

SYRIAN ARAB REPUBLIC  
MINISTRY OF HEALTH

PREPARATORY SURVEY REPORT  
ON  
THE PROJECT FOR PEDIATRIC  
EQUIPMENT IN THE NORTH EAST SYRIA  
IN  
THE SYRIAN ARAB REPUBLIC

FEBRUARY, 2011

JAPAN INTERNATIONAL COOPERATION AGENCY

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INTERNATIONAL TOTAL ENGINEERING CORPORATION

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## **PREFACE**

Japan International Cooperation Agency (JICA) decided to conduct the preparatory survey on the Project for Pediatric Equipment in the North East Syria in the Syrian Arab Republic, and entrusted the survey to International Total Engineering Corporation.

The survey team conducted field investigations and held a series of discussions with the officials concerned of the Government of Syria from March 2010 to February, 2011. As a result of further studies in Japan, 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.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of Syria for their close cooperation extended to the survey teams.

February, 2011

Nobuko Kayashima  
Director General,  
Human Development Department  
Japan International Cooperation Agency

## Summary

# Summary

## 1. Outline of the country

Syrian Arab Republic (hereinafter referred to as “Syria”) borders upon Turkey in the northern area, Iraq in the eastern area, Jordan in the southern area and Palestine and Lebanon in the western area. Western part of its areas border the Mediterranean Sea. The capital city is Damascus.

With the land area of 185,180km<sup>2</sup>, coastal areas are plain and fertile land stretches throughout the southern area, which bears the most of its country’s food production. The Syrian Desert lies in the northern area, semi-arid zone continuing to Arabian Peninsula, while Anti-Lebanon Mountains lies in the central area.

Per capita GNI is US\$2,150 (World Bank, 2008). It adopts the economic policy which includes introduction of private capital and relaxation of regulations, while maintaining socialistic planned economy. It is now promoting the gradual transition to market economy. Their challenge is a departure from the primary industry which is easily affected by the weather and oil production, to stimulation of the tourism industry and textile industry by introducing foreign investment. It has suffered from languid economy due mainly to economic sanction led by the US since 2004. The influx of some millions of Iraqi refugees also increases financial burden of the country.

## 2. Background and overview of the Project

The Syrian Arab Republic, like neighbor countries in the Middle East, has built a relatively good environment in key areas including healthcare and education. The country, however, suffers from an emerging problem, which is the expanding disparity among geographical areas within the country. While the Damascus governorate and the southern region are provided with a generally well-developed healthcare environment, the northeastern region marking the highest level of poverty in the country is grossly underperforming the national average in many healthcare indices such as maternal death rate and the number of hospital beds per population.

The northeastern region consisting of the three governorates of Raqqa, Dier-ez-Zor, and Hasaka is characterized by the high prevalence of respiratory diseases, which are caused by sandstorms and increase during the season with frequent severe sandstorms, typically winter. Infants and children before the full development of bodily organs are affected the most, and the pediatric bed occupancy rate at national hospitals goes up to 200% during the peak season. Furthermore, this region ranks under the national average in the number of physicians and the number of hospital beds while it has a high population growth rate, and in this situation, it is difficult to provide sufficient healthcare services to local inhabitants. Prompt actions toward the development and enhancement of healthcare systems are therefore needed. In addition, the eastern part of this region is adjacent to Iraq, and many refugees from Iraq are entering the region seeking healthcare services. The need for healthcare

services for infants among these refugees is also increasing.

The Syrian Ministry of Health has developed a plan to construct many small and medium-sized hospitals (30-120 beds) in rural areas from the standpoint of correcting the disparity in healthcare services between urban and rural areas, and is proceeding with the budget allocation to facility construction and improvement costs for this purpose. However, in reality, it is difficult to cover the reasonable needs in the northeastern region due to budgetary limitation. In this situation, the JICA preparatory survey “Regional Development in the Northeastern Syria” was conducted aiming at the project formation in fiscal 2008. In this study, although the Syrian Government expressed the will to invest as much resources as possible to improve the standard of healthcare in the region, it was recognized that advanced healthcare equipment would have to be introduced from outside the country and it would be difficult to achieve the purpose using self-help efforts alone.

This Project pertains to the request submitted to the Japanese Government regarding the fund needed for the procurement of pediatric and perinatal care equipment to be used at Raqqa Pediatric Hospital, Dier-ez-Zor Pediatric and Gynecology Hospital, and Hasaka Internal, Gynecology and Pediatric Hospital, which are planned to function as the core hospitals for pediatric care in the northeastern region.

### 3. Outline of the Study and Contents of the Project

In response to the above-described request, the Government of Japan decided to conduct a Preparatory Survey (Outline Design), and accordingly Japan International Cooperation Agency (JICA) dispatched a Preparatory Survey Team to Syria for 27 days from March 8 to April 3, 2010. After coming back to Japan, the Survey Team compiled a Draft Report based on analyses of the findings in Syria and conducted an explanation of the Draft Report for 14 days from December 8 to 21, 2010, to explain the contents of the report to and have discussion with the Syrian counterparts.

The equipment to be procured under the requested assistance project was designed with consideration given to the positioning of the target hospitals, the status quo of existing equipment, activities performed in existing and related facilities, technical levels, financial capacity, and so forth, so as to choose equipment that is consistent with the activities of the target hospitals. The Table below shows the major equipment planned under the Project

List of Major Equipment

Department	Equipment	Purpose	Q'ty
Common	Ambulance	Transfers emergency cases and serious cases with a sudden change in the condition to other medical facilities in a safe manner.	1
Laboratory	Biochemistry analyzer	Analyzes blood and urine samples per component using reagents within a short period of time, thereby contributing to the ascertainment on the metabolism of living body.	3

Department	Equipment	Purpose	Q'ty
Laboratory	Blood gas analyzer	Analyzes blood gas concentration in the patient blood to determine the patient conditions.	3
Laboratory	Spectrophotometer	Measures the intensity distribution of the spectrum of light, uses for quantitative analysis of the solution sample.	4
Laboratory	Hematology analyzer A	Measures the numbers of red blood cells, leukocytes, hemoglobins, etc. It is a basic blood tester widely employed in diagnosis.	2
Laboratory	Hematology analyzer B	Measures the numbers of red blood cells, leukocytes, hemoglobins, etc. It can analyze white blood cell more widely.	2
Operation	Anesthesia apparatus with ventilator	Generally anesthetize a patient in a surgery.	5
Operation	Ceiling lamp (1 arm)	Used to irradiate the surgeon's field.	2
Operation	Ceiling lamp (2 arm)	Used to irradiate the surgeon's field.	3
Operation	Electric surgical unit	Used to cut, coagulate the patient body in an operation room	5
Operation	Instrument set for hysterectomy	Used for hysterectomy surgery.	2
Operation	Operation table (mobile)	Fixes the patient in appropriate position in various operations.	2
Operation	Operation table (electrical)	Fixes the patient in appropriate position in various operations.	3
Operation	High pressure steam sterilizer	Sterilizes steel small articles and linens used in the hospital, using high-pressure steam.	4
Operation Emergency	Defibrillator	Used to regain the heart function by electrical shock during ventricular fibrillation	14
Pediatric	Infant incubator	Used to protect immature baby or new born patient under appropriate temperature and humidity	50
Pediatric	Mobile incubator	Used to protect and transfer immature baby or new born patient under appropriate temperature and humidity	1
Pediatric	Neonatal treatment table	Used to treat immature baby or new born patient under appropriate temperature and humidity	9
ICU	Central monitor	Used to centrally monitor vital information of a number of patients	2
ICU	Patient monitor (adult, standard)	Continuously monitors the bio-information of a patient in operation theatres and recovery rooms.	6
ICU	Patient monitor (infant, standard)	Continuously monitors the bio-information of a patient in operation theatres and recovery rooms.	27
ICU	Patient monitor (IBP)	Continuously monitors the bio-information of a patient in the ICU. It is equipped with invasive blood pressure monitoring function.	2
ICU	Patient monitor (infant, standard + CO2)	Continuously monitors the bio-information of a patient in the ICU. It is equipped with a CO2 sensor for particularly monitoring the patient's respiratory function.	2
ICU	ICU Bed	Used to fix the patient body in an ICU	28
ICU	Ventilator (adult)	Used for patients who have a difficulty in spontaneous respiration in the ICU.	2
ICU	Ventilator (infant)	Used for patients who have a difficulty in spontaneous respiration in the ICU.	25
Imagery	CT Scanner (multislice helical)	Used to diagnose the patient with tomography scanning	1
Imagery	Ultrasound (B/W, OB/GY)	Used to examine womb, ovarium, conditions of fetus in OB/GY department	2

Department	Equipment	Purpose	Q'ty
Imagery	Ultrasound (B/W, infant)	Used to examine abdominal and superficial conditions of patient in pediatric department	1
Imagery	Ultrasound (color doppler, infant)	To be used for ultrasound diagnosis inside body, mainly for examination of pericardia, abdominal, and thyroid gland in pediatric department.	3
Imagery	X-ray unit (fluoroscope)	Used to diagnose womb, salpinx uterine, digestive organs of the patient with fluoroscopic image	3
Imagery	X-ray unit (C-arm)	To carry out fluoroscopy diagnosis in operation room.	1
Imagery	X-ray Unit (general, analog)	X-rays the thorax, abdomen, and limbs for general purposes.	1
Imagery	X-ray unit (mobile)	Urgently and simply X-rays a patient who has a difficulty in changing his/her position in operation theatres and the ICU.	2

#### 4. Implementation schedule and cost estimation

Assuming that this project is to be carried out under Japan's grant-aid assistance scheme, the total implementation period will require approximately 21.45 months, consisting of app. 9.4 months for detailed design and app. 12.05 months for equipment procurement.

