ventilator, Infusion pump, etc. |
| | Equipment for each department | Ob'Gy treatment chair, Dental unit, Ophthalmology examination chair, ENT instrument set, etc. |
| | Cleaning & Sterilizing equipment | Washing machine, Autoclave, etc. |
| | Vehicle | Ambulance |
| Children Hospital No. 2 | Diagnosis equipment | CT-scanner, MRI, X-ray stationary unit, Ultrasound stationary unit, ECG, EEG, EMG, Spiroanalyzer, Spectrophotomater, Microscope, Blood gas analyzer, Biochemical analyzer, Blood cell counter, etc. |
| | Treatment equipment | Operation table, Anesthesia apparatus, Electrosurgical unit, Patient monitor, Defibrillator, Laser unit, Neonatal monitor, Infant incubator, etc. |
| | Equipment for each department | Sphygmomanometer, Weighing scale, Infusion pump, Ophthalmology examination chair, E.N.T.unit, Dental unit, etc. |
| | Cleaning & Sterilizing equipment | High pressure steam sterilizer, Autoclave, Hot air sterilizer, Ultrasonic washing unit, washing machine |
| | Vehicle | Ambulance, Mini bus |
| | Nutrition department | Refrigerator, Cooking tools |
| Children's Infectious Diseases Hospital | Diagnostic equipment | X-ray general unit, Ultrasound unit, ECG, EEG, EMG, Spiroanalyzer, Spectrophotometer, Microscope, Blood gas analyzer, Biochemical analyzer, Blood cell counter, Colony counter, etc. |
| | Treatment equipment | Ventilator, Pulse oxymeter, Phototherapy unit, Ultrasonic nebulizer, Patient monitor, Suction unit, Infant Incubator, etc. |
| | Equipment for each department | Sphygmomanometer, Weighing scale, Infusion pump, etc. |
| | Cleaning & Sterilizing equipment | High pressure steam sterilizer, Autoclave, Hot air sterilizer, etc. |
| | Vehicle | Ambulance |
| | Milk processing equipment | Milk processing equipment, Mini bus, Truck |
| Total item number approximately 250 | | |

# Chapter 2 Contents of the Project

# Chapter 2 Contents of the Project

## 2-1 Objectives of the Project

In 1998, the Republic of Kazakhstan announced the national development scheme called "Kazakhstan 2030", in which the republic gives top priority to health and welfare of the nationals as well as the economic development policy. In the scheme, emphasis is especially placed on "improvement in health conditions of mothers and children".

The hospitals (Astana City Children Hospital No.1, Children Hospital No.2, and Children's Infectious Diseases Hospital) subject to the Project are located in Astana city, which was designated as the new capital of Kazakhstan in December 1997 where infrastructures sufficient for the new capital have been being constructed. With 30% of its population under 14 years of age, the nation's health and medical situation is deteriorating due to decrease in population because of migration to other countries, and the lower level of life expectancy from the decreasing birth rate and the maintained mortality rate.

The objective of the project is to renovate and supplement the depreciated medical equipment and equipment vital to pediatric examinations and treatment at the three foremost children's hospitals in Astana city and in the northern Kazakhstan region (Akmola, North Kazakhstan, Kostanai, and Pavlodar states) which are also known for their training program in medical education. The aim is to stimulate the diagnostic functions of the targeted hospitals, to promote their medical education and training programs, and to contribute to improved pediatric services in the region.

## 2-2 Basic Concept of the Project

### 2-2-1 Cooperation Policy

Now that Astana city is the new capital, those hospitals are expected to possess in future the functions and responsibilities of medical facilities equivalent to those of the national level as the population grows along with the construction of the city. Kazakhstan's requirements, therefore, cover a wide range of contents such as milk processing equipment and vehicle for

Pharmaceutical transport, and expect the Project to provide the three hospitals with support by which they can become the top referral medical facilities with vision of the City's future. However, it is difficult to state that the activity is a diagnostic one directly implemented by the hospital, and those priorities are low in terms of urgency and replacement. Consequently, the basic plan of the Project, in principle, emphasizes examining the roles and functions of the hospitals against the trend and the number of the local patients, replacing or replenishing equipment urgently needed, and installing equipment that will be essential to solve the existing problems. A summary of the review is given below.

(1) In improving the functions of hospitals, the top priority will be given to equipment in the areas most commonly used (operation theaters, examination rooms, sterilization rooms, radiation rooms, laundry rooms, etc.), as well as in the reanimation room which may be most urgently required.

(2) To procure equipment for each special diagnosis and treatment department, existing problems in each department will be defined first. The equipment considered essential to solve the problems will then is selected for replacement or replenishment. Such equipment will be replaced to the extent relevant to the numbers of adult and child patients.

(3) New equipment is to be installed only when it is indispensable to respond to the demand.

(4) The medical equipment will take into consideration the roles of top referral facilities and medical education facilities (hospitals for internship) in pediatrics in the Astana City Health Sector Plan (Master Plan).

(5) The Project intends to develop common ownership and efficient utilization of medical facilities and equipment, with respect for Kazakhstan's laws and ordinances (e.g., the hospital management regulation to specify prohibitions of co-ownership of medical facilities and equipment in accordance with, and other laws regarding medical practice).

(6) The equipment will be procured to the extent where Astana city can afford the costs of operation, maintenance and management of the equipment within its medical budget.

### 2-2-2 Examination of the Request

The equipment requested in the Project will be reviewed in terms of need, urgency, and appropriateness according to each hospital's role, function, and current activities. The characteristics of the hospitals targeted by the Project and a summary of review are given below.

**Table 2 Characteristics of the Hospitals Targeted by the Project (Division of Roles and Functions)**

| Medical Facility | Target Population | Activities |
|---|---|---|
| Children Hospital No.1 | Neonatal and infants | · Premature babies care & neonatal treatment<br>· Neonatal internal treatment (incl. congenital diseases)<br>· Maternal & child health, family planning |
| Polyclinic No. 5 | Children in general (0-14 yrs) | · Primary medical care (outpatients)<br>· School health, mass children examination |
| Children Hospital No.2 | Children in general (0-14 yrs) | · General treatment (incl. internal & surgical)<br>· Surgical treatment (incl. operation & rehabilitation)<br>· Receipt of emergency patients<br>· Establishment of examination & diagnosis technology<br>· Surgical clinic training |
| Children's Infectious Diseases Hospital | Children in general (0-14 yrs) Infection-19 yrs | · Child infection treatment<br>· Infection control & remote observation |

(1) Astana City Children Hospital No.1

The Perinatal Center is responsible for handling births in Kazakhstan, however, neonates with abnormalities are taken mainly to the city's Children Hospital No.1 and if surgery is required, they are referred to the Children Hospital No.2. The Children Hospital No.1 is responsible for providing care in internal medicine and neurological care for neonates and infants with birth defects, as well as family planning. In addition, the Fifth Polyclinic which is under the management of the Children Hospital No.1 provides outpatient services and refers patients to the Children Hospital No.2 when necessary.

The Children Hospital No.1 urgently requires the following improvements.

- Renovation of the examination and treatment facilities of each department that is in keeping with hospitalization services for children.
- Improved testing facilities to implement tests required for pediatric treatment

- Improved sterilization, disinfection, and washing facilities to prevent contagion within the hospital.

1) X-ray Department

Electrocardiogram and some ultrasonography is carried out by the X-ray Department and there is a technician in charge of each equipment. In addition to children, adult outpatients from the Family Planning Department also utilize the services of this department. Although the ultrasound unit and other existing equipment are relatively new, a portable unit for use by the hospital ward for inpatients who cannot be moved is required. In addition to replacing existing depreciated equipment, a minimum number of new equipment is also required.

1-X-1 X-ray Stationary Unit / 1-X-2 X-ray Film Processor

The existing equipment is old and spare parts are difficult to obtain. In order to minimize the number of films needed for development, the Project will provide a stationary radiation photographic unit, which will enable fluoroscopy through a TV monitor, and an automatic film processor which will develop the film in a short time.

1-X-4 Electrocardiograph (ECG), 6-ch

The hospital conducts 2,000 ECG tests annually and the equipment is markedly depreciated. Therefore, a six-channel electrocardiograph that is capable of accommodating infants and adults, with electrodes suited for use with neonates, will be provided since many of the patients are newborns and infants.

1-X-93 Ultrasound Unit (Portable Type)

Presently, one new unit is being utilized; therefore, an additional unit will not be provided by the Project. However, a portable ultrasound unit will be provided to replace the existing depreciated unit.

1-X-94 X-ray Mobile Unit

In addition, a X-ray mobile unit will be provided to enable X-rays to be taken of sleeping neonates and infants in the hospital ward.

2) Reanimation Department (ICU)

The Reanimation Department has six beds and a 24-hour care system with one physician and two nurses. The existing equipment is not functioning adequately and further, the equipment is not suited for use with neonates. Nearly 90 percent of the patients suffer from respiratory diseases. It is important that an intensive care system for neonates is established since this is the only hospital in the entire state that specializes in medical care for neonates.

1-ICU-1 Ventilator for Infant

Despite the fact that 50 percent of the diagnostic care provided by the Reanimation Department is for neonates, the existing equipment which was manufactured in the United States in the 1980s remain in disrepair due to the lack of spare parts. Therefore, three units of ventilator for infants/neonates will be provided.

1-ICU-2 Resuscitation Table for Newborn Warming (Infant Warmer)

Currently, the department has four units made in Russia and one unit made in Hungary, but all are in disuse. Thermostat adjustments cannot be made and the timer is broken. These units did not originally belong to the Reanimation Department. Nearly 80 percent of the neonates that are hospitalized in the department are premature babies who have difficulty adjusting their body temperatures and show slight signs of jaundice. Therefore, three units with thermostat control and a jaundice treatment apparatus will be provided to replace three of the existing units.

1-ICU-3 Ultrasonic Nebulizer

Nearly all of the neonates that are hospitalized in the department suffer from pneumonia and a nebulizer is needed. The Project will replace the existing equipment, due to their markedly depreciated condition.

1-ICU-4 Neonatal Monitor

All of the existing equipment is in disrepair and need to be repaired in order to monitor patients for 24 hours. The Project will provide six units, a quantity which is equivalent to the number of beds in the department.

1-ICU-5 Suction Unit

Since nearly all of the patients suffer from pneumonia. The spontaneous respiration of neonates and infants, in particular, is debilitated and their phlegm requires suctioning. The existing equipment is depreciated; therefore, three units of portable suction unit will be provided.

1-ICU-6 Infant Incubator

The incubator is used to provide an environment with ideal temperature, humidity, and oxygen levels for neonates and underweight newborns. Three enclosed units, as opposed to the open infant warmer mentioned above, will be provided to replace the existing equipment.

1-ICU-7 Infusion Pump / Syringe Pump

Despite the fact that this equipment is vital to injecting liquid medicine, none of the existing equipment are of neonatal size. Therefore, four infusion pumps and two syringe pumps will be provided, a quantity, which is equivalent to the number of beds in the department.

1-ICU-8 Weighing Scale for Newborn

Although six units were requested, one unit will be provided by the Project since only one unit is sufficient for use by the department.

1-ICU-9 Refrigerator for Reagent, Test Materials & Blood

The refrigerator is used to store blood in readiness for transfusions. An unit with an easy-to-maintain glass door which will enable the interior to be easily seen in order to prevent erroneous injections, etc. during emergencies, was requested.

The Project will provide one unit.

1-ICU-92 Pulse Oxymeter

This equipment is useful in patient maintenance and although there is no existing equipment, the Project will provide two units in the event of one unit breaks down.

3) Neurology Department

The department has 40 beds and some of the major diseases which are treated are hypoxia, delivery asphyxiation, epilepsy, Basedow s disease, and others. The patients range in age from one month to 15 years of age, due to the need for continuous observation of patients suffering from cranial nerve disorder.

1-NE-1 Electroencephalograph (EEG), 18-ch

Although all patients suffering from headaches are tested using the EEG unit, its effectiveness has not been clearly established. However, it is commonly used in testing epileptic patients and therefore, one unit will be provided to replace the existing EEG unit.

1-NE-3 Electromyograph (EMG)

The EMG is vital for testing polio, acute muscular asthenia, muscular dystrophy, autoimmune and genetic diseases. One unit will be provided since it is essential to the early discovery of symptoms.

1-NE-5 Suction Unit

There are three depreciated units for adults currently in use in the department. Three new replacements that are suited for neonatal use will be provided.

4) Perinatal Rehabilitation Department

The department has 35 beds and provide care and treatment for premature and underweight neonates ranging from 800g to 2,500g. With the exception of acutely premature babies who are treated by the Reanimation Department, this department is responsible for the care of all other premature neonates. Due to the great number of respiratory diseases, major treatment measures utilize the suction unit and nebulizer to secure the respiratory tract, provide humidification, transfusions, etc.

1-PE-2 Infant Incubator

This equipment is essential for maintaining the temperature, oxygen, and humidity suitable for premature and underweight neonates. Two units will be provided in the event of mechanical failure, since this equipment is essential in the care of premature and underweight neonates.

1-PE-3 Nebulizer

To avoid the dry up air condition in winter season, three units of nabulizer will be provided by the Project.

1-PE-4 Infusion Pump / Syringe Pump

Due to the small physical size of an infant or child, the speed and time of the transfusions must be carefully monitored. However, there are presently no portable units in the department and due to the depreciated condition of the existing unit, three syringe pumps which can be combined with an infusion pump will be provided.

1-PE-5 Suction Unit

Portable suction unit is needed since the premature babies who are hospitalized in the department suffer from pneumonia and other combined symptoms. Therefore, three units will be replaced.

1-PE-91 Phototherapy Unit

All one-week old neonates show slight signs of jaundice. Neonates suffering from serious hyperbilirubinemia require immediate light therapy. The existing two units are depreciated and are unable to maintain an adequate amount of light rays. Therefore, two units will be provided as replacements.

5) Infant-Pediatric Department

This department handles neonates three to 28 days old who are born normally, but require medical care following their birth. As in the case of the Perinatal Rehabilitation Department, the existing equipment is depreciated, in disrepair, or unsuited for use with neonates; and replacing the equipment under the Project is appropriate. Therefore, based on the same criteria as the Perinatal Rehabilitation Department, the same type of equipment such as the infant incubator, nebulizer, infusion and syringe pumps, suction unit, etc. will be provided and the quantity will be decided accordingly.

1-NB-2 Sphygmomanometer for Infants

A sphygmomanometer used with adult patients is unsuited for use with neonates or underweight newborns; therefore, a sphygmomanometer for infants is needed. Two

units will be provided to ensure the accuracy of the equipment since this is basic equipment.

6) Family Planning Department

This department provides treatment for gynecologic disendocrasis, infertility, child gynecopathy, and tests for gynecopathy for women in their teens. A gynecologist for children and a specialist in gynecologic disendocrasis is in charge of the department. Although the department does not handle deliveries, they provide prepartum and postpartum care. Chromosomal tests for genetic diseases, guidance for births of second children, tubal sterilization, etc. are also provided.

1-FP-1 Microscope

Cells, smear preparations of secretions, and chromosome samples of sexually infectious diseases are observed using the microscope. The existing equipment is monocular with a natural light reflector and it is difficult to make accurate cellular diagnoses. Therefore, the existing equipment will be replaced in order to improve the test functions of the department.