Cost to be borne by Syria will be 11,555. US dollars (app. 1.06 million yen)

#### 5. Project evaluation

From the following considerations, it is considered that this Project is relevant for implementation as an assistance project with Japan's Grant Aid fund.

- While the Syrian Government plans to construct small and medium-sized hospitals in rural areas from the standpoint of correcting urban-rural disparity in healthcare services, the beneficiaries of this Project are in the significantly impoverished northeastern region (the three directorates of Raqqa, Dier-ez-Zor, and Hasaka) and are the ordinary citizens representing about 17% of the national population.
- The equipment planned in this Project does not require an excessively high level of expertise and can be operated and maintained using the country's own fund, human resources, and technology.
- This Project is considered to contribute to the "improvement of pediatric medicine and perinatal medicine," which is a priority action area identified in the "Targets and Development Strategies in the Healthcare Sector" formulated in January 2010 in line with the 10th 5-year plan (2006-2011).
- Including the target hospitals of this Project, public hospitals in Syria provide medical care free of charge, and this Project would not be substantially profitable.



- This Project would not have particularly notable negative impacts in environmental and social aspects.
- This Project can be implemented with the Grant Aid assistance scheme of the Japanese Government without causing significant difficulties.

The following quantitative effects are expected from the implementation of this cooperation Project.

#### Raqqa Pediatric Hospital

Index	Reference year	Target value (2015)
Number of inpatients	0	15,700
Number of surgical operations	0	2,400
Number of radiological tests	0	4,700
Number of laboratory tests	0	27,000

\* Raqqa Pediatric Hospital is a new hospital currently under construction, which will be separated from the Pediatric Department of Raqqa National Hospital. Data of Raqqa National Hospital does exist as a whole data, but the data for Pediatric Department alone is not available. Therefore, only the target values are shown in this table, based on the actual operation.

#### Dier-ez-Zor Pediatric and Gynecology Hospital

Index	Reference year (2009)	Target value (2015)
Number of inpatients	17,752	21,600
Number of surgical operations	3,745	5,400
Number of child deliveries	5,994	8,000
Number of radiological tests	21,014	30,500
Number of laboratory tests	140,475	189,900

#### Hasaka Internal, Gynecology and Pediatric Hospital

Index	Reference year (2009)	Target value (2015)
Number of inpatients	8,295	9,800
Number of radiological tests	8,048	11,600
Number of laboratory tests	24,635	33,200

The following qualitative effects are expected from the implementation of this Project.

- As a result of the use of medical equipment relating to pediatric and perinatal care in the top referral hospitals for pediatrics and perinatal care in the north eastern region, the pediatric and perinatal medical service will be improved.

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## Location Map

### Middle East Countries



### Syria Arab Republic

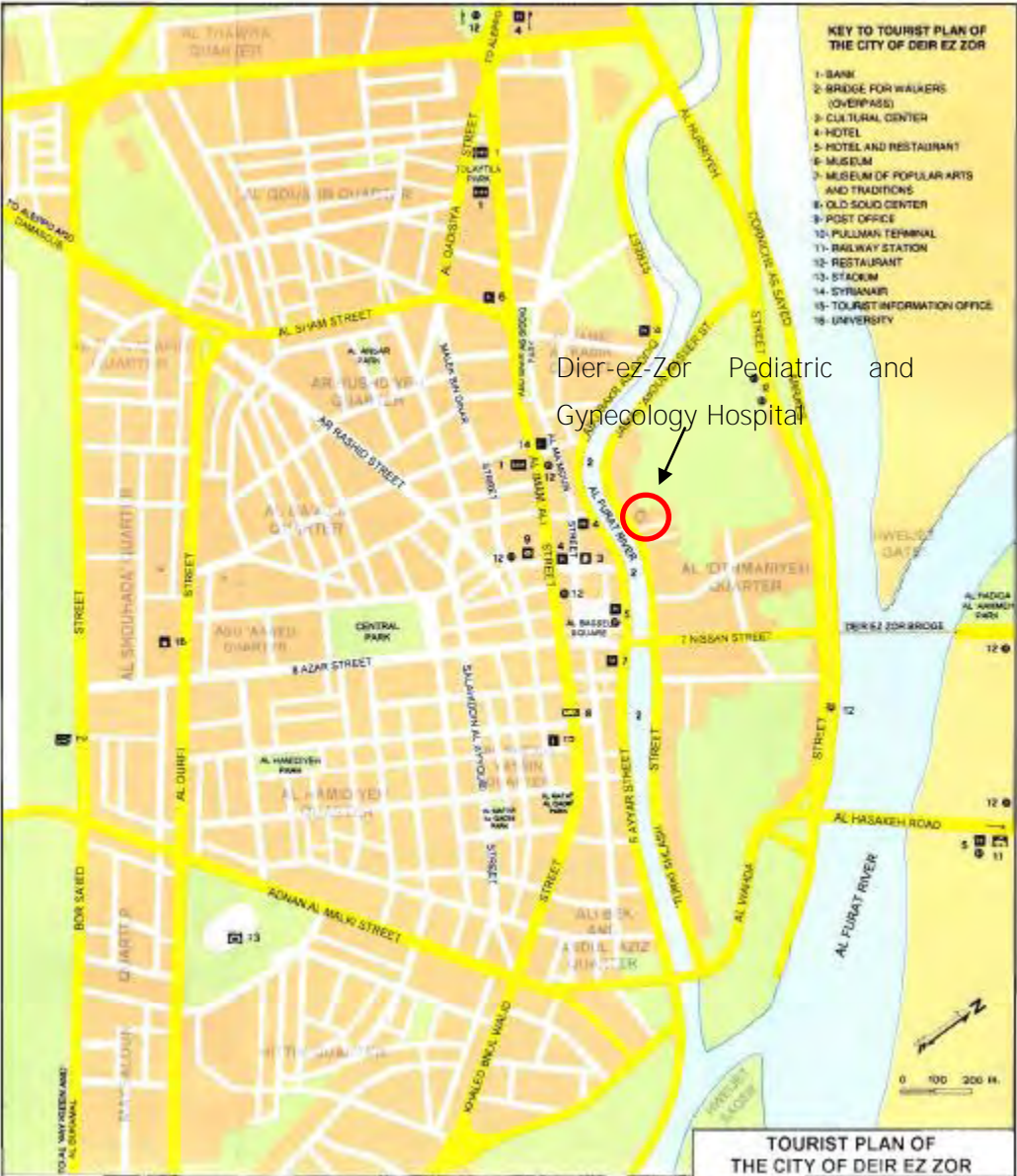


Source : Ministry of Foreign Affairs, Japan HP, Wikipedia

Location Map (Raqqa Pediatric Hospital)

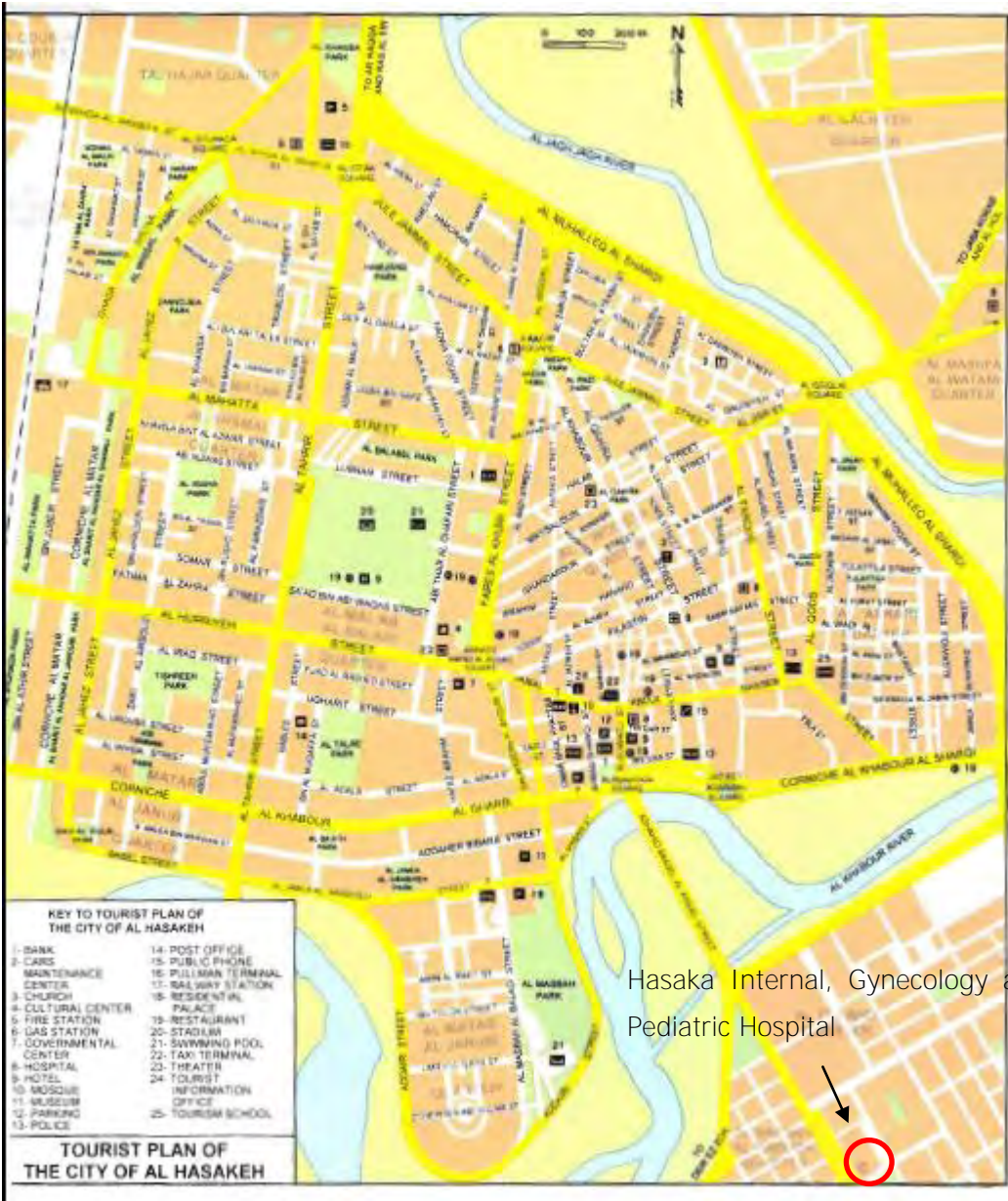


Location Map (Dier-ez-Zor Pediatric and Gynecology Hospital)





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### List of Abbreviations

Abbreviation	Original Name
B/L	Bill of Lading
BHN	Basic Human Needs
BS	British Standard
DIN	Deutsche Industrie Normen
E/N	Exchange of Notes
ECG	Electrocardiogram
ENT	Ear, Nose, Throat
EOJ	Embassy of Japan
EU	European Union
G/A	Grant Agreement
GDP	Gross Domestic Product
GNI	Gross National Income
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
ICU	Intensive Care Unit
IR	Inception Report
JICA	Japan International Cooperation Agency
JIS	Japan Industrial Standard
M/D	Minutes of Discussion
MOH	Ministry of Health
MRI	Magnetic Resonance Imaging
NICU	Neonatal Intensive Care Unit
ODA	Official Development Assistance
QTR	Questionnaire
TTS	Telegraphic Transfer Selling
UL	Underwriters Laboratories
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations International Children's Emergency Fund
UPS	Uninterrupted Power Supply
USAID	United States Agency for International Development
WHO	World Health Organizaton

## Chapter 1. Background of the Project

# Chapter 1 Background of the Project

## 1-1 Background and outline of the Project

The Syrian Arab Republic, like neighbor countries in the Middle East, has built a relatively good environment in key areas including healthcare and education. The country, however, suffers from an emerging problem, which is the expanding disparity among geographical areas within the country. While the Damascus governorate and the southern region are provided with a generally well-developed healthcare environment, the northeastern region marking the highest level of poverty in the country is grossly underperforming the national average in many healthcare indices such as maternal death rate and the number of hospital beds per population.

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The Syrian Ministry of Health has developed a plan to construct many small and medium-sized hospitals (30-120 beds) in rural areas from the standpoint of correcting the disparity in healthcare services between urban and rural areas, and is proceeding with the budget allocation to facility construction and improvement costs for this purpose. However, in reality, it is difficult to cover the reasonable needs in the northeastern region due to budgetary limitation. In this situation, the JICA preparatory survey “Regional Development in the Northeastern Syria” was conducted aiming at the project formation in fiscal 2008. In this study, although the Syrian Government expressed the will to invest as much resources as possible to improve the standard of healthcare in the region, it was recognized that advanced healthcare equipment would have to be introduced from outside the country and it would be difficult to achieve the purpose using self-help efforts alone.

This Project pertains to the request submitted to the Japanese Government regarding the fund needed for the procurement of pediatric and perinatal care equipment to be used at Raqqa Pediatric Hospital, Dier-ez-Zor Pediatric and Gynecology Hospital, and Hasaka Internal, Gynecology and Pediatric Hospital, which are planned to function as the core hospitals for pediatric care in the northeastern region.

## 1-2 Natural Conditions

The northeastern region containing Raqqa, Dier-ez-Zor, and Hasaka belongs to a semi-arid climate zone. Although there are four seasons, spring and fall are very short and sandstorms occur in winter and spring. The four months from June to September are the dry season with virtually no rain. In winter, temperature is

low and there are some rainfall and snowfall.

### 1-3 Social and Environmental Issues

Regarding waste treatment, Hasaka Internal, Gynecology and Pediatric Hospital and Dier-ez-Zor Pediatric and Gynecology Hospital have a practice of classifying medical wastes and general wastes within each facility and these are collected by the contractors designated by municipalities. At Raqqa National Hospital, medical wastes are separated and sterilized in the hospital and then collected, combined with general wastes, by the contractor designated by the municipality. In addition, posters showing waste classification rules are put up at various places in this hospital, encouraging the strict adherence to waste classification.

## Chapter 2. Contents of the Project

## **Chapter 2 Contents of the Project**

### **2-1 Basic Concept of the Project**

#### **2-1-1 Objectives of the Project and its Overall Goals**

In January 2010, the Government of the Syrian Arab Republic formulated the “Goals and Development Strategy for the Health Sector” in line with the 10<sup>th</sup> Five Year Health Plan (2006-2010). It places “improvement of pediatric care and perinatal care” as one of the priority issues and also describes the government’s policy of constructing small and middle-scale hospitals in rural areas in an aim to reduce the urban-rural disparities regarding access to medical services. In particular, the north-eastern area with high poverty level (three governorates of Raqqa, Dier-ez-Zor, and Hasaka) are positioned as priority areas since their health indicators, including number of hospital beds (0.88 bed/1000 population, against the national average of 1.4) and number of doctor (1550 population/doctor, against national average of 650), are considerably inferior compared to Damascus Governorate or the country’s southern area where the overall health environment is good.

In order to improve this situation, this present project aims at supplying medical equipment for pediatric and perinatal care for Dier-ez-Zor Pediatric and Gynecology Hospital, Hasaka Internal, Gynecology and Pediatric Hospital, which are unable to play their roles as a core hospital in their regions due to aging and insufficiency of the equipment, and Raqqa Pediatric Hospital which is currently under construction.

#### **2-1-2 Outline Design the Project**

In order to improve overall level of quality of health services in the north-eastern region as a higher goal of the Project, this Project will supply the medical equipment for pediatric and perinatal care with the three target hospitals (Dier-ez-Zor Pediatric and Gynecology Hospital, Hasaka Internal, Gynecology and Pediatric Hospital and Raqqa Pediatric Hospital) so that the target hospitals can provide appropriate level of pediatric and perinatal medical services.

### **2-2 Outline Design of the Japanese Assistance**

#### **2-2-1 Basic Policy**

The development of the equipment plan shall be based on the comprehensive consideration of the position of the target hospitals, the condition of existing equipment, skill levels, financial bearing power, the activities of existing and related facilities, and the availability of spare parts and expendable supplies, and other factors. The equipment to be procured shall comprise the items that are consistent with the activities of the target hospitals and that are within the ability of maintenance and management. The basic policy concerning equipment selection is described below.

##### **1) Target Facilities**

The hospitals and departments covered by this Project are as follows.

Table 2-1 Target Hospitals and Departments of This Project

Raqqa Pediatric Hospital	Dier-ez-Zor Pediatric and Gynecology Hospital	Hasaka Internal, Gynecology and Pediatric Hospital
ICU, Laboratory assays, Pediatrics department, Out-patient department, Sterilization department, Operation department, Wards., Diagnostic imaging department, Shared	ICU, Laboratory assays, Obstetrics and gynecology department, Pediatrics department, Out-patient Department, Sterilization department, Operation dept., Wards, Diagnostic imaging department	ICU, Laboratory assays, Pediatrics department, Out-patient department, Wards, Diagnostic imaging department, Shared

## 2) Contents of Procured Equipment

This cooperation project will cover the medical equipment needed for healthcare activities centered on pediatrics/neonatal care and obstetrics and gynecology. The equipment that would require renovation or reinforcement of a facility for the implementation of this Project will not be covered. Also excluded from the coverage of this Project are the equipment that would cause difficulty in view of the medical equipment maintenance systems in Syria and the skill level of the target hospitals, and the equipment that would have difficulty in replacement of parts and repair due to a lack of manufacturer's agencies providing maintenance services within Syria.

### (2) Policy Concerning the Grade, Specifications, Quantities, etc. of Equipment

Quantities shall be defined appropriately considering the number of existing users, the number of rooms where equipment would be used, and the number of existing units that would remain usable in the future. Items such as surgical instruments shall be planned to include reserve quantities considering sterilization processes.

Certain quantities of spare parts and expendable supplies shall be included in the plan to provide for the initial needs during the period after the delivery of equipment until the Syrian side develops a procurement system.

### (3) Policy Concerning Procurement

#### a. Eligible Source Countries

The equipment to be procured shall be products of Japan or Syria as a rule. However, in the case where third-country products are considered desirable in terms of superiority in pricing, superiority in maintenance, the common use in Syria, and other conditions, procurement from a third country may be considered following the consent of the both countries and the review of the conditions outlined below. The procurement plan for other equipment shall be developed considering the certainty of delivery time and the superiority in procurement prices.