1-FP-2 Obstetric/Gynaecology Examination Chair

The existing unit is rusted, bent, and unsafe for the patient. One unit will be provided as a replacement.

1) Clinical Laboratory Department

This hospital has 120 beds in total, and is comprised of the Polyclinic No. 5 (Fifth consultation clinic) which provides care for more than 800 patients per day and other four Polyclinics. In addition to inpatients, the number of referrals from clinics is large and the number of tests which must be conducted is anticipated to be very high. Due to the organizational reforms that were implemented, it has become difficult to utilize a single, all-inclusive regional testing service and hospitals must conduct tests within its own facilities, with the exception of bacterial testing.

The existing Russian made equipment is of inferior quality. In anticipation of the increasing number of tests that will be carried out, the laboratory equipment must be automated. In particular, the majority of the hospitalized patients are neonates and premature babies; and tests are able to utilize only a minute amount of blood samples.

1-CL-1 Blood Cell Counter

The number of tests confirming the anemic level of the mother and neonate is high, but the process of counting blood cells using the microscope is time-consuming and as a result, the laboratory has been unable to keep up with the demand. This automatic unit will allow uniform accuracy even in monitoring activities.

1-CL-2 Biochemical Analyzer

Due to the minimum amount of blood samples that can be obtained from neonates and infants, an analyzer that will enable analyses of a minimum amount of blood samples is needed.

1-CL-3 Electrolyte Analyzer

This unit is required for emergency testing where quick results are needed. Therefore, it will be automated.

1-CL-4 Spectrophotometer

The items that were measured using the biochemical analyzer will be tested manually. The existing depreciated unit will be replaced since a new biochemical analyzer will also be provided.

1-CL-5 Microscope, Binocular

The accuracy of the magnification, imagery, and operation of the existing equipment is poor. A unit with a magnification ratio of 1000 times and illuminating power is needed for hemograms, fluid tests, and urinary sediment tests. Therefore, two units will be provided to replace the existing equipment.

1-CL-7 Blood Gas Analyzer

One unit will be provided since it is needed to maintain the metabolism of premature babies and neonates in the Reanimation Department, despite the fact that it is a new item for the department.

1-CL-9 Bilirubin Analyzer

Maintaining the bilirubin blood levels in neonates and premature babies is vital and swift action must be taken according to the degree of concentration found. Therefore,

one unit will be provided, separate from the biochemical analyzer, due to such problems as test frequency and the amount of blood samples needed.

1-CL-10 Coaglometer

A semi-automatic unit will be provided in view of the number of coagulation tests and to lessen the cost of consumables.

8) Laundry

The laundry equipment has been in use since the hospital was established. Presently, two units of the four units available are out of order due to the lack of spare parts. The Epidemic Center attempted to close the laundry, but due to the lack of an external laundry facility, it has continued its operations. A washing machine, hydroextractor, dryer, and ironing unit will be provided to improve the sterilization, disinfection, and washing facilities of the hospital.

9) Polyclinic No. 5

The Polyclinic No. 5 (Fifth consultation clinic) is affiliated with the Children Hospital No.1 and the five clinics in Astana city, but it is the only facility that provides care for children up to the age of 15. The other clinics provide medical care solely for children residing in Astana city, but the Polyclinic No. 5 accepts outpatients from the entire Akmola region. The average number of outpatients per day is about 800. Therefore, this Project will provide basic equipment needed for school health and health examinations for Polyclinic No. 5.

1-PC-1 Dental Unit with Chair and Air-compressor / Dental Instrument Set

One unit of equipment for oral and dental examinations and one set of instruments for dental treatment will be provided.

1-PC-3 Opthamology Chair Mounted Unit and Diagnostic Set

One examination chair that will enable treatment of conjunctivitis, near-sightedness, the extraction of foreign substances, etc. and one set of diagnostic instruments will be provided.

1-PC-4 Electrocardiograph (ECG)

One unit will be provided for diagnoses of children s heart diseases and abnormalities.

10) General Hospital Equipment

Due to the need for an ambulance to transport neonates from the Perinatal Center, a medical team was organized to transport neonates in acute condition to the hospital; and an ambulance with a German made incubator and ventilator was in use until 1997. Presently, emergency patients are inadequately transported using an ordinary ambulance. A vehicle equipped with resuscitation equipment is needed, but due to the existing ordinance, the purchase of an ambulance has been prohibited.

1-G-2 Ambulance

The transport of patients from the home or public location is not permitted by the city ambulance service by Emergency Station. Hence the transport of referrals from the maternity hospitals or Perinatal Center to the hospital must be resolved by the hospital. In addition, an ambulance with a four-wheel drive is required to transport emergency patients from the Polyclinic and clinics to the hospitals due to the prevailing road conditions.

(2) Astana City Children Hospital No.2

The Children Hospital No.2 is a large facility with 300 beds and it is the sole provider of comprehensive pediatric care in the northern Kazakhstan region. Approximately 70 percent of the patients utilizing the hospital require surgery and hospitalization and with the exception of heart surgery, all other forms of surgery are provided. Medical equipment has not been replaced or improved since its establishment in 1991 and used equipment received from other medical facilities are presently in use. The majority of this equipment is for use with adult patients and it is greatly depreciated and needs to be replaced.

- The major objectives for improving the equipment at this hospital are as follows.
- Improve hospital operations by replacing the equipment utilized jointly.
- Promote diagnostic activities by replacing the depreciated equipment in each department.

- Improve the accuracy of diagnostic measures by providing automated equipment for the clinical laboratory
- Improve the capability to carry out swift diagnostic measures by replacing and supplementing the diagnostic equipment.

1) X-ray Department

The X-ray Department carried out 14,000 cases of plain radiography in 1998. Due to the large number of surgery patients, the department is in need of a general X-ray unit in order to accurately pinpoint the operative area without the use of contrast media. Therefore, in addition to replacing the depreciated plain X-ray unit, an X-ray mobile unit for patients slated for surgery and who can not be moved and an automatic film processor that will enable swift decision-making in emergency surgery cases are needed. Replacing and supplementing depreciated equipment, as well as providing a minimum level of new equipment is required.

2-X-1 CT Scanner

CT Scanner will be set up by the Project, as will be seen later in "(4) Review of High Cost Equipment".

2-X-2 MRI

Due to the cost performance and other reasons stated in "(4) Review of High Cost Equipment", MRI shall be rejected in this Project.

2-X-3 X-ray Stationary Unit

The existing equipment is an old model manufactured in 1989 and due to the unstable supply of spare parts, repairs have not been effective and operating problems have arisen. One new unit will be replaced by the Project.

2-X-10 Ultrasound Stationary Unit

Although echography is a function test, it is also utilized in image diagnoses by the X-ray Department. An ultrasound unit with a color Doppler is particularly useful in diagnosing children with congenital heart diseases since it does not place physiological stress on the child. Since the existing stationary unit does not enable the observation of

blood flow and can not be moved to the hospital ward, a portable ultrasound unit and a stationary ultrasound unit with a color doppler function will be provided.

2) Reanimation Department (ICU)

The Reanimation Department (ICU) presently has six beds, but due to their overuse as a recuperation room following surgery, there are plans to install a separate recuperation room in the ward to enable the department to revert back to its original function as an ICU. However, the hospital lacks adequate basic respiratory maintenance facilities such as patient monitors, ventilator, infusion pump, nebulizer, oxygen supply unit, etc. Hence life support bedside equipment equivalent in quantity to the number of beds in the department will be provided by the Project.

2-ICU-1 Ventilator for Infant / 2-ICU-2 Ventilator for Children and Adult

Although the department specializes in the treatment of children, their ages range from the neonate to 18 years of age. Therefore, the Project will provide two ventilators for use with infants/neonates and three units of universal type ventilators for care of school age children.

2-ICU-5 Infant Incubator / 2-ICU-7 ICU Bed

The existing number of beds which are depreciated will be replaced since they lack the proper frames required to accommodate the bedside equipment. In addition, three infant incubators that will maintain appropriate temperature and humidity levels will be provided for infants undergoing surgery.

2-ICU-8 Defibrillator

Two defibrillators with pads for use with children will be provided by the Project to enable emergency patients suffering from fibrillation stemming from shock, spasms, etc. to be treated in the ICU and operation section.

2-ICU-16 UV Extracorporal Blood Disinfection Unit

This equipment circulates patient's blood externally and expose UV-ray to sterilize toxin in the blood. This treatment is one of the therapy developed by former Soviet Union medical remedy. However, this treatment is not clarified for its impact and too unique to evaluate. Therefore, the Project will reject the equipment.

3) Function Diagnostic Examination Department

Although the department is fully equipped, the equipment is old, the number of commonly used channels on the equipment is missing, and the electrodes are suited for use with adult patients rather than for infants. Therefore, one electrocardiograph (ECG), one spiroanalyzer, one echoencephalography (EEG), and one electromyograph (EMG) will be provided to enable different physiologic function tests to be conducted.

2-EX-6 Eletroencephalograph (EEG) / 2-EX-9 Mingograph

One eighteen-channel EEG will be replaced by the Project instead of the echoencephalograph required.

Also the Mingograph will not be provided by the Project since the echoencephalography and the electromyograph are capable of testing patients suffering from headaches.

2-EX-7 Electrocardiograph (ECG), 6-ch / 2-EX-8 Electrocardiograph (ECG), 1-ch

One six-channel ECG capable of recording 12 inductions and one mobile one-channel unit for use in the hospital ward for monitoring purposes will be provided.

A multichannel cardioanalyzer to analyze Holter's electrocardiogram will not be provided by the Project in view of the patients needs and cost.

4) Endoscopic Department

Due to the inadequate fiberscope and X-ray equipment, endoscopy has been substituted for function tests of adults. The Project aims to improve the entire examination and diagnostic section of the hospital and overdependence on endoscopy is anticipated to decrease. But endoscopy for children is necessary in treating serious burns, etc. of the esophagus. One fiberscope for use with children that is capable of examining the digestive organs (stomach, duodenum, colon), bronchus, abdominal cavity will be provided by the Project in order to eliminate excessive tests.

2-ES-10 Endoscope Cleaning Set / 2-ES-10 Ultrasonic Washing Unit

In order to prevent the spread of contamination within the hospital, an portable ultrasonic washing unit is needed due to the inadequate washing and storage facilities for instruments. This equipment will be provided by the Project since it is needed to store the new endoscope.

5) Surgery/Urology Department, Orthopedic/Traumatology Department, & Cardiohematology Department

Basic instruments used in regular diagnostic work are either incomplete, damaged, or are for use with adult patients. As all three of these departments perform relatively major surgery and medical treatment, the Project will be limited to providing examination tables, beds, and basic diagnostic instruments.

6) Operation Department

There are currently five operation rooms (planning, emergency, infections, surgery/urology, and ophthalmology) and under the existing ordinance, shared facilities are not allowed. Basic surgical facilities such as a surgical table, surgical light, anaesthetic instrument will be provided for each surgery room in anticipation of shared facilities in future. However, a surgical table and instruments will be provided specifically for the ophthalmology and urology departments, which require separate facilities. In addition, a suction unit for newborns, an electric surgical apparatus to minimize the need for laparotomy, abdominal cavity mirror monitor, etc. will be provided since the patients are children.

7) Ophthalmology Department & E.N.T. Department

These departments are mainly concerned with treating common disorders such as tonsillitis, tympanitis, conchitis, conjunctivitis, to anomaly correction, fractures, etc. As the patients are children, the work is delicate and many of the diagnostic instruments are also delicate. Therefore, basic instruments such as microscopes, test apparatus, and instruments will be provided, but equipment for laser treatment or surgery will not be included.

8) Dental Department

This department is mainly concerned with dispensing oral hygiene services and does not carry out oral surgery. Therefore, a dental unit and dental examination instruments will be provided.

9) Rehabilitation Department

The benefit of rehabilitation measures are an important factor to a hospital providing surgery. However, the priority of the Project objectives is in the area of diagnosis and

treatment rather than quick recovery. Hence, only equipment required to carry out urgent treatment measures of hardening connective tissues in the orthopedic field will be provided, due to the difficulty in substantiating the effects stemming from differences in medical technology under the former Soviet system.

10) Clinical Laboratory Department

All of the biochemical tests of major city hospitals were carried out by the Central Testing Center until March 1999. However, following organizational reforms, the center was abolished and each hospital has had to implement their own tests.

Presently, the Clinical Laboratory Department is largely divided into the general laboratory and emergency laboratory centered on biochemical tests needed in emergency cases that are handled by the Reanimation Department (intensive care unit). However, the majority of the tests are carried out manually; and under the existing conditions, the hospital is unable to provide adequate testing services for the 10,000 inpatients and 15,000 outpatients that are handled annually.

A segment of the laboratory equipment will be automated under this Project and the general laboratory will be reorganized as the main facility for handling daily routine tests and the emergency laboratory adjacent to the Reanimation Department will handle tests; requiring quick results. For manually operated equipment, new basic equipment used in manually conducted tests (microscope, etc.) will be provided and an overall improvement of the laboratories will be targeted.

2-CL-1 Biochemical Analyzer

The laboratories handled approximately 15,000 cases according to 1998 records, but this figure reflects the number of tests carried out for patients in the Reanimation Department (6 beds). If the number of tests were estimated to include the number of hospital beds (300), the number of outpatients (about 50 patients/day), and patient trends from other hospitals, approximately 240,000 test samples for 30,000 patients are handled annually.

If equipment that enables the analyses of 180 samples/hour to be carried out, tests for about 100 patients/day (approximately 30,000 patients/year) will be possible.

The dry chemistry type of reagent requested by the Kazakhstan side is high in cost and the storage period is short. Therefore, it has been concluded that this type of reagent is

difficult to maintain under the existing maintenance system and the conventionally used reagent will be selected.

2-CL-2 Spectrophotometer

Although the provision of an automatic analyzer for biochemical tests will systematize major test items, it will not include all equipment; and tests must also be carried out manually.

The existing equipment was manufactured in the former Soviet Union and it is depreciated, the wavelength is low, and a large amount of sample is required, which makes the equipment unsuitable for tests involving children. The Project will provide one replacement of the existing equipment.

2-CL-3 Centrifuge

The hospital currently has two antiquated units of which one is unrepairable. The other unit has an inadequate rotator and samples are not appropriately centrifuged. A centrifuge with a basket capable of accommodating test tubes is needed. A general purpose centrifuge and a centrifuge with a hematocrit will be provided for the central (general) and emergency laboratories; and a total of four units will be provided by the Project.

2-CL-4 Water Distiller

In conjunction with the provision of a biochemical analyzer, automatic analyzer, etc., there is a need for distilled water. The existing water distillation unit is greatly depreciated with rusted areas. In addition, since it is a first stage water distillator, the degree of distillation is low. Therefore, providing a new unit will raise the distillation level of the water and it will provide a pure water supply for washing instruments.

2-CL-6 Microscope

There are five monocular, natural light reflection microscopes currently in use which are depreciated, low in power, and are inadequate for laboratory use. Although ten units were requested, it was concluded that only five of the existing units would be replaced by the Project, in view of the fact that all ten-laboratory staff members would not be utilizing the microscopes simultaneously. The new units, which will be provided, will be binocular, halogen types with a magnification ratio of 1000 times.