- There is a branch office, agency, etc. in Syria and the product has superiority in maintenance.
- The product has a low incidence rate of failures and other events and requires low maintenance cost.
- A product of Japan or Syria is nonexistent or does not meet specifications.
- The product is easy to service and inspect, and is the product of a manufacturer with a well-developed maintenance system.

- The equipment is used commonly in Syria.
- The equipment can be procured and delivered within the time limit set by E/N and G/A.

b. Transportation Method

The equipment procured from Japan and that from a third country shall be shipped, after moisture-proof air-tight packaging, in containers from respective ports to Latakia Port, a major trading port in Syria, and landed there. After customs clearance, items are put together and classified as necessary in specified warehouses, and then transported in trucks to respective sites.

(4) Policy Concerning Operation and Maintenance

The maintenance of medical equipment is performed first by the engineers at each hospital, then by the engineers at the health directorate of the governorate, and then by the Medical Equipment Maintenance Division of the Ministry of Health. If there still is difficulty, agencies of the manufacturers provide maintenance services. For this reason, the medical equipment that would require periodical repair and maintenance shall be selected for procurement in this Project from the products of the manufacturers providing services in Syria or a neighboring country.

(5) Policy Concerning Natural Environmental Conditions

The north-eastern area containing Raqqa, Dier-ez-Zor, and Hasaka belongs to the semi-arid climate. Although there are four seasons, spring and autumn are extremely short, and sandstorms occur in spring. The dry season continues for four months from June to September, when rainfall is practically absent. In winter, temperature is lower and there are rainfall and snowfall. There is no need for special consideration regarding natural environmental conditions.



(6) Policy Concerning Overall Schedule

The overall work schedule of this Project shall be defined appropriately according to the mechanism of Japan's grant-aid assistance. The above-mentioned construction of Raqqa Pediatric Hospital, the renovation of Dier-ez-Zor Pediatric and Gynecology Hospital, and the construction of the new delivery ward building and the outpatient ward building of the hospital need to be completed before the arrival of the equipment.

(7) Examination of Individual Equipment

Based on the above policies, the necessity and appropriateness of requested equipment were examined in detail, and comprehensive judgment was made as follows. The quantity planning and contents of individual equipment are as listed in Appendix 2: Requested Equipment Evaluation Table.

## 2-2-2 Basic Plan

### (1) General Plan

The equipment procurement plan for this cooperation project will be for the departments enlisted in Table 2-1 and will be developed to meet the department's function and activities.

### (2) Evaluation of the Requested Equipment

Based on the above-mentioned policy, the necessity and relevance of the requested equipment were studied in detail and the overall decision was made as follows. The evaluation result for each type of equipment is summarized in Appendix 2: Requested Equipment Evaluation Table.

#### 1) Classification

Table 2-2 Classification of the Requested Equipment

Classification	Content
Renewal	Renewal of the currently existing equipment
New	Newly requested equipment. The target facility has no experience in the relevant activity and has never used the equipment.
Addition	Equipment that is similar to and is intended to supplement the equipment currently in use.

#### 2) Selection Criteria

Table 2-3 Selection Criteria of the Equipment

Evaluation items	Consideration outline	
(1) Purpose of use	○	Equipment which matches the medical services currently provided by the target facility.
	×	Equipment which does not match the target facility's activities. Equipment intended for research purposes. Office equipment, home electrical appliances and other general purpose commodities.
(2) Necessity	○	Equipment which is considered to be essential for the target facility's activities.
	△	Equipment which is considered to be essential for the target facility's activities, but its quantity needs to be readjusted.
	×	The necessity for the equipment is low in view of the activities and the beneficial effect is expected to be limited. Equipment can be substituted by current equipment.
(3) Technical level	○	Equipment which is appropriate for the present technical level.
	×	Equipment which requires advanced operation skills but it is difficult to develop the skills in the future.
(4) Operation system	○	Staff members are assigned, or expected to be assigned, to operate the equipment.
	×	No staff member is expected to be assigned to operate the equipment.
(5) Maintenance system	○	Equipment whose maintenance is easy and can be managed by the members of the hospital staff; the manufacturer has a maintenance system; or the consumable/spare parts can be procured locally.
	×	Equipment whose maintenance is difficult; equipment which is likely to have maintenance-related problems after its introduction; or equipment whose consumable/spare parts cannot be easily procured locally.
(6) Operation and maintenance cost	○	Equipment which requires hardly any operation/ maintenance cost, or renewal equipment which does not burden the budget.
	×	New or additional equipment which requires high operation/ maintenance cost and may become a budgetary strain.
(7) Overall evaluation	○	The request is considered to be appropriate and the equipment will be included in the plan.
	×	Equipment which will be excluded from the plan.

### (3) Major Equipment and Consideration Outline

Evaluation results for some of the major equipment requested by the target departments are summarized below. The result of all the equipment is listed in Appendix 2: Requested Equipment Evaluation Table.

#### 1) Raqqa Pediatric Hospital

##### ■ Emergency unit

The emergency unit is located on the first basement level. Emergency patients who are transferred here are treated, admitted, allocated, or their referral is arranged if necessary. The room for Emergency care, Emergency labo, Resuscitation, Emergency operation, etc are the targets for the Project. Under this Project, it is planned to supply an **ambulance**, a **defibrillator** in the Emergency operation room, 3 **resuscitators (Ambu, infant)** in the Emergency care, Resuscitation and Emergency operation room, 2 **emergency trolleys** in the Emergency care and Emergency operation room, and a **wheel chair (infant)**, in order to strengthen the capacity to respond to emergency patients.

##### ■ Out-patient clinic

Out-patient clinic comprises Examination (3 rooms), Surgery (2 rooms), Chest disease (1 room), Neurology (1 room), and ER laboratory (1 room). Main responsibilities are initial treatment and examination, and patient allocation is also done here. Equipment procurement plan for each department is described below.

##### • Examination (3 rooms)

Initial consultation and patient allocation take place in the 3 out-patient consultation rooms on the ground floor. A **baby scale** and 2 **digital scales** will be made available to measure patient body weight. One **ECG (portable)** for 3 consultation rooms will be installed in order to allocate the patients based on the diagnosis of cardiac disorders. An **examination light** will be installed in each of the 3 consultation rooms. For the suction of sputum or nasal discharge, one **suction pump (portable)** will be installed per 3 consultation rooms. **Ultrasound (B/W, infant)** is useful to obtain a diagnosis prior to blood/biochemical examination, abdominal CT scan, and other detailed examinations. For out-patient medical consultation department, abdominal and surface skin probes will be supplied as attachments.

##### • Surgery ( 2 rooms)

On the third floor, there are two rooms for the surgery department where initial treatment of surgical patients and their allocation are done. One **examination light** will be installed in each of the two rooms.

##### • Chest disease

Chest disease department has one room on the second floor, where patients with suspected cardiac disorder receive health interview and are allocated with detailed examination in mind. Under the Project, procurement of 1 **examination light**, 2 **resuscitators (Ambu, infant)**, and 2 **ultrasonic nebulizers**, with considering sterilization shift, are planned.

- Neurology

Neurology has one room on the second floor, where the patients with suspected cranial nerve disorder are allocated for MRI examination, CT scan and other specialized examination based on health interview. An **examination light** will be supplied under this Project.

- ER laboratory

There is one ER laboratory on the ground floor, where specimens are examined to confirm the conditions of emergency patients and to determine the need for a more detailed examination. Procurement plan under this Project will include: 1 **bilirubin meter (blood)**, 1 **centrifuge**, 1 **hematocrit centrifuge**, and 1 **microscope**, which are necessary for the diagnosis of neonatal jaundice; 1 **hematology analyzer A**, required for the screening process before the blood tests; 1 **spectrophotometer**, which is required to determine whether it is necessary to conduct biochemical tests as detailed examination; and 1 **water bath**.

- Pediatric ward

Pediatric ward is on the fourth and fifth floor. There are 29 single-bedded rooms and 13 two-bedded rooms on the fourth floor and 32 single-bedded rooms and 10 two-bedded rooms on the fifth floor. While 120 beds have been requested, the total installation capacity only allows 107 beds, 55 beds on the fourth floor and 52 beds for the fifth floor. Therefore, the Grant Aid will be utilized to procure 107 units each of **beds** and **bedside tables**.

Each of the four consultation rooms, 2 each on the fourth and fifth floor, will be equipped with 1 **digital scale**, 1 **instrument cart**, and 1 **wheel chair (infant)**. One **resuscitator (Ambu, infant)** and 1 **suction pump (portable)** will be installed on each floor, and 1 **ECG (portable)** will be installed to cover the whole rooms. Medical care for pediatric respiratory disorder is much important due to the seasonal dusty sand storm. In Raqqa governorate, respiratory related diseases occupy a large portion of newborn and under-5 morbidity. For this Project, considering the activity of other health facilities in this area, 2 units of ultrasonic nebulizer in each room, total 8 units, shall be planned.