2-CL-7 Osmometer

Although the usefulness of an osmometer is recognized, osmotic pressure can generally be estimated from other general analytical test results. In view of reagent costs and the number of patients tested, the benefits are minimal. Therefore, this item of equipment will not be provided in the Project.

2-CL-10 Blood Cell Counter

The blood cell counter is one of the most commonly used units in general tests for confirming the density, composition, and other important basic factors. An automatic analyzer with specifications capable of measuring the major eight test items (RBC, WBC, PLT, HGB, HCT, lymphocytes, monocytes, and granulocytes) will be provided. Tests for other factors will rely on manually conducted tests.

2-CL-11 HIV Test Kit

Although it is exceedingly important for all blood samples, blood for use in blood transfusions, and blood derivatives to undergo testing for HIV/AIDS contamination, an HIV/AIDS test set will not be provided by the Project since such tests are presently available at the AIDS Center in Astana city.

2-CL-12 Electrolyte Analyzer

Electrolyte tests (Na, K. Cl, Ca) are useful for determining an organism s homeostatic maintenance. Therefore, one unit, separate from the Central Laboratory, will be provided for the Emergency Laboratory for use at night for patients of the Reanimation Department. Electrolyte testing for routine tests will be possible with the biochemical analyzer which will be provided for the Central Laboratory.

2-CL-13 Blood Gas Analyzer

This unit is used to test the oxygen and carbon dioxide saturation levels in the blood for emergency intensive care patients as in the case of electrolyte tests. Therefore, one blood gas analyzer will be provided for the Emergency Laboratory to carry out tests for emergency cases.

2-CL-14 Electrophoresis Apparatus with Densitometer

Measurements of isozyme in oxygen through electrophoresis are useful in diagnosing infectious diseases for children. Although these measurements are easily made, they can not be made by other types of equipment. Therefore, one set will be provided by the Project.

2-CL-15 Coaglometer, Handy Unit / 2-CL-16 Hemometer, Handy Unit

These items of equipment will not be provided by the Project since these measurements are possible using the biochemical analyzer, the coaglometer, and the blood cell counter which will be provided for the Central Laboratory.

2-CL-21 Fume Hood

The fume hood is used to protect the technician from directly inhaling toxic gas when adjusting reagents using strong acids, etc. In addition, an exhaust unit is needed when handling urine and stool samples. The existing fume hood is a wooden, hand made unit and the exhaust unit and the duct is not functioning due to depreciation. Therefore, a fume hood with an exhaust unit will be provided by the Project.

2-CL-22 Coaglometer

The blood-coagulation test is always carried out prior to surgery and it is also useful for determining the blood-clotting factor for blood disorders (leukemia, etc.). However, when this test is carried out manually, it is a time-consuming task since one technician must remain with the patient. In order to raise the work efficiency of the laboratory and its technicians, an automatic analyzer will be provided.

11) Pharmacy Department

This section is concerned with adjusting the transfusions given to patients and it is continuous work. Therefore, this Project will provide an electronic scale, autoclave, refrigerator, and other equipment that is needed in the work of adjusting reagents, sterilization, and storage.

12) Sterilization Department & Laundry Department

Due to the large number of surgeries and surgical treatment carried out by this hospital, careful washing and sterilization of hospital linen stained with body fluids and tissue must be carried out to avoid contamination. However, difficulty in transporting the

laundry to the sterilization room, its limited operation, the depreciation and mechanical breakdown of the washing machine, and the lack of spare parts needed for its repair have all been impeding factors. Therefore, general laundry equipment such as a washing machine, hydroextractor, dryer, and ironing unit will be provided in order to improve the washing, disinfection, and sterilization facilities of the hospital.

13) Emergency Reception - Diagnostic Department

One nebulizer, one anaesthetic instrument, one ventilator, and one suction unit will be provided for primary treatment of emergency patients who are in need of immediate respiratory and life support assistance enroute to surgery. In addition, basic instruments such as the sphygmomanometer, weighing scale, stethoscope, etc. for use with infants will be provided for regular emergency outpatient services.

14) General Hospital Equipment

2-G-4 Ambulance

There is presently one greatly depreciated ambulance that was provided under the former Soviet system. In addition, the vehicle was not manufactured as an ambulance and it is unsuited for transporting patients. As a result, it poses serious problems in transporting patients requiring emergency surgery to the hospital and other medical facilities, as well as to the outlying region. In addition, the hospital is prohibited from purchasing another motor vehicle under the current ordinance, despite the great need to replace the existing ambulance. Therefore, it has been concluded that it is appropriate for the Project to provide an ambulance in view of the road conditions in the region.

2-G-8 Air Conditioner

The operation room is located on the sixth floor of the hospital where the room temperature exceeds 30°C in winter. Due to the difficulty in moving the operation rooms to another floor, the prevailing inferior sanitary environment, and the need to shut out the outside air, one air conditioning unit will be provided for each rooms.

2-G-91 Stretcher / 2-G-92 Wheelchair

Each five unit of these items will be provided due to the large number of surgeries and surgical treatment carried out by the hospital and the difficulty in transporting surgery patients from the ward to the examination rooms and laboratories.

15) Nutrition Department (Kitchen)

The existing equipment is capable of preparing the meals for inpatients. The priority objectives of this Project is to improve the areas of diagnosis and treatment rather than improving the nutritional needs and services of the hospital. Therefore, the Project will be limited to replacing the refrigerator and boiler since the existing equipment is currently out of order.

(3) Astana City Children's Infectious Diseases Hospital

According to the medical system of Kazakhstan, patients with infectious diseases are required to be quarantined. Hence children suspected of infectious diseases are either referred from other medical facilities or go directly from the home to the city s Children's Infectious Diseases Hospital . However, patients with infectious diseases are sent to the Children Hospital No.2 for surgery and are sent back to the Children's Infectious Diseases Hospital following surgery for continued treatment. Therefore, the major activities of this facility is diagnoses to determine the existence of an infectious disease, patient monitoring, and treatment in internal medicine. Although patients are under the age of 18 years, patients older than this age limit also receive outpatient and hospitalization care since the treatment is continuous.

The Children's Infectious Hospital is in urgent need of the following improvements.

- Improve the diagnostic section to enable accurate diagnoses of infectious diseases.
- Improve the test facility to achieve accurate identification test of infectious diseases.
- Establish a system of care for patients with acute infectious diseases.
- Establish a nursing system with monitoring capabilities of infectious disease patients.
- Improve the sterilization, disinfection, and washing facilities of the hospital.

1) X-ray Department

In order to differentiate between enteric infections and other intestinal disorders and to determine tuberculosis, etc., lung and abdominal X-rays and monitoring of recuperation tests are carried out by the department.

3-X-1 X-ray Stationary Unit (X-ray scopy and graphy)

The existing equipment are 1988 models made in Czechoslovakia and the Soviet Union. The quality of the unit is poor, the table is cracked, and depreciation is marked. Although 3,000 cases were handled in 1998, there was difficulty in obtaining spare parts due to the age of the model. As a result, emergency patients requiring X-rays were transported to other hospitals.

In order to minimize the number of films needed for development, the Project will provide a radiation photographic unit which will enable fluoroscopy through a TV monitor and an automatic film processor which will improve the film resolution of development.

3-X-93 Ultrasound Unit (Portable)

This equipment examines abdominal and cardinal organs morphologically, and its examination doesn't give any burden for patients. Especially infants who cannot stop moving during examination can be tested easily.

On the other hand, the infected patients must be isolated from other people, therefore for these isolated patients need to be examined using portable equipment to stay in their ward.

2) Reanimation Department (ICU)

The vital signs of patients suffering from acute respiratory diseases, fulminant hepatitis, vomiting blood, shock, etc. are monitored 24 hours. However, due to the breakdown of the bedside monitors, the monitoring system is inadequate. A minimum level of respiratory maintenance and a drug dosing system is required.

3-ICU-1 Ventilator for Infant, Ventilator for Child and Adult

The existing ventilator is out of order and a replacement is needed. Due to the large number of infants with repiratory diseases, a ventilator for use with neonates and infants

is required. Two units of infant use and one unit of universal use will be provided to replace the existing three ventilators.

3-ICU-4 Bedside Monitor

This unit is needed when monitoring patients suffering from asthma attacks, shocks, etc. for 24 hours. The existing equipment is in disrepair. Hence, nine units will be replaced in accordance with the number of beds.

3-ICU-91 Suction Unit

Due to the large number of children suffering from respiratory ailments, the suction unit is invaluable for stabilizing respiration and a suction unit for use with children is needed. Therefore, two units will be provided.

3) Function Diagnostic Examination Department

The function diagnostic - examination section conducts function tests for common children diseases such as infectious endocarditis, rheumatic heart disease, etc., lung function tests for acute infectious diseases, and cerebral function tests for meningitis, encephalitis and others. Due to the inability to refer patients with enteric infections stemming from external injuries, function tests are necessary not only for diagnosing infectious diseases, but for diagnosing combined symptoms of other diseases. Unfortunately, due to the inability to replace the existing equipment, much of the tests are carried out at the Children Hospital No.2 which has a division for infectious diseases. Consequently, the patient is greatly burdened by having to transfer from one facility to another. Therefore, establishment of diagnostic system in the hospital is necessary.

3-EX-4 Spiroanalyzer

This unit is needed to carry out lung function tests for asthma, pulmonary emphysema, bronchitis, etc. Since the department lacks this equipment, the tests are implemented at another medical facility. However, due to the basic quarantine policy for patients with infectious diseases, only a minimal number of such tests are consigned. A total of 57 tests were consigned in 1998. Therefore, in order to alleviate the burden on the patient, it is considered appropriate for the Project to provide one unit, since it is a basic equipment item for tests and in view of the large number of patients with acute respiratory ailments.

3-EX-5 Electrocardiograph (ECG), 1-ch / 3-EX-91 Electrocardiograph (ECG), 6-ch

The ECG is the first test that is carried out for such diseases as infectious cardiomyopathy, pericarditis, shock, etc. Approximately 1,300 tests were conducted on one ECG unit in 1998, but the same number of existing depreciated units will be replaced by the Project.

3-EX-92 Electroencephalograph (EEG), 18-ch

The hospital currently does not have an EEG. Consequently nearly 500 tests were consigned to other hospitals in 1998. The EEG is useful for diagnosing epilepsy and cerebral concussions which are common ailments among children. It is a basic test item which alleviates the burden on the patient. Therefore, one unit will be provided by the Project.

4) Endoscopy Department

Presently, five endoscopes are in use for the thoracic, bronchus, and other respiratory areas, the digestive tract, and abdominal cavity. However, due to inadequate washing and storage units, an ultrasound washing unit for endoscope tools is needed to prevent contagion. Therefore, an endoscope cleaning unit and ultrasound washing unit will be provided.

5) Intestinal Infectious Disease Department, Virus Infectious Disease Department
Aerial Infectious Disease Department

The ward is divided between these three departments. Each ward will be provided with a separate weighing scale, sphygmomanometer, nebulizer, infusion pump, etc. to prevent the spread of infectious diseases among the patients in the hospital.

6) Clinical Laboratory Department

This department is concerned with conducting biochemical tests, blood tests, general tests, and serum tests in order to confirm the leucocyte count for infectious diseases and the increase and decrease of oxygen, smear preparation, etc. Confirming the progress of an infectious disease is highly important in its treatment and the stable, swift and accurate test results of a patient s blood, urine, stool, and sputum is demanded. However, many of the tests are conducted manually and the number of tests which can be implemented per day is limited. As a result, emergency test results take more than

one hour to obtain and the laboratory functions need to be improved. Therefore, a segment of the laboratory equipment will be automated to improve efficiency and to increase the scope of tests conducted by technicians who have had to rely on manual examination.

3-CL-1 Blood Cell Counter

Presently, more than 40,000 blood tests for blood cell count, hemogram, blood coagulation, etc. are conducted annually. Preparation for the hemogram and blood-coagulation tests will be automated, but the final stages of the test will be conducted manually. Therefore, an automatic blood cell counter will be provided to reduce the time and to enable uniform operations.

3-CL-2 Biochemical Analyzer

A segment of the biochemical tests will be automated in view of the urgent demand for quick results of emergency tests and high frequency number of test items (5 to 8 test items) which are needed within the hour. In contrast, low frequency tests and tests requiring the use of costly reagents will be conducted manually.

3-CL-4 Spectrophotometer:

A spectrophotometer is used when biochemical tests are carried out manually. The existing unit is depreciated, rusted, and has a blinking light. It was manufactured in the Soviet Union and spare parts are difficult to obtain. One unit will be provided to replace the existing unit. This equipment has meaning not only manual type for some diagnosis but also back up unit for the automated biochemical analyzer, retesting of abnormal data or establishing accurate data between the two differing equipment.

3-CL-8 Blood Gas Analyzer

Although there is no existing unit, this equipment is important in testing the respiratory and metabolic functions of patients on the verge of life or death. An automatic unit is appropriate since the test samples change with time.

7) Bacteriology Laboratory Department

This department is central for conducting bacterial tests for infectious disease diagnoses and it is responsible for separating the bacteria, virus, and culture of sputum, blood, urine, stool, vomit samples.

3-CLB-91 Autoclave

This equipment is used for sterilizing instruments with high pressure steam to prevent contamination. The existing unit is depreciated and can not be used frequently; therefore, a replacement will be provided.

8) Sterilization Department

A high pressure steam sterilizer (200 lit.), a hot air sterilizer, and an ultrasonic washing unit will be provided to sterilize instruments and to promote the hygienic standards of the hospital.

9) Emergency Reception - Diagnostic Department

Outpatients suspected of having an infectious disease is examined in this department. Therefore, a weighing scale, sphygmomanometer, and a general diagnostic set of instruments will be provided according to the number of examination rooms.

(4) Review of High Cost Equipment

The hospitals targeted in the Project are advanced medical facilities in pediatrics and they are also educational hospitals of the Astana Medical Academy. A segment of the equipment requested is costly and a review of the request is required since their operation require diagnostic technology and financial and maintenance capabilities. The requested equipment has been reviewed according to the following criteria.

2-X-2 MRI

Based on a review of the prevailing conditions in pediatric care in the Project area and the equipment currently in use at other medical facilities, the need for an MRI is high. However, the introduction of a MRI will require large-scale renovation of the existing facilities and equipment; and its continuous operation will affect hospital operations. In terms of profitability, the durable years of the equipment will be exceeded by the time a breakeven point is reached, even with the introduction of medical care charges. It is

anticipated to become an excess facility. Therefore, if the MRI is provided by the Project for the targeted hospitals, there is a strong possibility that it would become an excessive burden in terms of technology and cost. Hence, it was concluded that a MRI would be excluded from the Project.

2-X-1 CT-scanner

In the past, CT-scanner was categorized as a highly advanced and highly costly diagnostic equipment, but recently, it has become a basic item of equipment for many secondary medical facilities despite its high cost.

a) Existing Conditions of Related Facilities

Presently, CT-scanner has been installed at the Akmola State General Hospital and MRI unit has been installed at the Railway Hospital under the jurisdiction of the Ministry of Transportation, respectively. These are the only advanced diagnostic equipment in the region.