- Incubator room

There are 3 incubator rooms located on the third floor. While 50 incubators have been requested, each room only has a capacity to install 10 units, 30 units in total. The installation plan under the Project will include: 10 **incubators** for premature infant care in each room, a total of 30 units; and 1 **baby cot** and 1 **baby scale** in each room, a total of 3 units each. The requested infant warmers will be equipped with drawers for instruments, will allow attachment of oxygen or humidifier tanks, and may be used as **neonatal treatment tables**. It is planned to install a total of 3 units, one in each room. In Syria, there is a particularly high demand for **phototherapy unit**, which is used in the treatment of neonatal jaundice. According to statistics in Raqqa governorate, 80 to 90 percent of newborn patients being treated in incubator need phototherapy treatment. Thus, it shall be planned to install 8 units out of 10 incubators in each room, i.e. 24 units in total. Moreover, in order to equip each room with 1 **resuscitator (Ambu,**

**infant**) a total of 3 units will be procured.

■ Neonatal Intensive Care Unit (ICU) and Coronary Care Unit (CCU)

The construction plan for the new hospital includes an ICU (8 beds) and a CCU (8 beds). The Grant Aid will be utilized to install 1 **central monitor**, 1 **defibrillator**, 1 **ECG (portable)**, and 1 **resuscitator (Ambu, infant)** in each Unit. Each Unit will have 8 **ICU beds** and 8 **ventilators (infant)** installed. Regarding patient monitors, 7 **patient monitors (infant, standard)** and 1 **patient monitor (IBP)** which allows the measurement of invasive blood pressure will be installed in each Unit. Two **infusion pumps** (assuming 1/4 patient need) and 4 **syringe pumps (infant)** (assuming 1/2 patient need) will be installed in each Unit. Furthermore, it is planned to equip CCU with **Ultrasound (color doppler)**, which will be used to observe blood flow through the heart.

■ Operating room

There are three operating rooms (operating room #1 to #3) on the second floor. With this Project, each operating room will be equipped with 1 unit of **anesthesia apparatus with ventilator, electric surgical unit, instrument cart, operation table (electrical), patient monitor (infant, standard), pulse oxymeter (portable), stretcher**, and a **suction pump (2 bottle)**. Operating room #1 will have an **X-ray unit (C-arm)** which will be utilized in procedures such as surgical operations of the limbs. In terms of operation lamps, a standard ceiling lamp (1 arm) will be installed in the operating rooms 1 and 2, but the operating room 3 is planned to have a **ceiling lamp (2 arm)** adapted to a more complex operation. **Defibrillator** will be installed in operating rooms #1 and #2, in preparation for cases developing ventricular fibrillation. Taking sterilization process into consideration, 2 **surgical instrument sets** per operating room will be provided.

■ Sterilization department

Two rooms on the second floor are planned for the sterilization department of the whole hospital. Under the Project, considering the activity in Raqqa National hospital, quantity of sterilization, frequency of sterilization, each room will be equipped with 1 **high pressure steam sterilizer**, total 2 units, with a capacity of approximately 400 to 500 L.

■ Laboratories

● Biochemical laboratory

There will be 1 biochemical laboratory on the third floor. The Project will provide for the installation of 1 unit of **biochemistry analyzer, blood gas analyzer, centrifuge, and water bath**. The biochemistry analyzer is planned to have a specification which will allow the examination of 24 to 30 items for 400 specimens per hour. It will also have the capacity to test for glycosylated hemoglobin (HA1C), an important test item in the diagnosis of diabetes. Blood gas analyzers are needed to determine whether the blood acid-base balance (the balance of acid and alkali) resulting from respiratory failure, renal failure or other serious disorders is still maintained within the body. Therefore, it will be necessary to procure a blood gas analyzer which can measure  $\text{HCO}_3^-$  (bicarbonate ion) level.

- Hematology laboratory

There will be 1 hematology laboratory on the third floor. In addition to a **bilirubin meter (blood)**, which is necessary for the diagnosis of neonatal jaundice, 1 **centrifuge (hematocrit)**, 1 **hematology analyzer B**, 1 **microscope**, and 1 **water bath** will be procured under the Project. Regarding hematology analyzer B, a model which can count eosinophilic and basophilic leukocytes will be chosen, since these are essential for the diagnosis of bronchial asthma, atopic dermatitis, urticaria and other allergic disorders.

- Bacteriology laboratory

There will be 1 bacteriology laboratory on the first floor. The Project will provide for the installation of 1 **centrifuge**, 2 **incubators** (1 for pathological purpose and 1 for clinical purpose), 1 **microscope**, and 1 **urine analyzer**. Urine analyzer is included in the procurement plan since it is not only useful for the early detection of renal and hepatic disorders but also for the Syrian Government's effort to reduce childhood diabetes. The selected urine analyzer will have a specification that allows the determination of color, turbidity, pH, specific gravity, protein level, glucose level, urobilinogen, white blood cell count, ketone body level, occult blood and other test items.

- Pathology laboratory

There will be 1 pathology laboratory on the first floor. One **microscope** will be procured under the Project

- Sterilization room for the laboratory equipment

On the third floor, there will be 1 sterilization room for the laboratory equipment. According to the existing equipment in the Raqqa National Hospital and its activity, and considering work efficiency, two vertical-type **autoclaves** of approximately 20 L will be procured under the Project.

- Diagnostic imaging department

An **X-ray unit (general)** will be installed in a room on the first floor. An **X-ray unit (fluoroscope)** will be installed in a room on the second floor. A CT scanner (multislice helical) will be installed in a room on the third floor. Since it is necessary to diagnose congenital cardiac abnormality in infants, a model that can scan in more than 64 slices will be required. All of the films taken in the Raqqa pediatric hospital are developed in a dark room planned in the second floor. For the project, considering the number of image diagnosis cases in Raqqa governorate and the activity of other health facilities, 2 units of film developer with middle class specifications (100 films/hour) shall be planned.

2) Dier-ez-Zor Pediatric and Gynecology Hospital

- Pediatric ward

The pediatric ward occupies the first and the second floors of the pediatric department in the west wing. There will be 9 rooms (35 beds) on each floor, giving 18 rooms (70 beds) in total. The Project will provide for the procurement of 12 **beds**, 12 **bedside tables** and 12 **IV stands** that are lacking, as well as a

**cabinet, digital scale, examination light, medical refrigerator, and a sphygmomanometer (infant),** for each floor. The requested sphygmomanometer shall be for infants and a special cuff for infants will be attached. Each floor will have 3 **instrument carts**, 3 **suction pumps (portable)**, and 3 **wheel chairs (infant)**. In order to respond to the particularly high demand for ultrasonic nebulizers, used in the treatment of childhood respiratory diseases, 2 units will be installed in each room. The ultrasound (color doppler, infant) will be installed in the consultation room in the ward and probes for abdomen, skin (superficial organs) and heart (head of the newborn) will be attached.

■ Incubator room

The incubator room is located on the second floor of the pediatric department in the west wing. There are currently 10 incubators but the Project will provide for 10 additional **incubators** according to the extension plan by the hospital, making it a total of 20. In Syria, there is a high demand for the treatment of neonatal jaundice. Infant jaundice develops as a result of stress at delivery, prematurity, respiratory disorder, etc, as well as physiological jaundice, which is the most common case. Since according to statistics of this governorate, approximately 80 to 90% of the premature infants in this hospital exhibits symptoms of jaundice, 17 **phototherapy units** will be laid in 20 infant incubators. **Pulse oxymeters (bedside)** will also be procured for all the incubators. The procurement plan also includes 1 **baby scale**, 1 **bilirubin meter (blood)** for neonatal jaundice screening, and 2 **resuscitators (Ambu, infant)**, with consideration of sterilization shift, for the treatment of premature infants who are in conditions requiring resuscitation.

■ NICU/ ICU

NICU/ ICU are located on the second floor of the pediatric department in the west wing. NICU has one room with two beds, and cares for neonates of up to 28 days old. ICU is divided into 2 rooms; one two-bedded room for infants aged between 1 month and 12 months, and another two-bedded room for children aged between 1 to 15 years old. NICU and ICU together have 6 beds in total.

NICU will have 1 **neonatal treatment table** and 1 **baby cot**, each one of them equipped with a **patient monitor (infant, standard)**, **syringe pump (infant)**, and a **ventilator (infant)**. For the treatment of premature infants who are in conditions requiring resuscitation, 2 **resuscitators (Ambu, infant)**, with consideration of sterilization shift, will be arranged.

ICU (for infants aged between 1 month and 12 months) will have 2 **ICU beds** installed, each of them equipped with a **patient monitor (infant, standard)**, **syringe pump (infant)**, and a **ventilator (infant)**. In addition, 1 **baby scale** will be procured. As a life-saving device in emergency situation, 1 **defibrillator** will be procured. For the treatment of premature infants who are in conditions requiring resuscitation, 2 **resuscitators (Ambu, infant)**, with consideration of sterilization shift, will be arranged.

ICU (for children aged between 1 to 15 years old) will have 2 **ICU beds** installed, each of them equipped with a **patient monitor (infant, standard)**, **syringe pump (infant)**, **infusion pump (infant)**, and a **ventilator (infant)**. For the treatment of children who are in conditions requiring resuscitation, 2 **resuscitators (Ambu, infant)** will be arranged.

■ Operating rooms for pediatrics department

Two rooms on the second floor of the central wing, previously used as the operating rooms for the obstetrics and gynecology department, is planned to be reutilized as the operating rooms for the pediatrics department. The operating rooms for the obstetrics and gynecology department are planned to be transferred to the second floor of the obstetrics and gynecology ward of the east wing, which is currently being newly constructed. The equipment which was used in the old operating room will all be transferred to the new operating room.

Under this Project, both operating rooms for the pediatrics department will be equipped with 1 unit of each of the followings; **anesthesia apparatus, cabinet, ceiling lamp (2 arm), electric surgical unit, instrument cart, operation table (manual), patient monitor (infant, standard + CO2), pulse oxymeter (bedside), resuscitator (Ambu, infant), stretcher, suction pump (2 bottle), surgical instrument set, and syringe pump (infant)**. It will be necessary to have patient monitors with specifications that allow measurement of standard ECG, respiration, SPO2 (percutaneous oxygen saturation), non-invasive blood pressure, body temperature, as well as carbon dioxide concentration to monitor the patient under complete anesthesia. As a life-saving device in emergency situations, 1 **defibrillator** will be procured.

■ Obstetrics and gynecology ward

The obstetrics and gynecology ward is planned to be located on the first and the second floors of the east wing, which is currently under construction (completion will be in March 2011). The plan is to have 12 rooms (33 beds) on each floor, amounting to a total of 24 rooms (66 beds). Under this Project, 66 units each of **beds, bedside tables, and IV stands** will be procured. **Digital scales, medical refrigerators, sphygmomanometers (adult), and suction pumps (portable)** will be procured to install one each on both floors. **Instrument carts and wheel chairs (adult)** will also be procured to install 3 units each on both floors.

■ Operating rooms for the obstetrics and gynecology department

Three operating rooms for the obstetric and gynecology department will be established on the first floor of the east wing, which is currently under construction (completion will be in March 2011). Two rooms will be for caesarean section operation and hysterectomy, and one room is intended for simpler operations such as abortion. Ceiling lamps, operation tables and other basic equipment will be transferred from the old operating room in the central wing. The Grant Aid will be utilized to install 1 **cabinet, 1 instrument cart, 1 resuscitator (Ambu, infant)**, with consideration of sterilization shift, and 1 **suction pump (2 bottle)** in each operating room. Two **instrument sets for caesarean operation, 2 curettage sets and 1 instrument set for gynecology** will also be procured. In addition, 2 **instrument sets for hysterectomy** will be procured, although they were not included in the request list. For the entire operating rooms, 1 **defibrillator** and 1 **wheel chair (adult)** will be installed.

■ Obstetrics and gynecology ICU

Obstetrics and Gynecology ICU (4 beds) will be established on the second floor of the east wing, which



is currently under construction (completion will be in March 2011). The Grant Aid will be utilized to install 1 **ICU bed**, 1 **infusion pump (adult)**, 1 **patient monitor (adult, standard)**, and 1 **syringe pump (adult)** in each room. One **ventilator (adult)** per 2 beds will be installed. For the entire ICU, 1 **defibrillator**, 1 **ECG (portable)** and 1 **resuscitator (Ambu, adult)** will be installed. Patient monitors will be needed to measure ECG, respiration, SPO2 (percutaneous oxygen saturation), non-invasive blood pressure and body temperature; therefore, a standard specification will be required.

■ Delivery ward

The delivery ward will be established on the north side of the east wing, which is currently under construction (completion will be in March 2011). It will comprise a ward with 6 beds, 4 delivery rooms, 2 consultation rooms, ICU (2 beds), and 1 neonatal room. Until today, 3 delivery rooms in the central wing were used and approximately 16 deliveries were performed per day (2009 data). Only normal deliveries (including forceps deliveries) will be performed here and caesarean sections and abortions will be performed in the operating rooms.

• Ward

To match the 6 beds in the ward for pregnant and parturient women, 6 **labor beds** will be installed as well as 2 **cabinets** for storage of spare parts, instrument, and 2 **sphygmomanometers (adult)**, one unit to be used per 3 beds. Furthermore, 6 **cardiotocography devices** will be installed as they are frequently used in Syria. Four **fetus Dopplers** will be procured to substitute cardiotocography devices at times when all are in use.

• Delivery rooms

Each of the 4 delivery rooms will be equipped with 1 **delivery table**, 1 **examination light**, and 1 **instrument cart**. Taking sterilization processes into consideration, 8 **instrument sets for delivery** (2 sets in 1 room) will be procured. The examination light for the delivery room should allow horizontal illumination. A total of 2 **neonatal treatment tables** will be procured to be shared among 4 delivery rooms and to manage neonates who require care. In order to treat pregnant and parturient women and neonates who are in conditions requiring resuscitation, 2 **resuscitators (Ambu, infant)** and 1 **resuscitator (Ambu, adult)** will be procured. For the 4 delivery rooms, 2 **suction pumps (portable)**, 2 **vacuum extractors** and 2 **wheel chairs (adult)** will be procured.

• Consultation rooms

For the use in the 2 consultation rooms, 1 unit of each of the followings equipment will be procured; **cabinet**, **examination light**, **gynecology treatment table**, **vaginal speculum set**, **sphygmomanometer (adult)**, and **ultrasound (B/W, OB/GY)**. The ultrasound will have suitable specification for the use in the obstetrics and gynecology department and abdominal probes, surface skin probe (mammary glands, thyroid gland) and transvaginal probe will be attached. Furthermore, 1 **colposcope** will be installed to conduct uterine cancer screening.

- ICU
 

The ICUs (2 beds) will be equipped with 1 unit of each of the following equipment; **ICU bed, infusion pump (adult), patient monitor (adult, standard), and syringe pump (adult)**. Patient monitors will be needed to measure ECG, respiration, SPO2, non-invasive blood pressure and body temperature; therefore, a standard specification will be required. As an emergency life-saving device, 1 **defibrillator** will be installed to cover both beds.
  
- Neonatal room
 

The neonatal room is planned to have 16 beds, therefore 16 **baby cots** will be installed. In order to manage neonates requiring treatment, 1 **neonatal treatment table**, 2 **syringe pumps (infant)** and 2 **resuscitators (Ambu, infant) for resuscitation** will be installed.
  
- Diagnostic imaging department
 

The diagnostic imaging department is located on the first floor of the central wing. It is equipped with 1 simple X-ray unit (floor type) manufactured by Shimadzu Corporation, 2 film developers (1 is out of order), 1 mammography device manufactured by Siemens, and 1 ultrasound (B/W) manufactured by Toshiba. Under this Project, an **X-ray unit (fluoroscope)** is planned so that it will be possible to take X-rays of the stomach, intestine and other digestive organs. There is a plan to procure an **X-ray unit (portable)** so that simple X-ray diagnosis may be continued. In addition, procurement of a **film developer** is planned to replace the current film developer which is out of order.
  
- Building for emergency out-patient service
 

At present, emergency out-patient service is being provided in one area of the west wing. However, due to the increasing demand and aging of the building, reconstruction is planned with the budget of the Syrian government. Construction works will commence in March 2011 and is expected to be completed in approximately 6 months. Upon completion, the laboratories, which are currently located on the second floor of the central wing, will be transferred. The laboratories and the current emergency out-patient service will then function as an Emergency Out-patient Department. The new emergency out-patient building will comprise of an emergency pediatric department, emergency obstetrics and gynecology department, emergency examination department (1 room) and a central examination department (4 rooms).
  
- Emergency pediatric department
 

The Project will provide for 1 unit of each of the following equipment; **baby scale, cabinet, defibrillator, digital scale, ECG (portable), emergency trolley, examination light, film viewer (wall mount), sphygmomanometer (infant), suction pump (portable), X-ray unit (portable), and ultrasonic nebulizer.**
  
- Emergency obstetrics and gynecology department
 

The Project will provide for 1 unit of each of the following equipment; **cabinet, digital scale, ECG**

(portable), emergency trolley, examination light, sphygmomanometer (adult), and suction pump (portable). In addition, 2 wheel chairs (adult) will also be procured.

- Emergency examination department

For the emergency examination department (1 room), the Grant Aid will be utilized to procure 1 **bilirubin meter (skin)** for neonatal jaundice screening, 1 **blood gas analyzer** necessary for emergency patient allocation, and 1 **spectrophotometer** to determine the necessity of biochemical examination. Furthermore, 1 **centrifuge**, 1 **centrifuge (hematocrit)**, 1 **medical refrigerator**, and 1 **microscope** will also be procured. Blood gas analyzers are needed to determine whether the blood acid-base balance (the balance of acid and alkali) resulting from respiratory failure, renal failure or other serious disorders is still maintained within the body. Therefore, it will be necessary to procure a blood gas analyzer which can measure  $\text{HCO}_3^-$  (bicarbonate ion) level.

- Central examination department

For the central examination department (4 rooms), the Grant Aid will be utilized to procure 1 **bilirubin meter (blood)** which is necessary for the diagnosis of neonatal jaundice. In addition, 1 **biochemistry analyzer** will also be procured. The biochemistry analyzer is planned to have a specification which will allow the examination of 24 to 30 items for 400 specimens per hour. It will also have the capacity to test for glycosylated hemoglobin (HA1C), an important test item in the diagnosis of diabetes. Furthermore, 1 **centrifuge**, 1 **centrifuge (hematocrit)**, 1 **incubator**, 1 **spectrophotometer**, 1 **medical refrigerator**, and 2 **microscopes** will be procured. Regarding **hematology analyzer B**, a model which can count eosinophilic and basophilic leukocytes will be chosen, since these are essential for the diagnosis of bronchial asthma, atopic dermatitis, urticaria and other allergic disorders.