Both are medical facilities for adults and MRI for children is not conducted at the Railway Hospital. However, the State General Hospital has accepted requests for CT from the children s hospitals since 1998; and it conducted about 500 CT for pediatric patients. However, a system of reservations is implemented at this hospital and CT for children are usually conducted during after hours and emergencies are not accepted at all. Therefore, if the number CT scans for pediatric patients increases, there is the possibility that it may disrupt the hospital s regular diagnostic activities.

The possibility of sharing the equipment is remote in view of the existing examination system, patient demand, specifications targeting adult patients, and differing jurisdictions (state/city), but referrals to an advanced medical facility for test services in Almaty City is also difficult.

b) Patient Trends in Pediatrics

Approximately 500 pediatric patients underwent a CT scan at the state general hospital in 1998. Nearly 60 percent of the patients had a cerebral test most commonly for hydrocephaly, epilepsy, congenital or acquired cerebral deformity,

external injuries, etc. The number of patients and the disease which required a CT scan in 1998, based on the total ratio of disease contraction and mortality rate and the population of children in Astana City (67,000) are nealy 1,400 case. Furthermore, considering the population of children in Akmola region (240,000) where is the cover area of this hospital, target patients are estimated approximately 5,000 cases in a year, not only these number but also indirect beneficialies is widely expanded for 4 regions, therefore the demand for CT scan can be increased according to the development of infrastructure.

c) The Effectiveness of CT Scans in Pediatrics:

CT scans are effective in pediatrics for the following reasons.

- Diagnoses based on ultrasound and X-ray imagery require that the child remain unmoving. Due to the swift movement of the internal organs, lengthy periods of photography produce blurry images and a poor diagnosis. In addition, there is a need to lower the amount of radiation used; therefore, equipment such as the CT, which produces imagery in a short period of time, is effective.
- Helical scan is extremely effective in diagnosing the quality of the tumour since a sectional imagery in 1mm units which enables diagnosis of small changes in the disease can be obtained.
- The three dimensional imagery based on continuous and accumulated data is effective in diagnosing anomalies and abnormalities and it is effective in identifying the injured areas of the brain or organ ruptures, particularly injured areas of the blood vessel.
- It is highly effective due to the ability to minutely adjust the amount of X-rays.
- Numerous scans of the brain and abdominal area angiogram can be accomplished in a short period of time.

d) Medical Technology

A radiologist and two to four X-ray technicians who are in charge of the ultrasound unit and other equipment are employed by the X-ray Department at each of the three hospitals targeted by the Project. In addition, since the hospitals are also training facilities for the Astana Medical Academy, professors from the academy also complement the staff of the department. In terms of technology and education, the department maintains an advanced level in the nation.

However, due to the lack of a CT at the present time, effort is being expended to improve the diagnostic imagery technology and to learn the operation techniques by the Akmola state hospital and the medical facilities in Almaty.

A training course and guidance in re-education by the Kazakhstan National Radiation・Image Diagnosis Society for the radiologist and technicians will begin and measures to improve the technology of the Almaty Medical Academy and Research Center and the Diagnosis Centers will be introduced under this Project.

e) Maintenance System

There are 21 CT installed throughout Kazakhstan, but the majority are concentrated in Almaty Region and only one unit is owned by the Akmola Regional Hospital in the northern Kazakhstan area.

Presently, several manufacturers, including those dealing in Japanese products, have sales or branch offices in Almaty City and conduct sales and maintenance services. Technicians are sent from Europe, the Netherlands, and Russia to repair equipment which can not be repaired locally.

3-MILK-1 Milk Processing Equipment

Condition of the Existing Equipment ;

The milk processing plant is managed by the pharmaceutical department of the city s Children Hospital for Infectious Diseases and it has been manufacturing kefir and other dairy products since the days of the former Soviet regime. These products are distributed free to patients suffering from diarrhea at the Polyclinic and other medical facilities. The milk processing equipment has been in operation since 1963 with repeated repairs; and it processes two tons of raw milk per day. However, due to depreciation, the processing accuracy has dropped and the equipment needs to be replaced.

Detailed corroboration of the facility design by an expert is required if the equipment is to be replaced, in order to address such issues as to whether it is possible to renovate the existing facility since it is located on the first floor of a six-story private apartment in the

city, whether it is necessary to move to a simple facility such as a new prefabricated structure, who will be responsible for guaranteeing product quality, etc.

The importance of producing the product by the Children s Infectious Diseases Hospital and its characteristic as a medical supply has been acknowledged. However, it is difficult to state that the activity is a diagnostic activity directly implemented by the hospital. In addition, the product is sold as a food product in the city by the private sector and can be purchased openly. Therefore, its priority is low in terms of urgency and replacement; and it has been concluded that the milk processing equipment is not within the scope of medical equipment.

## 2-3 Basic Design

### 2-3-1 Design Concept

(1) Policy on Natural Conditions

1) Due to the continental semiarid climate of the Project region, dustproof and damp proof equipment will be selected.
2) An Uninterrupted Power Supply (UPS) unit will be provided to enable the continuous use of the artificial respirator, surgery light, biochemical analyzer, and other equipment that are used during emergencies.
3) In order to prevent damage stemming from voltage fluctuations, an Automatic Voltage Regulator (AVR) will be provided to allow electronic medical equipment to tolerate a 15 percent fluctuation in power voltage.
4) A water softening apparatus will be provided for the tap water supply in order to protect equipment such as the high-pressure steam sterilizer from the effects of hard or poor quality water.

(2) Policy on Social Conditions

Although the medical institutions targeted by the Project are gradually implementing changes, the facilities are still operated according to the standards instituted under the former Soviet regime. The Project design proposes the modernization and rationalization of medical services based on the medical reforms that are being implemented by the Kazakhstan government.

(3) Policy on Utilizing Local Suppliers and Local Equipment

Equipment, which requires the use of consumables that can be purchased in the local market, will be selected as much as possible.

(4) Policy on the Maintenance Capabilities of the Implementing Institution

1) Priority will be given to equipment where the manufacturer or its local sales agents will be able to set up a supporting maintenance system in Kazakhstan, since the it will be technically difficult for the implementing institution to establish its own maintenance system for medical equipment. In addition, the manufacturer's sales agents must be in Kazakhstan or in Moscow where it will be easily accessible.

2) Equipment with operating costs that are within the financial scope of the targeted medical institutions will be selected. In addition, equipment which will allow financial and technical sustainability and which fall within the operational scope and maintenance capabilities of the targeted medical institutions will be selected.

(5) Policy on the Scope of the Equipment and Establishing the Grade of the Equipment

1) Priority will be given to equipment that are shared and urgently needed in the diagnostic activities of the hospital. The selection process will mainly center on equipment that will replace or supplement existing depreciated units and will replace units used with adult patients with equipment suited for use with neonates and children. In principle, the equipment will be selected with the aim of promoting basic diagnostic activities.
2) In principle, equipment with the specifications and grade that will enable immediate use by the physician will be selected. However, the selection process will not rely on the preferences and ideas of the physician-in-charge. Equipment, which can be commonly operated, will be provided.
3) Equipment, which is suited to the number of staff personnel and their technical level, will be selected, based on the premise that the objective and operation of the equipment will be understood by the medical staff.
4) The quantity of the equipment will be decided based on the number of surgeries, washings, etc. that are required within a 24 hour system of medical services.
5) The required amount of spare parts, consumables, etc. that will be needed when the Project has commenced, will be provided.

(6) Design Policy Pertaining to the Environment

1) Countermeasures to prevent radiation leakage will be provided to avoid dangerous factors.
2) In order to avoid the problem of environmental pollution in future, sufficient care must be given to the refrigerator and freezer used to store medical supplies.

(7) Policy on Project Implementation Period

The Project is estimated to take 12.0 months.

### 2-3-2 Basic Design

(1) Equipment Selection Criteria

There is a high need for the equipment requested by the Kazakhstan side in the diagnostic activities of the medical institutions. However, based on a review of the basic principles of the Project, the Project objectives of the Kazakhstan side, the urgency, and the existing financial conditions, the selection criteria for the equipment which will be provided by the Project was formulated as follows.

[Priority Equipment]

① Basic equipment which is directly needed in basic diagnostic activities
② Equipment that will replace or supplement existing equipment
③ Equipment with maintenance costs that are within the financial scope of the targeted medical institutions
④ Equipment which is suited to the technical level of the medical staff
⑤ Equipment that is needed in medical education

[Equipment eliminated from the selection criteria]

① Equipment with consumables that are difficult to obtain
② Highly advanced equipment or equipment used in costly treatment, unique research purposes
③ Equipment with high maintenance costs that are anticipated to become a financial burden for the medical institution
④ Equipment requiring special technical skills to operate and maintain
⑤ Equipment that can be independently supplied by the Kazakhstan side

The review will be based on the following criteria, which are based on a coordinated study of project content, field survey results, and analytical factors.

[Evaluation Items]

① Equipment Classification

| | |
|---|---|
| Replacement: | Replacement of existing equipment |
| Supplement: | Supplement the existing number of units |
| New: | New provision |

② Division of Equipment

P: Primary medical facility

S: Secondary medical facility

T: Third level medical facility

UH: Educational hospital (University teaching hospital)

③ Technical Evaluation (Diagnostic, Operation, Maintenance Technology)

O: Possesses the diagnostic, operation, and maintenance technology suited to the equipment

△: Requires the training of a specialized technician

×: Requires advanced technical experience; sustained use of the equipment difficult at current technical levels

④ Financial Evaluation (Degree of financial burden, feasible/unfeasible, sustained use feasible/unfeasible)

O: Minimal burden, financially feasible

△: Maintenance cost will rise, but financially feasible

×: Requires high maintenance costs, financially unfeasible

⑤ Review of an After Service (Maintenance) System

O: A maintenance system is established, and sustained use is feasible.

△: There is no maintenance system, but technical support is available

×: There is no maintenance system (special consumables that are difficult to obtain are needed)

—: Not needed

⑥ Review of Suitable Quantity of Equipment

O: Adequate number of units

△: Appropriateness of equipment is high, number of units need to be adjusted (in shortage)

▲: Appropriateness of equipment is high, number of units need to be adjusted (an oversupply)

×: Eliminated from the Project due to problems in type, technical level, maintenance system

(The quantity of equipment that will be provided will be decided based on a review of the existing conditions of the activities, the goals following the Project's implementation, and the activity plan of the Project.)

⑦ Overall Evaluation

A: Equipment which was found appropriate following a review of the request content

B: Equipment that will be provided by the Project after the quantity has been adjusted.

C: Equipment which will not be included in the Project following a review of the request content.

(2) Results of the review on the equipment requested

Based on the selection criteria explained above, the results of the review of the equipment in the request are shown in the following table.

Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level | Contents of Evaluation | | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | P/S/ T/UH | Needs by patients | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Afterservice | Other Factor(s) | | Proper Q'ty Excess/Shortage | Result | | |
| | | | | | | | | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| **Children Hospital No. 2** | | | | | | | | | | | | | | | | | | | | |
| **X-ray Department** | | | | | | | | | | | | | | | | | | | | |
| 2-X-1 | CT Scanner | 1 | 0 | not available | New | T/UH | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| 2-X-2 | MRI | 1 | 0 | not available | New | T/UH | ○ | – | – | – | – | – | – | – | Facility Renovation | A/B | – | C | 0 | |
| 2-X-3 | X-ray stationary unit for X-ray scopy and X-ray graphy | 1 | 3 | Working—but Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| 2-X-12 | X-ray unit, General diagnostic | 1 | | Out of order— not repairable | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A/B | Proper | A | 1 | |
| 2-X-4 | X-ray mobile unit | 3 | 1 | Out of order | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | B | Excess | B | 2 | Reanimation : 1 |
| | | | 1 | Out of order—in Ward | Replacement | P | | | | | | | | ○ | | | | | | Ward Block : 1 |
| 2-X-5 | X-ray film processor, automatic | 2 | 0 | Manual processing | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Excess | B | 1 | |
| 2-X-6 (1) | X-ray film illuminator (1 film) | 2 | 2 | Out dated— Supplement required | Replacement Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-X-6 (2) | X-ray film illuminator (3 films) | 2 | 2 | | | | | | | | | | | | | | | | 2 | |
| 2-X-6 (3) | X-ray film illuminator (6 films x 2 steps, mobile) | 1 | 0 | | | | | | | | | | | | | | | | 1 | for Lecture |
| 2-X-7 | X-ray protective apron | 10 | | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | – | ○ | – | | A | Excess | B | 6 | |
| 2-X-8 | X-ray cassette loading desk | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | – | ○ | – | | B | Proper | A | 1 | |
| 2-X-9 | X-ray film storage box | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | – | ○ | – | | B | Proper | A | 1 | |
| 2-X-10 | Ultrasound stationary unit with doppler unit | 1 | 1 | Out dated not have doppler function | Replacement | S/T/UH | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | Doppler unit |
| 2-X-11 | Ultrasound Unit, Portable with Linear and Convex probe | 1 | 0 | | Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| 2-X-91 | X-ray film development set | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 1 | |
| **Reanimation Department (ICU)** | | | | | | | | | | | | | | | | | | | | |
| 2-ICU-1 | Ventilator for infant (Newborn) | 2 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 2 | |
| 2-ICU-2 | Ventilator for children and adult | 3 | 1 | Out dated | Replacement Supplement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 3 | |
| 2-ICU-3 | Ultrasonic nebulizer | 6 | 3 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 6 | |
| 2-ICU-4 (1) | Patient monitor | 12 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Excess | B | 9 | 9 beds + 3 infants |
| 2-ICU-4 (2) | Neonatal monitor | 1 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | - | Proper | A | 1 | |
| 2-ICU-5 | Infant incubator | 3 | 1 | Out of order | Replacement Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 3 | |
| 2-ICU-6 | Plazmagheresis Unit | 1 | 1 | Out dated—Out of order | Replacement | T/UH | △ | – | – | × | × | × | × | × | No after-service | A | × | C | 0 | Afterservice not available |
| 2-ICU-7 | Functional Reanimation Bed (ICU bed) | 10 | 6 | Out dated | Replacement | P | ○ | – | – | – | ○ | – | ○ | – | | A | Excess | B | 9 | 9 beds |
| 2-ICU-8 | Defibrillator with cart | 2 | 1 | Out dated | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 2 | ICU: 1, Ope.Rm: 1 |
| 2-ICU-9 (1) | Infusion pump | 12 | 2 | Out dated | Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 9 | |
| 2-ICU-9 (2) | Syringe pump | - | 1 | | Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 3 | |
| 2-ICU-10 | Oxygen supply unit | 5 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | B | 3 | |
| 2-ICU-11 | Weighing scale for newborn | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-ICU-12 | Weighing Scale | 3 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 2-ICU-13 | Sphygmomanometer | 10 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 2 | |
| 2-ICU-14 | Laryngoscope set for child with ambu bag | 15 | 2 | not completed | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 9 | |
| 2-ICU-15 | Blood Haemosorbtion Unit (Pump) | 1 | 1 | Outdated | Replacement | T/UH | × | – | – | × | × | × | × | × | | B | Proper | A | 1 | |

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level | Contents of Evaluation | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | | Result | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | P/S/ T/UH | Needs by patients | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Afterservice | Other Factor(s) | | Proper Q'ty Excess/Shortage | | | |
| | | | | | | | | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| 2-ICU-16 | UV Extracorporal Blood Disinfection | 1 | 0 | | New | T/UH | × | – | – | × | × | × | × | × | | B | × | C | 0 | Not available |
| 2-ICU-17 | Suction unit | 10 | 1 | | Replacement Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 6 | |
| 2-ICU-18 | Clavicular puncture disposable set | 500 | - | Consumable or disposal | - | - | | | | | | | | | | C | × | C | 0 | |
| 2-ICU-19 | Pendual puncture disposable set | 200 | - | Consumable or disposal | - | - | | | | | | | | | | B | × | C | 0 | |
| 2-ICU-20 | Spinal puncture disposable set | 200 | - | Consumable or disposal | - | - | | | | | | | | | | B/C | × | C | 0 | |
| 2-ICU-21 | Refrigerator for reagent, test materials & blood | 2 | 1 | | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-ICU-91 | Suction unit, Low pressure continuous | - | 0 | | New | S | △ | – | – | – | – | – | – | – | | - | × | C | 0 | |
| 2-ICU-92 | Pulse oxymeter | 2 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 2 | |
| **Ophthalmology Department** | | | | | | | | | | | | | | | | | | | | |
| 2-EY-1 | Opthalmoscope, handy unit | 4 | 1 | Out dated | Replacement Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 4 | |
| 2-EY-2 | Slit lamp | 2 | 1 | Out dated | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-EY-3 | Slit lamp for infant | 1 | 0 | | New | - | × | – | – | – | – | – | – | – | | A | × | C | 0 | Not available |
| 2-EY-4 | Autorefractokeratometer | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-EY-5 | Pachymeter with printer | 1 | 0 | | New | T/UH | × | – | – | – | – | – | – | – | | A | × | C | 0 | No existing equipment |
| 2-EY-6 | Ophthalmology lenses diagnostic set | 2 | 1 | Out dated=not complated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-EY-7 | Fundus camera for eye examination | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-EY-8 | Laser therapy Unit | 1 | 0 | | New | T/UH | × | – | – | × | × | × | × | × | | A | × | C | 0 | |
| 2-EY-9 | Ophthalmo-chromoscope | 2 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 2-EY-10 | Ultrasound apparatus for ophthalmology | 1 | 0 | | New | T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Proper | A | 1 | |
| 2-EY-11 | Ophthalmology chair mounted unit | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-EY-12 | Filed analyzer | 1 | 1 | Manual type | Replacement | T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| **Function Diagnostic Examination Department** | | | | | | | | | | | | | | | | | | | | |
| 2-EX-1 | Echoencephaloscopy | 2 | 1 | Out dated=USSR type<br>USSR type | Replacement<br>Supplement | T | × | ○ | △ | ○ | ○ | ○ | ○ | – | | A | × | C | 0 | EEG & Ultrasound apparatus are available |
| 2-EX-2 | Electromyograph (EMG) | 1 | 0 | | New | T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Proper | A | 1 | |
| 2-EX-3 | Weighing Scale | 10 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 2-EX-4 | Cardioanalyzer, multichannel (12-ch) | 1 | 0 | | New | T | × | ○ | ○ | ○ | △ | ○ | ○ | – | | A | × | C | 0 | Holter ECG not available |
| 2-EX-5 | Spiroanalyzer | 1 | 1 | Out dated | Replacement | T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-EX-6 | Electroencephalograph (EEG), 18-ch | 1 | 1 | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-EX-7 | Electrocardiograph (ECG), 6-ch | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-EX-8 | Electrocardiograph (ECG), 1-ch | 1 | 3 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-EX-9 | Mingograph | 1 | 0 | | New | T/UH | × | ○ | △ | ○ | ○ | ○ | ○ | – | | A | × | C | 0 | ECG |
| **Endoscopic Department** | | | | | | | | | | | | | | | | | | | | |
| 2-ES-1 | Fiber-gastroscope pediatric set | 2 | 1 | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Moscow | | A | Excess | B | 1 | for child use |
| | | | | for Adult use | New | S/T | × | ○ | ○ | ○ | ○ | ○ | ○ | | | A | × | C | 0 | 1 replacement |
| 2-ES-2 | Fiber-colonoscope pediatric set | 1 | 1 | Out dated=for Adult use | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ditto | | A | Proper | A | 1 | for child use |
| 2-ES-3 | Fiber-bronchoscope pediatric set | 1 | 1 | Out dated=for Adult use | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ditto | | A | Proper | A | 1 | for child use |

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level | Contents of Evaluation | | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | Result | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | P/S/ T/UH | Needs by patients | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Afterservice | Other Factor(s) | | Proper Q'ty Excess/Shortage | | | |
| | | | | | | | | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| 2-ES-4 | Laparoscope set for diagnostic | 1 | 0 | | New | S/T | × | – | – | – | – | – | – | – | | A | × | C | 0 | for Operation room |
| 2-ES-5 | Fiber-duodenoscope | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Moscow | | A | Proper | A | 1 | for child use |
| 2-ES-6 | Tracoscope | 1 | 0 | | New | T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | Number of patient is few |
| 2-ES-7 | Universal light source | 5 | 3 | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 3 | for 3 rooms |
| 2-ES-8 | Endoscopic suction pump | 5 | 2 | Out dated | Replacement Supplement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 3 | for 3 rooms |
| 2-ES-9 | Electrosurgical Unit for endoscopy | 3 | 1 | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 2 | Upper/Lower 1 each |
| 2-ES-10 | Endoscope cleaning set | 5 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 2 | Upper/Lower 1 each |
| 2-ES-11 | Ultrasonic washing unit, table top for endoscopic tools | 2 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | Common use |
| 2-ES-12 | Anesthesia apparatus | 1 | 1 | Out dated | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| Surgeical / Urology Department | | | | | | | | | | | | | | | | | | | | |
| 2-SG-1 | Suction unit | 8 | 5 | Out dated | Replacement Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 5 | Number of existing equipment |
| 2-SG-2 | Operation Lamp, Mobile with battery | 5 | 5 | Out dated | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 5 | |
| 2-SG-3 | Cysto-urethrofiberscope | 2 | 0 | | New | T/UH | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 2-SG-4 | Urodynamic monitor | 1 | 0 | | New | UH | × | – | – | × | × | × | × | – | | A | × | C | 0 | |
| 2-SG-5 | Stretcher | 10 | - | Out dated—not enough | Supplement | P | × | – | – | – | – | – | – | – | | A | × | C | 0 | for General Equipment |
| 2-SG-6 | Coagulator | 2 | 2 | Out dated | Replacement | S/T | × | – | – | – | – | – | – | – | | A | × | C | 0 | No operation at ward |
| 2-SG-7 | Ultrasonic nebulizer | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-SG-8 | Infant incubator | 2 | 1 | Out dated | Replacement Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 2-SG-9 | Oxygen tent | 2 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-SG-10 | Anesthesia apparatus with ventilator | 1 | 1 | Out dated | Replacement | S | × | – | – | – | – | – | – | – | | A | × | C | 0 | No operation at ward |
| 2-SG-11 | Ultrasonic surgical unit | 5 | 0 | | New | T/UH | △ | △ | △ | △ | × | × | × | – | | A | × | C | 0 | No operation at ward |
| 2-SG-12 | Drain system for abdominal cavity | 200 | | Consumable or disposal | | | | | | | | | | | | B/C | × | C | 0 | |
| 2-SG-13 | Thoracic drain system | 50 | | Consumable or disposal | | | | | | | | | | | | B/C | × | C | 0 | |
| 2-SG-14 | Puncture needle set (10 pcs./set) | 10 | 10 | Out dated=Rusted | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | set of 10 pcs. |
| 2-SG-15 | Osseous-Marrow drain tube | 100 | | Consumable or disposal | | | | | | | | | | | | B/C | × | C | 0 | |
| 2-SG-16 | Intestines intubatio drain tube | 40 | | Consumable or disposal | | | | | | | | | | | | B/C | × | C | 0 | |
| 2-SG-17 | Oesophagus bougie set | 2 | - | not complete | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 2-SG-18 | Operation table, Universal | 1 | 1 | Out dated | Replacement | S | × | – | – | – | – | – | – | – | | A | × | C | 0 | No operation at ward |
| 2-SG-91 | Treatment Table | 1 | | Substitution | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 1 | instead of 2-SG-18 |
| Orthopedy/Traumatology department | | | | | | | | | | | | | | | | | | | | |
| 2-OR-1 | Arthroscope set | 1 | 0 | | New | T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-OR-2 (1) | Functional traumatology bed, for adult | 10 | 10 | Out dated | Replacement | P/S | ○ | – | – | – | ○ | – | ○ | – | | A | Proper | A | 5 | |
| 2-OR-2 (2) | Functional traumatology bed, for child | | | | | P/S | ○ | – | – | – | ○ | – | ○ | – | | A | Proper | A | 5 | |
| 2-OR-3 | Wheel chair | 10 | 1 | Out dated | Replacement Supplement | P | ○ | – | – | – | ○ | – | ○ | – | | A | × | C | 0 | General equipment |
| 2-OR-4 | Loupe glass, binocular | 2 | 0 | | New | S | × | – | – | – | ○ | – | ○ | – | | C | × | C | 0 | for Operation room |
| 2-OR-5 | Traumatology rod apparatus | 3 | - | Consumable or disposal | | | | | | | | | | | | | × | C | 0 | |

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level | Contents of Evaluation | | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | P/S/ T/UH | Needs by patients | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Afterservice | Other Factor(s) | | Proper Q'ty Excess/Shortage | Result | | |
| | | | | | | | | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| 2-OR-6 | Metal work tool set | 2 | - | Consumable or disposal | | | | | | | | | | | | | × | C | 0 | |
| 2-OR-7 | Spinal cord traction staple set | 10 | - | Consumable or disposal | | | | | | | | | | | | | × | C | 0 | |
| 2-OR-8 | Bone drilling, cutting and treatment unit | 2 | 1 | not for medical use | Replacement | S/T | × | – | – | – | ○ | – | – | – | | A | × | C | 0 | for Operation room |
| 2-OR-9 | Nebulizer | 1 | 1 | Out of order | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | A | Proper | A | 1 | |
| 2-OR-10 | Anesthesia apparatus with ventilator | 1 | 1 | | Replacement | S/T | × | – | – | – | ○ | – | – | – | | S | × | C | 0 | No anesthetic operation unwant |
| 2-OR-11 | Infant incubator | 2 | 1 | Old - not complete | Replacement Supplement | S | ○ | ○ | ○ | ○ | ○ | | | | | A | Excess | B | 1 | Replacement of existing number |
| 2-OR-12 | Operation table | 1 | 1 | | Replacement | S | × | – | – | – | ○ | – | – | – | | A | × | C | 0 | |
| 2-OR-13 | Laser therapy Unit | 1 | 0 | | New | T/UH | × | △ | △ | × | × | △ | × | × | | A | × | C | 0 | |
| 2-OR-91 | Treatment Table | - | | Substitution | Replacement | P | ○ | – | – | – | ○ | – | ○ | – | | - | Proper | A | 1 | substitution for 2-OR-12 |
| Operation Department | | | | | | | | | | | | | | | | | | | | |
| 2-OP-1 | Anesthesia apparatus with ventilator | 5 | 6 | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 5 | 5 operation rooms shall be improved, |
| 2-OP-2 | Operation table, universal type | 4 | 4 | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 4 | |
| 2-OP-3 | Operation table for orthopaedy | 1 | 1 | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-OP-4 | Electrosurgical unit | 3 | 1 | Out dated | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | 3 surgical operation rooms |
| 2-OP-5 | Coagulator | 3 | 1 | Out dated | Replacement | S | × | - | - | - | - | - | - | - | | A | × | C | 0 | Repetition |
| 2-OP-6 | Laparoscope set for Operation, with monitor / video system | 1 | 1 | Out dated=not complete | Replacement | T/UH | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Moscow or Germany | | A | Proper | A | 1 | |
| 2-OP-7 | X-ray mobile unit, for operation (C-arm, TV) | 1 | 0 | not available | New | T/UH | ○ | ○ | ○ | ○ | △ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| 2-OP-8 | Operation microscope for ophthalmology | 2 | 2 | Out of order | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-OP-9 | Ophthalmic surgery and microsurgery instrument set | 2 | - | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | – | ○ | – | | A | Proper | A | 2 | |
| 2-OP-10 | Operation suture materials for microsurgery | 1 | - | Consumable or disposal | | | | | | | | | | | | | × | C | 0 | |
| 2-OP-11 | Electrosurgical unit (for Ophthalmic Operation) | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | – | ○ | - | | A | Proper | A | 2 | 2 Eye operation rooms |
| 2-OP-12 | Scissors, eye operation | 20 | - | Repetition | | | | | | | | | | | | | × | C | 0 | |
| 2-OP-13 | Suction unit (3 lit. x 2 bt/s) for Operation Room | 5 | 5 | Out dated=Out of order | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 5 | |
| 2-OP-14 | Operation Lamp, Mobile with battery | 5 | 2 | Out dated | Replacement Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 5 | |
| 2-OP-15 | Operation Light, ceiling type | 2 | 5 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Shortage | A | 3 | |
| 2-OP-16 | Instrument Set, Surgery instrument set for major operation | 2 | - | Out dated=not complete | Replacement | S/T | ○ | ○ | ○ | ○ | – | – | – | – | | A | Proper | A | 2 | |
| 2-OP-17 | Instrument Set, Surgery instrument set for pediatric | 2 | - | Out dated=not complete | Replacement | S/T | ○ | ○ | ○ | ○ | – | – | – | – | | A | Proper | A | 2 | |
| 2-OP-18 | Instrument Set, Surgery instrument set for new-born | 2 | - | Out dated=not complete | Replacement | S/T | ○ | ○ | ○ | ○ | – | – | – | – | | A | Proper | A | 2 | |
| 2-OP-19 | Hot air sterilizer | 6 | 6 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 2 | |
| 2-OP-20 | Instrument Set, Urology instrument set | 2 | - | Out dated=not complete | Replacement | S/T | ○ | ○ | ○ | ○ | – | – | – | – | | A | Proper | A | 2 | |
| 2-OP-21 | Cysto-urethoroscope set, ligid type | 1 | 0 | | New | T/UH | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-OP-22 | Instrument Set, Microsurgery operation | 1 | - | Out dated=not complete | Replacement | S/T | ○ | ○ | ○ | ○ | – | – | – | – | | A | Proper | A | 1 | |
| 2-OP-23 | Cnosurgery set | 1 | 0 | | New | T/UH | △ | △ | △ | × | × | × | × | × | | A | × | C | 0 | |
| 2-OP-24 | Electrosurgery high frequency unit | 5 | 1 | Out dated | Replacement | S | × | – | – | – | – | – | – | – | | A | × | C | 0 | Repetition |