The hormone analyzer requested is utilized for thyroid hormone secretion examination for thyroid stimulating hormone (TSH), free thyroxine (FT4) and free triiodothyronine (FT3); prolactin examination; testosterone examination; estrogen (follicle hormone) examination; progesterone (corpus luteum hormone) examination; follicle stimulating hormone examination; and luteinizing hormone (LH) examination. The purpose of thyroid hormone secretion examination is to diagnose disorders such as hyperthyroidism, represented by Basedow's disease, and hypothyroidism. Prolactin examination is performed when the patient develops symptoms such as amenorrhea, infertility, impairment of sexual function in male, and the purpose is to diagnose pituitary tumor, hypothalamic disorder, hyperthyroidism or hypothyroidism. The purpose of testosterone examination is to detect congenital or acquired abnormality of gonadal (testicular) function in male or to detect adrenal dysfunction in female. With estrogen (follicle hormone) examination and progesterone (corpus luteum hormone) examination, the functions of the ovaries, follicles, and the placenta can be examined and the purpose is to diagnose disorders such as congenital adrenal enzymatic defects, ovarian dysfunction, congenital adrenal hyperplasia, and corpus luteum insufficiency. For FSH examination or LH examination is performed when the patient develops symptoms of menstruation disorders or infertility. FSH and LH, which are gonadotropins in blood serum, are measured to determine whether the abnormal secretion of sexual

hormones is induced by the hypothalamus, pituitary, or the ovary (testes) and to diagnose disorders such as ovarian amenorrhea, testicular feminization syndrome, and corpus luteum insufficiency.

Based on the above evaluation, it can be said that the major purpose of the requested hormone analyzers is to determine the reasons for the difficulties in ovulating or becoming pregnant. It cannot be denied that the result of the analysis may introduce to the patients, options such as artificial insemination, surrogate delivery, or life manipulation, whose ethical relevance are not sufficiently acknowledged in the general or international community. In view of the project goal, which is to “strengthen the functions of pediatric, neonatal, and perinatal care services”, it is difficult to claim that hormone analyzer is essential to achieve the project goal. Therefore, hormone analyzer will be excluded from the Project.

■ Sterilization department

Under the Project, 2 **high pressure steam sterilizers** replacing the existing 2 units will be procured for the sterilization room adjacent to the operating room for the pediatrics department. The 2 sterilizers currently in use will be transferred to the operating room for the obstetrics and gynecology department in the east wing, after its completion. The new sterilizers shall have the capacity equivalent to that of the current type.

3) Hasaka Internal, Gynecology and Pediatric Hospital

■ Incubator room

The incubator room will accommodate premature infants and will have 15 incubators, 3 of which shall be for patients with infectious diseases. There are currently 13 **infant incubators** (3 of which are for infectious disease patients). All of them are manufactured by Drager, 4 units in year 2000, 2 units in 1995. These 6 units will be renewed under the Project and further 2 units will be added to have 15 incubators in total.

In Syria, there is a particularly high demand for **phototherapy unit**, which is used in the treatment of neonatal jaundice. Infant jaundice develops as a result of stress at delivery, prematurity, respiratory disorder, etc, as well as physiological jaundice, which is the most common case. Since according to statistics of this governorate, approximately two thirds of the premature newborn patients need phototherapy treatment, 10 out of 15 infant incubators shall be equipped with phototherapy unit, for the Project. As there are 6 existing phototherapy units (RIMA, Brazil made, procured 2009, etc), 4 **phototherapy units** shall be procured under the requested assistance. **Pulse oxymeter (portable)** is planned to be installed in the 3 incubators for infectious disease patients and 3 incubators for general patients. All of the incubators shall be equipped with a **syringe pump**; therefore, a total of 15 syringe pumps will be installed. Furthermore, 1 **baby scale** and 1 **bilirubin meter (skin)** for neonatal jaundice screening will also be procured.

■ Pediatric ICU

Pediatric ICU will be located next to the incubator room but it is currently used as a storage room. In order to respond to the need for intensive care for pediatric patients, this project will develop a pediatric

ICU system with 4 beds. Under the Project, 2 **ICU beds** for pediatric patients and 2 **infant incubators** for premature infant patients will be procured. Each of the four beds will be equipped with 1 **infusion pump**, 1 **patient monitor (infant, standard)**, and 1 **syringe pump**. Since the hospital currently possesses 1 **ventilator (infant)**, the procurement plan will be for 3 units so that each of the 4 beds will be installed with a ventilator. Moreover, to treat the patients in need of care, 2 **neonatal treatment tables** will be procured. In addition to the above, the following equipment will be procured; 1 **bilirubin meter (skin)** for neonatal jaundice screening, 1 **defibrillator** and 1 **ECG (portable)** for emergency life-saving procedures, 2 **resuscitators (Ambu, infant)**, considering sterilization shift, for resuscitation procedures, 1 **suction pump (portable)**, 1 **wheel chair (infant)**, 1 **cabinet**, 1 **film viewer (mobile)** and 1 **instrument cart**.

■ **Thalassemia room**

Thalassemia is one group of congenital hemolytic anemia (microcytic) characterized by defect in hemoglobin synthesis. It is particularly common in people with Mediterranean, African or Southeast Asian origin. Signs and symptoms include anemia, hemolysis, splenomegaly, and bone-marrow hyperplasia. If the patient has received several blood transfusions, thalassemia will be induced by iron overload. Diagnosis will be based on the quantitative analysis of hemoglobin. Treatment methods for severe types include blood transfusion, splenectomy, and transplantation of stem-cells.

Current Thalassemia room has 8 beds and 13 IV stands. The Project will cover the procurement of 1 **digital scale** and 3 **pulse oxymeters (portable)**.

■ **Pediatric ward**

Current pediatric ward has 6 rooms (36 beds). The beds can be still be used continuously. Procurement plan of this Project includes; 1 **cabinet**, 2 **instrument carts**, 2 **suction pumps (portable)**, 2 **pulse oxymeters (portable)**, 6 **sphygmomanometers**, 3 **ultrasonic nebulizers** and 3 **wheel chairs (infant)**.

■ **Isolation ward**

The isolation ward for various infectious disease patients currently operates with 6 beds. Most of the equipment and beds are old. Under the Project, 6 units of beds, bedside tables and ICU beds will be procured.

Furthermore, 1 unit of each of the following equipment will also be procured; **cabinet**, **instrument cart**, **pulse oxymeter (portable)**, **sphygmomanometer**, **suction pump (portable)**, and **ultrasonic nebulizer**.

■ **Nurse station**

At present, there is no specific room that functions as a nurse station. The future plan is to use the room with laundry machines, which is adjacent to the pediatric ward, as a nurse station to monitor both the pediatric ward and the isolation ward. Under the Project, 2 **defibrillators**, 2 **medical refrigerators** and 2 **resuscitators (Ambu, infant)** will be procured for both Pediatric and Isolation ward.

■ **Laboratories**

The laboratory is currently under renovation. Upon completion, examination services will operate under a 2-laboratory system; a hematology laboratory and a urinalysis laboratory. A **biochemistry analyzer** will be installed in the hematology laboratory. The biochemistry analyzer is planned to have a specification which will allow the examination of 24 to 30 items for 400 specimens per hour. It will also have the capacity to test for glycosylated hemoglobin (HA1C), an important test item in the diagnosis of diabetes. A **blood gas analyzer** will also be procured. Blood gas analyzers are needed to determine whether the blood acid-base balance (the balance of acid and alkali) resulting from respiratory failure, renal failure or other serious disorders is still maintained within the body. Therefore, it will be necessary to procure a blood gas analyzer which can measure  $\text{HCO}_3^-$  (bicarbonate ion) level. As for hematology analyzer A, a standard specification which can classify the three types of white blood cells will be selected. In addition to the above, 1 **bilirubin meter (blood)** for the diagnosis of neonatal jaundice, 1 **centrifuge (blood)**, 1 **centrifuge (hematocrit)**, 1 **incubator**, 1 **microscope** and 1 **spectrophotometer** will be procured. For urinalysis laboratory, 1 **centrifuge (blood)** and 1 **microscope** will be procured.

■ Emergency out-patient unit

The emergency out-patient unit is currently under renovation. Upon completion, the emergency out-patient services will operate under a 2-room system; an emergency room and an out-patient consultation room. One **mobile incubator** will be procured to transfer a newly born infant who is in need of emergency care immediately after birth. In order to remove the aging X-ray unit (general) of the diagnostic imaging department and to install a fluoroscope instead, 1 **X-ray unit (portable)** will be installed in the emergency out-patient unit to take simple X-rays. Regarding **ultrasonic nebulizer** which is essential for pediatric out-patient service, 2 units will be procured for installation. One **defibrillator** for emergency life-saving, 1 **ECG (portable)** to examine cardiac functioning, 1 **emergency trolley**, and 1 **examination light** will be procured. For resuscitation procedures, 2 **resuscitators (Ambu, infant)** will be procured. In addition to the above, 1 unit of each of the following equipment will be procured; **baby scale**, **bilirubin meter (skin)**, **cabinet**, **digital scale**, **pulse oxymeter (portable)**, **sphygmomanometer**, **steam sterilizer**, **suction pump (portable)**, and **wheel chair (infant)**.