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level P/S/ T/UH | Contents of Evaluation | | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | Result | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | | Needs by patients | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Afterservice | Other Factor(s) | | Proper Q'ty Excess/Shortage | | | |
| | | | | | | | | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| 2-OP-25 | Suture material (caetgut, nylon etc) | 1 | - | Consumable or disposal | | | | | | | | | | | | B | × | C | 0 | |
| 2-OP-26 | Universal suturing apparatus | 1 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-27 | Hemostatic Forceps (Mosquito) | 200 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-28 | Hemostatic Forceps (Kocher) | 200 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-29 | Hemostatic Forceps (Pean) | 200 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-30 | Hemostatic Forceps (Kelly) | 200 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-31 | Needle holder | 100 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-32 | Suture needle | 1000 | - | Consumable or disposal | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-33 | Suture scissors, straight | 100 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-34 | Suture scissors, curved | 100 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-35 | Operating knife handle | 20 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-36 | Operating knife blade, disposable | 1000 | - | Consumable or disposal | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-37 | Operating scalpel | 100 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-38 | Operating scissors, standard | 100 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-39 | Scissors for angio-operations | 20 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-40 | Surgical tweezers, 140mm | 100 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-41 | Anatomy Tweezers | 100 | - | Repetition | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-42 | Instrument Set, Traumatology (Orthopedic) instrument set | 1 | - | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | – | – | – | – | | A | Proper | A | 1 | |
| 2-OP-43 | Instrument Set, Traumatology (Orthopedic) instrument set for child | 2 | - | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | – | – | – | – | | A | Proper | A | 2 | |
| 2-OP-44 | Operation microscope for neurosurgery operations | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-OP-45 | Instrument set for operations on spinal cord (trauma and scoliosys) | 1 | - | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | – | – | – | – | | A | Proper | A | 1 | |
| 2-OP-46 | Instrument Set, Neurosurgery instrument set | 1 | - | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | – | – | – | – | | A | Proper | A | 1 | |
| 2-OP-47 | Binocular loupe glass with fiber optic | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-OP-48 | Instrument set for hip-pelvis operation of child with inborn dislocations | 1 | - | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | – | – | – | – | | A | Proper | A | 1 | |
| 2-OP-49 | Laser unit | 1 | 0 | | New | T/UH | △ | △ | △ | × | × | × | × | – | | C | × | C | 0 | |
| 2-OP-50 | Instrument Table | 5 | 5 | Out dated-rusted | Replacement | S/T | ○ | ○ | ○ | ○ | – | – | – | – | | A | Proper | A | 5 | |
| 2-OP-51 | Bone drilling, cutting and treatment unit | 2 | 2 | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-OP-52 | Instrument set for operation on tendons | 1 | - | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | – | – | – | – | | A | Proper | A | 1 | |
| 2-OP-53 | Ultrasonic suction unit for brain operation | 1 | 0 | | New | T/UH | × | – | – | × | × | × | × | × | | A | × | C | 0 | S/P not available |
| 2-OP-54 | Brain drain system, disporsable | 100 | - | Consumable or disposal | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-55 | Spinal cord distractor, Harrington type for scoliosys operation | 100 | - | Consumable or disposal | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-56 | Hip-pelvis inborn dislocations fixator, 5 different size | 50 | - | - ditto - | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-57 | Spinal cord traction frame | 10 | - | - ditto - | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-58 | Metal work tool set | 2 | - | - ditto - | | | | | | | | | | | | A | × | C | 0 | |

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level | Contents of Evaluation | | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | P/S/ T/UH | Needs by patients | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Aftersevice | Other Factor(s) | | Proper Q'ty Excess/Shortage | Result | | |
| | | | | | | | | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| 2-OP-59 | Cancellous bone screw set | 2 | - | - ditto - | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-60 | Bone fracture fixing plate | 50 | - | - ditto - | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-61 | Intramodullar bone screw | 100 | - | - ditto - | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-62 | Bone rod for fracture apparatus (dia. 3mm-6mm) | 100 | - | - ditto - | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-63 | Bone holding forceps (Langenbeck) | 10 | - | - ditto - | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-64 | Bone holding forceps (Farabeuf-Lambotte) | 10 | - | - ditto - | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-65 | Bone cutting forceps (Liston) | 25 | - | - ditto - | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-66 | Rongeur forceps | 10 | - | - ditto - | | | | | | | | | | | | A | × | C | 0 | |
| 2-OP-67 | Goniomater | 5 | 1 | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 2-OP-68 | UV hand washing apparatus | 3 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |
| 2-OP-69 | UV disinfection lamp, mobile | 2 | 2 | | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-OP-70 | X-ray film illuminator (1 film) | 2 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-OP-71 | Bix holder (Dressing drum stand) | 10 | 10 | | Replacement | P | ○ | – | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 10 | |
| 2-OP-72 | Dermatorm | 2 | 0 | | New | S/T | ○ | ○ | ○ | ○ | △ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-OP-91 | Patient monitor | 5 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 5 | 4 parameters |
| 2-OP-92 | High Pressure Steam Sterilizer (200 lit.) with softener | 2 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 2 | |
| Cardiohematology Department | | | | | | | | | | | | | | | | | | | | |
| 2-CH-1 | Puncture needle set (10 pcs./set) | 3 | 1 | Rusted–not complete | Replacement | S | ○ | ○ | ○ | ○ | – | – | – | ○ | | A | Excess | B | 2 | set of 10 pcs. |
| 2-CH-2 | Puncture needle set (for child) | 3 | 1 | Rusted–not complete | Supplement | S | × | – | – | – | – | – | – | – | | A | × | C | 0 | Repetition / 2-CH-1 |
| 2-CH-3 | Weighing scale for newborn | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | – | – | – | ○ | | A | Proper | A | 1 | |
| 2-CH-4 | Weighing Scale | 2 | 0 | | New | P | ○ | ○ | ○ | ○ | – | – | – | ○ | | A | Excess | A | 1 | |
| 2-CH-5 | Stethoscope for infant | 3 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 3 | |
| 2-CH-6 | Sphygmomanometer | 3 | - | Out of order | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 3 | |
| 2-CH-7 | Catheter, urinal | 400 | | Consumable or disposal | | | | | | | | | | | | A | × | C | 0 | |
| 2-CH-8 | Infant incubator | 1 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Proper | A | 1 | |
| 2-CH-9 | Functional bed (Gatch type) | 10 | 10 | Out dated | Replacement | P/S | ○ | – | – | – | – | – | ○ | – | | A | Proper | A | 10 | |
| 2-CH-10 | Aggregometer (Trombocycle analyzer) | 1 | 0 | Repetition | New | T/UH | × | – | – | – | × | – | – | – | | A | × | C | 0 | set up in Laboratory |
| 2-CH-91 | Pulse oxymeter | 2 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 2 | |
| 2-CH-92 | Patient monitor | 1 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| E.N.T Department | | | | | | | | | | | | | | | | | | | | |
| 2-ENT-1 | ENT instrument set | 3 | 1 | Out dated–not complete | Replacement | P | ○ | ○ | ○ | ○ | – | – | ○ | – | | A | Excess | B | 2 | |
| 2-ENT-2 | Audiometer for children | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-ENT-3 | Electrosurgical unit | 1 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-ENT-4 | Instrument Set, Microsurgery instrument set for larynx operation | 2 | 1 | Out dated–not complete | Replacement | S | ○ | ○ | ○ | ○ | – | – | ○ | – | | A | Proper | A | 2 | |
| 2-ENT-5 | Fiber-Rhino-Laryngoscope set | 1 | 0 | | New | T/UH | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-ENT-6 | Sinusoscope | 1 | 0 | Repetition | New | T/UH | × | ○ | ○ | ○ | – | – | – | – | | A | × | C | 0 | covered by 2-ENT-5 |
| 2-ENT-7 | ENT suction unit | 3 | 3 | Out of order | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level | Contents of Evaluation | | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | Result | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | P/S/ T/UH | Needs by patients | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Afterservice | Other Factor(s) | | Proper Q'ty Excess/Shortage | | | |
| | | | | | | | | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| 2-ENT-8 | Cnosurgery unit, ENT | 1 | 0 | | New | T/UH | × | △ | △ | × | × | △ | × | × | | A | × | C | 0 | |
| 2-ENT-9 | Laser unit, ENT | 1 | 0 | | New | T/UH | × | △ | △ | × | × | △ | × | × | | A | × | C | 0 | |
| 2-ENT-10 | Operation microscope, for ENT | 1 | 1 | Out dated=Out of order | Replacement | T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-ENT-11 | Laryngoscope, Ceiling set | 1 | 1 | Out dated=rusted | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-ENT-12 | Operation table, universal type | 1 | 1 | Out dated | Replacement | S | ○ | ○ | ○ | ○ | ○ | – | ○ | – | | A | Proper | A | 1 | |
| 2-ENT-13 | Anesthesia apparatus | 1 | 1 | Out dated | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-ENT-14 | Ultrasonic nebulizer | 1 | 1 | Out dated=Out of order | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-ENT-15 | Autoclave, desk top type | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-ENT-16 | Air conditioner | 2 | 0 | | New | P | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 2-ENT-91 | ENT chair unit | 2 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| Dental Department | | | | | | | | | | | | | | | | | | | | |
| 2-OD-1 | Dental unit with chair and air-compressor | 1 | 1 | Old—partaly out of order | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-OD-2 | Dental instrument set | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | – | – | – | | A | Proper | A | 1 | |
| 2-OD-3 | Tooth filling preparation kit & material | 1 | - | Consumable or Disposal | | P | | | | | | | | | | A | × | C | 0 | |
| 2-OD-4 | Electric oven | 1 | 0 | no Technician available | New | P | × | ○ | ○ | ○ | ○ | ○ | ○ | – | No technician | C | × | C | 0 | |
| 2-OD-5 | Laboratory Lathe | 1 | 0 | no Technician available | New | P | × | ○ | ○ | ○ | ○ | ○ | ○ | – | No technician | C | × | C | 0 | |
| 2-OD-6 | Autoclave, desk top type | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| Physiotherapy & Rahabilitation Department | | | | | | | | | | | | | | | | | | | | |
| 2-RH-1 | Ultrahigh frequency current treatment apparatus (0 - 50W) | 4 | 2 | Out dated | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 2 | |
| 2-RH-2 | Diadinamical curent treatment apparatus | 2 | 1 | Out dated | Replacement | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 2-RH-3 | Electric analgesy and TENS therapy unit | 2 | 0 | | New | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-RH-4 | Artificial electric sleep apparatus | 2 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 2-RH-5 | Ultratone frequency treatment apparatus | 2 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | B | × | C | 0 | |
| 2-RH-6 | Ultrahigh frequency current treatment apparatus | 3 | 1 | Out dated | Replacement | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 2-RH-7 | Low frequency alternating magnetic therapy unit | 2 | 1 | Out dated | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 2-RH-8 | UV treatment unit (whole body) | 2 | 1 | Out dated | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-RH-9 | Ultrasound wave therapy treatment unit | 2 | 2 | Out dated | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-RH-10 | Ultrasonic nebulizer | 5 | 2 | Out dated | Replacement Supplement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 2 | |
| 2-RH-11 | Electric massage treatment unit | 5 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 2-RH-12 | Laser therapy unit | 1 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 2-RH-13 | Ortho trac, portable | 3 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 2-RH-14 | Hydro bubbler bath | 1 | 1 | only bathtub is abvailable | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-RH-15 | Ankle and leg exersizer | 1 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | Not for child use |
| 2-RH-16 | Lower limb extension | 1 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | Not for child use |
| 2-RH-17 | Rowing imitator | 1 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | - ditto - |
| 2-RH-18 | Exercise stairs | 1 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | - ditto - |

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level P/S/T/UH | Contents of Evaluation | | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | Result | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | | Needs by patients | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Afterservice | Other Factor(s) | | Proper Q'ty Excess/Shortage | | | |
| | | | | | | | | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| 2-RH-19 | Perceptual motor training set | 1 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | - ditto - |
| 2-RH-20 | Curb and mill | 1 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | - ditto - |
| 2-RH-21 | Rotary shoulder & elbow apparatus | 1 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | - ditto - |
| 2-RH-22 | Shoulder wheel | 1 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | - ditto - |
| 2-RH-23 | Wrist roll | 1 | 0 | | New | P/S | × | – | – | – | – | – | – | – | | A | × | C | 0 | - ditto - |
| 2-RH-24 | Treadmill | 1 | 1 | Working | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| Clinical Laboratory Department | | | | | | | | | | | | | | | | | | | | |
| 2-CL-1 | Biochemical analyzer | 1 | 0 | Manual testing | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| 2-CL-2 | Spectrophotometer | 1 | 1 | Out dated | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | B | Proper | A | 1 | |
| 2-CL-3 (1) | Centrifuge (General) | 2 | 2 | Out dated—Out of order | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Shortage | A | 2 | |
| 2-CL-3 (2) | Centrifuge (Hematocrit) | - | - | | Supplement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Shortage | A | 2 | |
| 2-CL-4 | Water distillator, 10 lit./h | 1 | 1 | Out dated—Out of order | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| 2-CL-5 | Hot air sterilizer | 2 | 1 | Out dated | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-CL-6 (1) | Microscope, binocular | 10 | 10 | Out dated | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 5 | |
| 2-CL-6 (2) | Microscope, fluorescent | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-CL-7 | Osmometer | 1 | 0 | | New | S/T | × | – | – | – | △ | △ | △ | – | | C | × | C | 0 | Purpose not fixed |
| 2-CL-8 | Electronic analytical balance | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-CL-9 | Refrigerator for reagent, test materials & blood | 2 | 2 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-CL-10 | Blood cell counter | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| 2-CL-11 | HIV test kit | 1 | 0 | Consumable or Disposal | New | - | × | – | – | – | – | – | – | – | | C | × | C | 0 | |
| 2-CL-12 | Electrolyte analyzer (Na, K, Cl, or Ca) | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | B | Proper | A | 1 | |
| 2-CL-13 | Blood gas analyzer | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | B | Proper | A | 1 | |
| 2-CL-14 | Electrophoresis with Densitometer electronic | 1 | 1 | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-CL-15 | Coaglometer, handy unit | 1 | 0 | | New | S/T | × | ○ | ○ | ○ | – | – | – | – | | C | × | C | 0 | |
| 2-CL-16 | Hemoglobinmeter, handy unit | 1 | 0 | | New | S/T | × | ○ | ○ | ○ | – | – | – | – | | C | × | C | 0 | |
| 2-CL-17 | Refractometer | 1 | 0 | | New | P/S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-CL-18 | Protorombinmeter | 1 | 0 | Repetition | New | S/T | × | – | – | – | – | – | – | – | | C | × | C | 0 | Repetition = Coaglometer |
| 2-CL-19 | Water bath, thermostat type | 2 | 2 | Out dated | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-CL-20 | Glucose analyzer, handy unit | 1 | 0 | | New | S/T | × | – | – | – | – | – | – | – | | A | × | C | 0 | Test strip is avaiable |
| 2-CL-21 | Fume hood | 2 | 2 | Wooden made | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 2-CL-22 | Coagulometer, semi-automatic | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| 2-CL-23 | Automatic urine analyzer | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-CL-24 | Hemoglobinmeter | 1 | 0 | | New | S/T | × | – | – | – | – | – | – | – | | A | × | C | 0 | covered by Blood cell counter |
| 2-CL-91 | Magnetic stirrer, with heater | 2 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 2 | |
| 2-CL-92 | Roller for test tube | 2 | 0 | | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 2 | |
| 2-CL-93 | Micropipette | 10 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 10 | |
| 2-CL-94 | Pipette washer | 1 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 1 | |

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level | Contents of Evaluation | | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | Result | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | P/S/ T/UH | Needs by patients | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Afterservice | Other Factor(s) | | Proper Q'ty Excess/Shortage | | | |
| | | | | | | | | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| 2-CL-95 | Glassware washer | 1 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 1 | |
| **Pharmacy Department** | | | | | | | | | | | | | | | | | | | | |
| 2-PH-1 | Prescription counter | 2 | 2 | | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-PH-2 | Refrigerator for reagent, test materials & blood | 1 | 1 | Out of order | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-PH-3 | Autoclave, vertical Type | 1 | 2 | Operating condition | Replacement | S | × | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | × | C | 0 | |
| 2-PH-4 | Electronic analytical balance | 1 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-PH-91 | Water distillator, 10 lit./h | 1 | 1 | Low quality | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-PH-92 | Rack for reagent | 1 | 1 | | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| **Sterilization Department** | | | | | | | | | | | | | | | | | | | | |
| 2-ST-1 | Autoclave, vertical Type | 2 | 2 | | Replacement | S | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 2-ST-2 | High Pressure Steam Sterilizer (400 lit.) with softener | 2 | 2 | Out of order | Replacement | S | ○ | ○ | ○ | ○ | △ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-ST-3 | Hot air sterilizer | 2 | 2 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-ST-4 | Ultrasonic washing machine for instruments | 2 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 2-ST-5 | Anesthesia apparatus washing machine | 1 | 0 | | New | - | × | – | – | – | – | – | – | – | | A | × | C | 0 | Products not available |
| 2-ST-91 | Bottle sterilizer(100 lit) | 1 | 2 | Out dated | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| **Emergency Reception - Diagnostic Department** | | | | | | | | | | | | | | | | | | | | |
| 2-EM-1 | Ultrasonic nebulizer | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-EM-2 | Anesthesia apparatus with ventilator | 1 | 1 | Out dated | Replacement | S | ○ | ○ | ○ | ○ | △ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| 2-EM-3 | Suction unit | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-EM-4 | Weighing scale for newborn | 2 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | – | – | – | | A | Excess | B | 1 | |
| 2-EM-5 | Sphygmomanometer (Aneroid type) | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-EM-6 | Puncture needle set (10 pcs./set) | 50 | 2 | not enough | Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 2 | not disposal, set of 10 pcs. |
| 2-EM-7 | Stethoscope for infant | 5 | – | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | – | – | – | | A | Proper | A | 5 | for infant size |
| 2-EM-8 | Catercher, unnal | 50 | | Consumable or Disposal | | | | | | | | | | | | A | × | C | 0 | |
| 2-EM-9 | Infant incubator | 1 | 0 | | New | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| **General Hospital Equipment & Others** | | | | | | | | | | | | | | | | | | | | |
| 2-G-1 | General diagnostic set | 20 | – | | Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 15 | 1 set / 20 beds |
| 2-G-2 | Refrigerator for drugs for nurse post at wards | 20 | – | | Replacement Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 12 | 2 units / floor |
| 2-G-3 | Ambulance (Minibus type) | 1 | 1 | Out dated | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | B | Excess | C | 0 | |
| 2-G-4 | Ambulance | 1 | | | | | | | | | | | | | | A | | A | 1 | |
| 2-G-5 | Minibus panel van | 1 | | | | | × | ○ | ○ | ○ | △ | ○ | ○ | ○ | Vehicle | A | × | C | 0 | |
| 2-G-6 | Computer | 3 | 3 | Working | Replacement | - | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 2-G-7 | Photocopy machine | 3 | 1 | Working | Replacement | - | × | – | – | – | – | – | – | – | | B | × | C | 0 | |
| 2-G-8 | Air conditioner | 10 | – | | Supplement | - | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Excess | B | 6 | for 6 operation rooms |
| 2-G-9 | Infusion pump | 12 | – | | Supplement | P | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 2-G-91 | Stretcher | 10 | – | | Replacement | P | ○ | – | – | – | – | – | – | – | | A | Excess | B | 5 | |
| 2-G-92 | Wheel chair | 10 | – | | Replacement | P | ○ | – | – | – | – | – | – | – | | A | Excess | B | 5 | |

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level | Contents of Evaluation | | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | Result | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | P/S/T/UH | Needs | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Afterservice | Other Factor(s) | | Proper Q'ty Excess/Shortage | | | |
| | | | | | | | by patients | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| Laundry Department | | | | | | | | | | | | | | | | | | | | |
| 2-LD-1 | Washing machine, 30kg | 2 | 2 | Out dated・Out of order | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-LD-2 | Washing machine, 25lit. / 7kg | 2 | 2 | | Supplement | S | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 2-LD-3 | Extractor (Laundry) | 2 | 2 | Out dated・Out of order | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-LD-4 | Electric boiler | 1 | 1 | | Supplement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-LD-5 | Drying machine (Laundry) | 2 | 2 | Out dated・Out of order | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 2-LD-6 | Ironing machine (Laundry) with table 150cm width | 1 | 1 | Out dated | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 2-LD-7 | High temp. dry air disinfection chamber | 1 | 1 | | Replacement | - | × | – | – | – | – | – | – | – | No products | A | × | C | 0 | |
| Kitchen | | | | | | | | | | | | | | | | | | | | |
| 2-KT-1 | Electric copper, 60 lit. | 2 | 2 | Working | Replacement | P | × | – | – | – | – | – | – | – | No need to replace | B | × | C | 0 | |
| 2-KT-2 | Eletric flying pan, 25kg | 1 | 1 | Working | Replacement | P | × | – | – | – | – | – | – | – | No need to replace | B | × | C | 0 | |
| 2-KT-3 | Electric boiler, 100lit. | 1 | 1 | Out dated | Replacement | P | ○ | – | ○ | ○ | – | ○ | ○ | – | | B | Proper | A | 1 | Hot water |
| 2-KT-4 | Electric oven, 12.3kW/section | 4 | 4 | Working | Replacement | P | × | – | – | – | – | – | – | – | No need to replace | B | × | C | 0 | |
| 2-KT-5 | Food rub-grating machine | 1 | 1 | Out of order | Replacement | P | × | – | – | – | – | – | – | – | No need to replace | B | × | C | 0 | |
| 2-KT-6 | Refregerating chamber 7.5m3 | 3 | 0 | | New | P | × | – | ○ | ○ | – | – | – | – | | A | × | C | 0 | Space not available |
| 2-KT-7 | Refregerating cabinet, 500 lit. | 3 | 3 | Out of order | Replacement | P | ○ | – | ○ | ○ | – | ○ | ○ | – | | A | Proper | A | 3 | |
| 2-KT-8 | Bread storage machine, 120-150 pcs. | 1 | 1 | | Replacement | P | × | – | – | – | – | – | – | – | No need to replace | B | × | C | 0 | |
| 2-KT-9 | Potato peeling machine, 10kg | 1 | 1 | Out of order | Replacement | P | × | – | – | – | – | – | – | – | No need to replace | A | × | C | 0 | |
| 2-KT-10 | Electric meat chopping machine | 3 | 1 | Working | Replacement | P | × | – | – | – | – | – | – | – | No need to replace | A | × | C | 0 | |
| 2-KT-11 | Steam boiling copper, 200lit. | 1 | 1 | Working | Replacement | P | × | – | – | – | – | – | – | – | No need to replace | B | × | C | 0 | |
| 2-KT-12 | Vegetable cutting machine | 1 | 1 | Working | Replacement | P | × | – | – | – | – | – | – | – | No need to replace | A | × | C | 0 | |
| 2-KT-13 | Pastry kneader, 50kg | 1 | 1 | Working | Replacement | P | × | – | – | – | – | – | – | – | No need to replace | B | × | C | 0 | |
| 2-KT-14 | Roast board, 3 section | 1 | 1 | Working | Replacement | P | × | – | – | – | – | – | – | – | No need to replace | B | × | C | 0 | |

* Remarks ; P ; Primary Medical Facility Level

S ; Secondary Medical Facility Level

T ; Tertiary Medical Facility Level

UH ; University (Medical Teaching) Hospital Level

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level P/S/T/UH | Contents of Evaluation | | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | Result | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | | Needs by patients | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Afterservice | Other Factor(s) | | Proper Q'ty Excess/Shortage | | | |
| | | | | | | | | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| **Children Hospital No. 1** | | | | | | | | | | | | | | | | | | | | |
| **X-ray Department** | | | | | | | | | | | | | | | | | | | | |
| 1-X-1 | X-ray unit, General diagnostic | 1 | | | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | – | - | - | |
| – | X-ray stationary unit for X-ray scopy and X-ray graphy | | 1 | Out dated | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| 1-X-2 | X-ray film processor, automatic | 1 | 0 | | New | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | A | Proper | A | 1 | |
| 1-X-3 | Ultrasound stationary unit with doppler unit (probe 5pcs,) | 1 | 1 | New Equipment available | Repetition | S/T | × | – | – | – | – | – | – | – | | B | × | C | 0 | |
| 1-X-4 | Electrocardiograph (ECG), 6-ch | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | A | Proper | A | 1 | |
| 1-X-91 | X-ray film development set | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | A | Proper | A | 1 | |
| 1-X-92 | X-ray protective apron | 2 | 2 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | – | – | | | A | Proper | A | 2 | |
| 1-X-93 | Ultrasound Unit, Portable with Linear and Convex probe | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| 1-X-94 | X-ray mobile unit | 1 | 0 | replaced to 2nd CH | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| **Reanimation Department (ICU)** | | | | | | | | | | | | | | | | | | | | |
| 1-ICU-1 | Ventilator for infant (Newborn) | 3 | 2 | Out of order | Replacement Supplement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |
| 1-ICU-2 | Resuscitation table for newborn warming (Infant warmer) | 3 | 4 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |
| 1-ICU-3 | Ultrasonic nebulizer | 5 | 2 | Out dated | Replacement Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 2 | |
| 1-ICU-4 | Neonatal monitor | 6 | - | Out of order | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 6 | |
| 1-ICU-5 | Suction unit | 3 | 3 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |
| 1-ICU-6 | Infant incubator | 3 | 2 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |
| 1-ICU-7 (1) | Infusion pump | 6 | - | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 4 | |
| 1-ICU-7 (2) | Syringe pump | | | | Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | – | Proper | A | 2 | |
| 1-ICU-8 | Weighing scale for newborn | 6 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 1-ICU-9 | Refrigerator for reagent, test materials & blood | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 1-ICU-91 | Oxygen supply unit | 2 | - | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 1-ICU-92 | Pulse oxymeter | 2 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | – | Proper | A | 2 | |
| **Neurology Department** | | | | | | | | | | | | | | | | | | | | |
| 1-NE-1 | Electroencephalograph (EEG), 18-ch | 1 | 1 | Out dated—Out of order | Replacement | S/T | △ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | Ultrasound is not available. EEG, 18-ch |
| 1-NE-2 | Weighing scale for newborn | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 1-NE-3 | Electromyograph (EMG) | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 1-NE-4 | Electrocardiograph (ECG), 12-ch | 1 | 1 | Out dated | Repetition | S | × | – | – | – | – | – | – | – | | A | × | C | 0 | Repetition |
| 1-NE-5 | Suction unit | 3 | 1 | Out dated | Replacement Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |
| **Perinatal Rehabilitation Department** | | | | | | | | | | | | | | | | | | | | |
| 1-PE-1 | Weighing scale for newborn | 2 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 1-PE-2 | Infant incubator | 2 | 2 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 1-PE-3 | Nebulizer | 3 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |
| 1-PE-4 (1) | Infusion pump | 3 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | – | Excess | B | 1 | |
| 1-PE-4 (2) | Syringe pump | | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level | Contents of Evaluation | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | Result | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Needs | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Afterservice | Other Factor(s) | | Proper Q'ty Excess/Shortage | | | |
| | | | Q'ty | Condition | | P/S/ T/UH | by patients | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | |
| 1-PE-5 | Suction unit | 3 | 1 | Out dated | Replacement Supplement | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 3 | |
| 1-PE-91 | Phototherapy unit | 2 | 1 | Out dated | Replacement | P | O | O | O | O | O | O | O | -- | | -- | Proper | A | 2 | |
| Infant - Pediatric Department | | | | | | | | | | | | | | | | | | | | |
| 1-NB-1 | Weighing scale for newborn | 2 | 0 | | New | P | O | O | O | O | O | -- | -- | -- | | A | Excess | B | 1 | |
| 1-NB-2 | Sphygmomanometer | 2 | 0 | | New | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 2 | |
| 1-NB-3 | Nebulizer | 3 | 1 | Out dated | Replacement | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 3 | |
| 1-NB-4 (1) | Infusion pump | 3 | 0 | | New | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 3 | |
| 1-NB-4 (2) | Syringe pump | | 0 | | New | P | O | O | O | O | O | O | O | -- | | -- | Proper | A | 1 | |
| 1-NB-5 | Suction unit | 3 | 1 | Out dated | Replacement | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 3 | |
| 1-NB-6 | Infant incubator | 2 | 0 | | New | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 2 | |
| Family Planning Department | | | | | | | | | | | | | | | | | | | | |
| 1-FP-1 | Microscope, binocular | 1 | 1 | Out dated | Replacement | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 1 | |
| 1-FP-2 | Obstetric / Gynecology examination chair | 2 | 1 | Out dated | Replacement | P | O | O | O | O | O | -- | -- | -- | | B | Excess | B | 1 | |
| 1-FP-3 | Obstetric / Gynecology instrument set | 2 | 2 | | Replacement | P | O | O | O | O | O | -- | -- | -- | | B | Proper | A | 2 | |
| Clinical Laboratory Department | | | | | | | | | | | | | | | | | | | | |
| 1-CL-1 | Blood cell counter | 1 | 0 | Manual | New | S/T | O | O | O | O | O | O | O | O | | A | Proper | A | 1 | 8 parameters |
| 1-CL-2 | Biochemical analyzer | 1 | 0 | Manual | New | S/T | O | O | O | O | O | O | O | O | | A | Proper | A | 1 | 180 tests/h. |
| 1-CL-3 | Electrolyte analyzer (Na, K, Cl, or Ca) | 1 | 0 | | New | S/T | O | O | O | O | O | O | O | O | | A | Proper | A | 1 | |
| 1-CL-4 | Spectrophotometer | 1 | 1 | Outdated | Replacement | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 1 | |
| 1-CL-5 | Microscope, binocular | 2 | 2 | Outdated | Replacement | P | O | O | O | O | O | O | O | -- | | B | Shortage | A | 2 | |
| 1-CL-6 | Electronic analytical balance | 1 | 0 | | New | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 1 | |
| 1-CL-7 | Blood gas analyzer | 1 | 0 | | New | S/T | O | O | O | O | O | O | O | O | | A | Proper | A | 1 | |
| 1-CL-8 | pH-meter | 1 | 1 | | New | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 1 | |
| 1-CL-9 | Bilirubine analyzer | 1 | 0 | | New | S | O | O | O | O | O | O | O | -- | | A | Proper | A | 1 | |
| 1-CL-10 | Coagulometer, semi-automatic | 1 | 0 | Manual | New | S/T | O | O | O | O | O | O | O | O | | A | Proper | A | 1 | Semi-automatic |
| 1-CL-91 | Magnetic stirrer, with heater | 2 | 0 | | New | P | O | O | O | O | O | O | O | -- | | - | Proper | A | 2 | Manual testing |
| 1-CL-92 | Roller for test tube | 2 | 0 | | New | P | O | O | O | O | O | O | O | -- | | - | Proper | A | 2 | |
| 1-CL-93 | Micropipette | 10 | - | Glass | New | P | O | O | O | O | O | O | O | -- | | - | Proper | A | 10 | |
| 1-CL-94 | Pipette washer | 1 | 0 | | New | P | O | O | O | O | O | O | O | -- | | - | Proper | A | 1 | |
| 1-CL-95 | Glassware washer | 1 | 0 | | New | P | O | O | O | O | O | O | O | -- | | - | Proper | A | 1 | |
| 1-CL-96 (1) | Centrifuge (General) | 1 | 1 | | New | P | O | O | O | O | O | O | O | -- | | - | Proper | A | 1 | |
| 1-CL-96 (2) | Centrifuge (Hematocrit) | 1 | 1 | | New | P | O | O | O | O | O | O | O | -- | | - | Proper | A | 1 | |
| Laundry Department | | | | | | | | | | | | | | | | | | | | |
| 1-LD-1 (1) | Washing machine, 30kg | 2 | 4 | Out dated=Out of order | Replacement | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 2 | |
| 1-LD-1 (2) | Extractor (Laundry) | | 2 | Out dated=Out of order | Replacement | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 2 | |
| 1-LD-1 (3) | Drying machine (Laundry) | | 2 | Out dated=Out of order | Replacement | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 2 | |
| 1-LD-2 | Ironing machine (Laundry) with table 150cm width | 1 | 1 | Out dated | Replacement | P | O | O | O | O | O | O | O | -- | | A | Proper | A | 1 | |

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level | Contents of Evaluation | | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | Result | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | P/S/ T/UH | Needs by patients | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Afterservice | Other Factor(s) | | Proper Q'ty Excess/Shortage | | | |
| | | | | | | | | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| **Polyclinic No. 5** | | | | | | | | | | | | | | | | | | | | |
| 1-PC-1 (1) | Dental unit with chair and air-compressor | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 1-PC-1 (2) | Dental instrument set | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 1-PC-2 (1) | ENT chair unit | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 1-PC-2 (2) | ENT instrument set | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | – | – | – | | A | Proper | A | 1 | |
| 1-PC-3 (1) | Ophthalmology chair mounted unit | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 1-PC-3 (2) | Ophthalmology lenses diagnostic set | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | – | – | – | | A | Proper | A | 1 | |
| 1-PC-3 (3) | Ophthalmology instrument set | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | – | – | – | | A | Proper | A | 1 | |
| 1-PC-4 | Electrocardiograph (ECG), 6-ch | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| **General Hospital Equipment & Others** | | | | | | | | | | | | | | | | | | | | |
| 1-G-1 | General diagnostic set | 20 | - | Out dated | Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Excess | B | 6 | 1 set / 20 beds |
| 1-G-2 | Ambulance | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| 1-G-3 | Minibus panel van | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | △ | ○ | ○ | ○ | Vehicle | A | × | C | 0 | |

* Remarks ; P : Primary Medical Facility Level

S : Secondary Medical Facility Level

T : Tertiary Medical Facility Level

UH : University (Medical Teaching) Hospital Level

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level P/S/ T/UH | Contents of Evaluation | | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | | Needs by patients | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Aftersevice | Other Factor(s) | | Proper Q'ty Excess/Shortage | Result | | |
| | | | | | | | | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| **Children's Infectious Diseases Hospital** | | | | | | | | | | | | | | | | | | | | |
| **X-ray Department** | | | | | | | | | | | | | | | | | | | | |
| 3-X-1 | X-ray stationary unit for X-ray scopy and X-ray graphy | 1 | 1 | Out dated→Out of order | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Proper | A | 1 | |
| 3-X-2 | X-ray film processor, automatic | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-X-3 | X-ray mobile unit | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | B | Proper | A | 1 | |
| 3-X-91 | X-ray film development set | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-X-92 | X-ray protective apron | 2 | 2 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 3-X-93 | Ultrasound Unit, Portable with Linear and Convex probe | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 1 | |
| **Reanimation Department (ICU)** | | | | | | | | | | | | | | | | | | | | |
| 3-ICU-1 (1) | Ventilator for infant (Newborn) | 3 | 1 | Out dated | Replacement Supplement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | A | Excess | B | 2 | |
| 3-ICU-1 (2) | Ventilator for child and adult | - | 1 | Out dated | Replacement Supplement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | – | Proper | A | 1 | |
| 3-ICU-2 | Anesthesia apparatus with ventilator | 1 | 1 | Out dated | Replacement | S/T | × | – | – | – | – | – | – | – | | A | × | C | 0 | Canceled |
| 3-ICU-3 | Ultrasonic nebulizer | 3 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | B | 3 | |
| 3-ICU-4 | Patient monitor | 9 | 9 | Out dated→Out of order | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 9 | |
| 3-ICU-5 | Central monitor | 1 | 0 | | New | S/T | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 3-ICU-6 | Infant incubator | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Proper | A | 1 | |
| 3-ICU-7 | Plazmapheresis unit | 1 | 0 | | New | T/UH | × | △ | △ | × | × | × | × | × | | A | × | C | 0 | |
| 3-ICU-8 (1) | Infusion pump | 9 | - | Out dated | Replacement Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 7 | |
| 3-ICU-8 (2) | Syringe pump | | - | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | – | | A | 2 | |
| 3-ICU-9 | Oxygen supply unit | 5 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 3-ICU-10 | Weighing scale for newborn | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-ICU-11 | Sphygmomanometer (Aneroid type) | 5 | 1 | Out dated | Replacement Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 2 | |
| 3-ICU-12 | Laryngoscope set for child with ambu bag | 3 | 3 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Proper | A | 3 | |
| 3-ICU-13 | Blood hemosorbtion unit | 1 | 1 | Out of order | Replacement | T/UH | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Proper | A | 1 | |
| 3-ICU-14 | UV Extracorporal blood disinfection | 1 | 1 | Out of order | Replacement | T/UH | × | – | – | – | – | – | – | – | | B | × | C | 0 | |
| 3-ICU-15 | Refrigerator for reagent, test materials & blood | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Proper | A | 1 | |
| 3-ICU-91 | Suction unit | 2 | 1 | Out dated | Replacement Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | – | Proper | A | 2 | |
| 3-ICU-92 | Suction unit, Low pressure continuous | 2 | 0 | | New | S | × | – | – | – | – | – | – | – | | – | × | C | 0 | Canceled |
| 3-ICU-93 | Pulse oxymeter | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | – | Proper | A | 1 | |
| **Functional Examination Department** | | | | | | | | | | | | | | | | | | | | |
| 3-EX-1 | Echoencephalography unit | 1 | 1 | Out of order | Replacement | T/UH | × | – | – | – | – | – | – | – | | B | × | C | 0 | |
| 3-EX-2 | Weighing scale for newborn | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-EX-3 | Cardioanalyzer, Multichannel | 1 | 0 | | New | T/UH | × | ○ | ○ | × | ○ | ○ | ○ | – | | A | × | C | 0 | |
| 3-EX-4 | Spiroanalyzer | 1 | 0 | | New | T/UH | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-EX-5 | Electrocardiograph (ECG), 1-ch | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-EX-91 | Electrocardiograph (ECG), 6-ch | 1 | 1 | | Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | – | Proper | A | 1 | |
| 3-EX-92 | Electroencephalograph (EEG), 18-ch | 1 | 1 | | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | – | Proper | A | 1 | |

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level P/S/T/UH | Contents of Evaluation | | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty Proper Q'ty Excess/Shortage | Result | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | | Needs by patients | Technical Evaluation: Medical | Technical Evaluation: Operation | Technical Evaluation: Maintenance | Financial / Bugetary Evaluation: Level | Financial / Bugetary Evaluation: Ability Y/N | Financial / Bugetary Evaluation: Continuance | Condition of Afterservice | Other Factor(s) | | | | | |
| **Endoscopy Department** | | | | | | | | | | | | | | | | | | | | |
| 3-ES-1 | Endoscope cleaning set | 2 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 3-ES-2 | Ultrasonic washing unit, table top for endoscopic tools | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Proper | A | 1 | |
| **IIF : Intestinal Infectious Disease Department** | | | | | | | | | | | | | | | | | | | | |
| 3-IIF-1 | Weighing scale for newborn | 3 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 3-IIF-2 | Weighing Scale | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-IIF-3 | Sphygmomanometer | 5 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 3 | |
| 3-IIF-4 | Ultrasonic nebulizer | 2 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 3-IIF-5 (1) | Infusion pump | 3 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |
| 3-IIF-5 (2) | Syringe pump | - | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| **VIF : Virus Infectious Disease Department** | | | | | | | | | | | | | | | | | | | | |
| 3-VIF-1 | Weighing scale for newborn | 2 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 3-VIF-2 | Weighing Scale | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-VIF-3 | Sphygmomanometer | 3 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |
| 3-VIF-4 | Ultrasonic nebulizer | 2 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 2 | |
| 3-VIF-5 (1) | Infusion pump | 3 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |
| 3-VIF-5 (2) | Syringe pump | - | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| **AIF : Aerial Infectious Disease Department** | | | | | | | | | | | | | | | | | | | | |
| 3-AIF-1 | Weighing scale for newborn | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-AIF-2 | Weighing Scale | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-AIF-3 | Sphygmomanometer | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |
| 3-AIF-4 | Ultrasonic nebulizer | 3 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 2 | |
| 3-AIF-5 (1) | Infusion pump | 3 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 3 | |
| 3-AIF-5 (2) | Syringe pump | - | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| **Clinical Laboratory Department** | | | | | | | | | | | | | | | | | | | | |
| 3-CL-1 | Blood cell counter | 1 | 0 | Manual testing | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-CL-2 | Biochemical analyzer | 1 | 0 | Manual testing | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-CL-3 | Electrolyte analyzer (Na, K, Cl, or Ca) | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-CL-5 | Spectrophotometer | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Proper | A | 1 | |
| 3-CL-6 | Microscope, binocular | 2 | 2 | | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Proper | A | 2 | |
| 3-CL-7 | Electronic analytical balance | 1 | 0 | Out dated | Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-CL-8 | Blood gas analyzer | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-CL-9 | pH-meter | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Proper | A | 1 | |
| 3-CL-10 | Coagulometer, semi-automatic | 1 | 0 | Manual testing | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-CL-11 | Hemoglobinmeter | 1 | 0 | | New | S/T | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 3-CL-12 | Refractometer, handy unit (express) | 1 | 1 | | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-CL-13 | Glucose analyzer | 1 | 0 | | New | S/T | × | – | – | – | – | – | – | – | | A | × | C | 0 | |

## Examination of Equipment

| Item No. | Description | Q'ty | Existing Equipment | | Replacement, Supplement or New | Level | Contents of Evaluation | | | | | | | | Priority by Kazakhstan Side | Adequacy of Q'ty | Result | Q'ty Planned | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Q'ty | Condition | | P/S/ T/UH | Needs by patients | Technical Evaluation | | | Financial / Bugetary Evaluation | | | Condition of Afterservice | Other Factor(s) | | Proper Q'ty Excess/Shortage | | | |
| | | | | | | | | Medical | Operation | Maintenance | Level | Ability Y/N | Continuance | | | | | | | |
| 3-CL-14 | Fume hood | 1 | 1 | | Replacement | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Proper | A | 1 | |
| 3-CL-91 | Magnetic stirrer, with heater | 2 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | – | Proper | A | 2 | |
| 3-CL-92 | Roller for test tube | 2 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | – | Proper | A | 2 | |
| 3-CL-93 | Micropipette | 10 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | – | Proper | A | 10 | |
| 3-CL-94 | Pipette washer | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | – | Proper | A | 1 | |
| 3-CL-95 | Glassware washer | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | – | Proper | A | 1 | |
| 3-CL-96 (1) | Centrifuge (General) | - | 2 | Out dated—Out of order | Replacement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 1 | |
| 3-CL-96 (2) | Centrifuge (Hematocrit) | - | - | | Supplement | P/S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 1 | |
| Bacteriology Laboratory | | | | | | | | | | | | | | | | | | | | |
| 3-CLB-1 | Colony counter (manual test) | 2 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Excess | B | 1 | |
| 3-CLB-2 | Autoclave, desk top type | 1 | 0 | | New | P | × | – | – | – | – | – | – | – | | A | × | C | 0 | Vertical type is available |
| 3-CLB-3 | pH-meter | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-CLB-4 | Nitrogen dry box, multistation | 1 | 0 | | New | T/UH | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 3-CLB-5 | Sterilizer | 1 | 0 | | New | P | × | – | – | – | – | – | – | – | | A | × | C | 0 | |
| 3-CLB-6 | Microscope (Stereoscope) | 1 | 0 | | New | S/T | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-CLB-91 | Autoclave, vertical Type | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 1 | |
| 3-CLB-92 | CO2 Incubator | 1 | 0 | | New | S/T | × | – | – | – | – | – | – | – | | - | × | C | 0 | |
| 3-CLB-93 | Microscope, binocular | 1 | 1 | | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | - | Proper | A | 1 | |
| Sterilization Department | | | | | | | | | | | | | | | | | | | | |
| 3-ST-1 | High Pressure Steam Sterilizer (200 lit.) | 1 | 2 | Out dated | Replacement | S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-ST-2 | Hot air sterilizer | 1 | 1 | Out dated | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-ST-3 | Ultrasonic washing unit, table top | 1 | 0 | | New | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| Emergency Reception - Diagnostic Department | | | | | | | | | | | | | | | | | | | | |
| 3-EM-1 | Weighing scale for newborn | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-EM-2 | Sphygmomanometer (Aneroid type) | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| 3-EM-3 | Weighing Scale | 1 | 1 | Out dated | Replacement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | A | Proper | A | 1 | |
| General Hospital Equipment & Others | | | | | | | | | | | | | | | | | | | | |
| 3-G-1 | General diagnostic set | 10 | - | | Supplement | P | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | B | Excess | B | 6 | |
| 3-G-2 | Ambulance | 1 | 1 | Out dated | Replacement | P | – | – | – | – | – | – | – | – | | A | × | C | 0 | Canceled |
| Milk Plant | | | | | | | | | | | | | | | | | | | | |
| 3-MILK-1 | Milk processing Equipment | 1 | 1 | Working | Replacement | – | × | – | ○ | ○ | – | – | – | – | | A | × | C | 0 | not Medical Equipment |
| 3-MILK-2 | Minibus panel van | 1 | 1 | | Replacement | – | × | – | – | – | – | – | – | – | Vehicle | A | × | C | 0 | |

* Remarks : P : Primary Medical Facility Level

S : Secondary Medical Facility Level

T : Tertiary Medical Facility Level

UH : University (Medical Teaching) Hospital Level

(3) Equipment Planned for the Project

Equipment planned for the Project is shown in the following table.