■ Diagnostic imaging department

In the diagnostic imaging department, there are currently 1 mobile X-ray unit, 1 general X-ray unit (ceiling mount), and 1 ultrasound, which have been rented from Hasaka National Hospital. The adjacent dark room is equipped with a film developer. All of the equipment is severely aging. It is planned to utilize the room opposite the diagnostic imaging department as an ultrasound room. Under the Project, it is planned to procure 1 **X-ray unit (fluoroscope)** to replace the old general X-ray unit, so that it will be possible to take X-rays of the digestive organs. Traditional general X-ray examination will be performed using the **X-ray unit (portable)** in the emergency out-patient department. The **film developer** in the dark room will be renewed.

In the future, 1 **ultrasound (color doppler, infant)** will be installed in the ultrasound room opposite the diagnostic imaging department. The ultrasound (B/W, infant) which was also requested for the ultrasound room was excluded from the basic plan because its functions overlapped with the functions of ultrasound

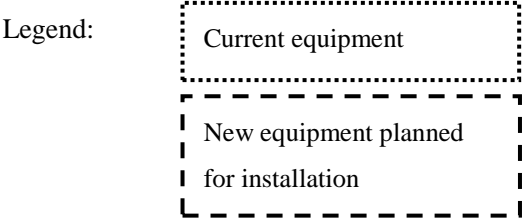
(color doppler, infant).

(4) Equipment plan

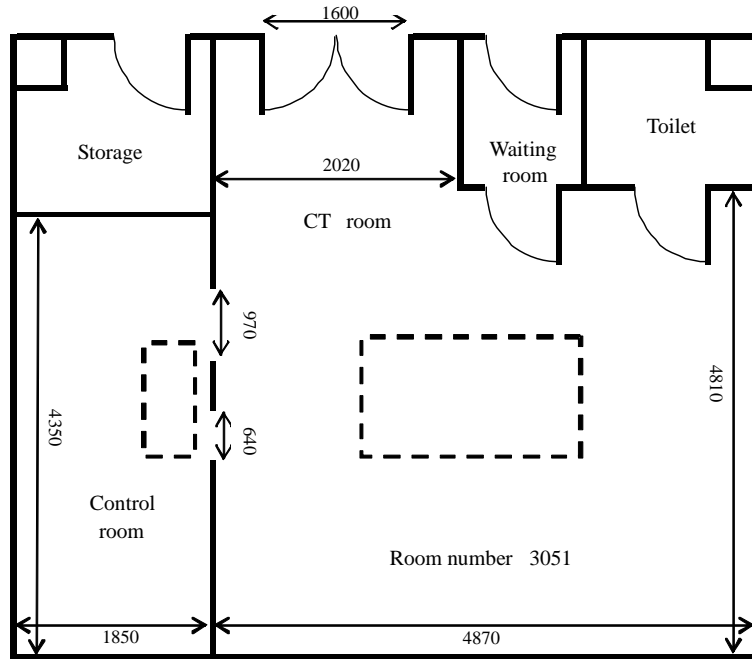
Please refer to the list of equipment which will be provided under this cooperation project (Appendix 7).

2-2-3 Outline Design Drawings

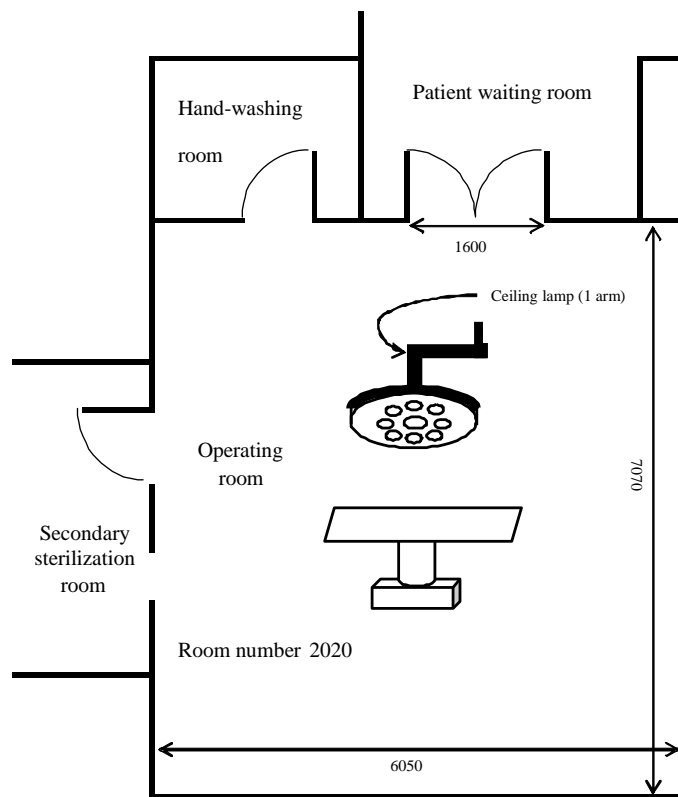
The following diagrams show the installation plan of the equipment which requires fixation.



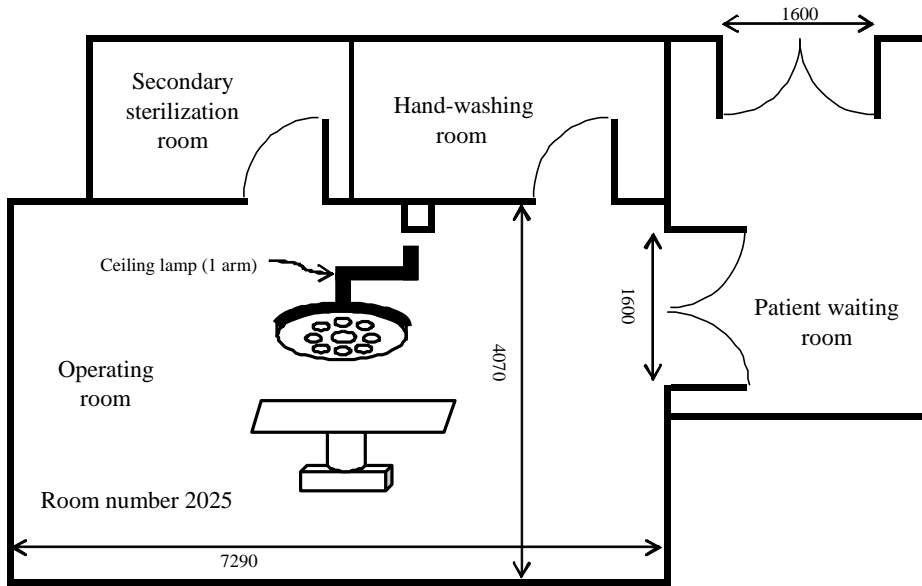




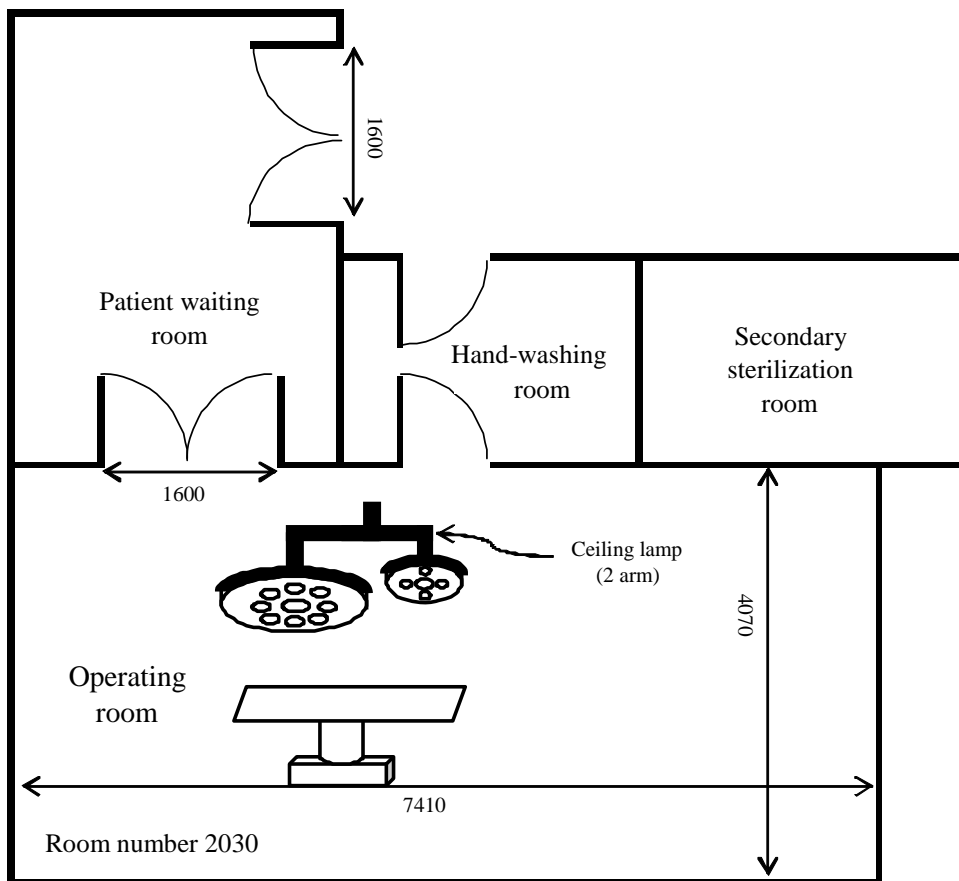
Plan number: R-35  
 Equipment name: CT scanner (multislice, helical)



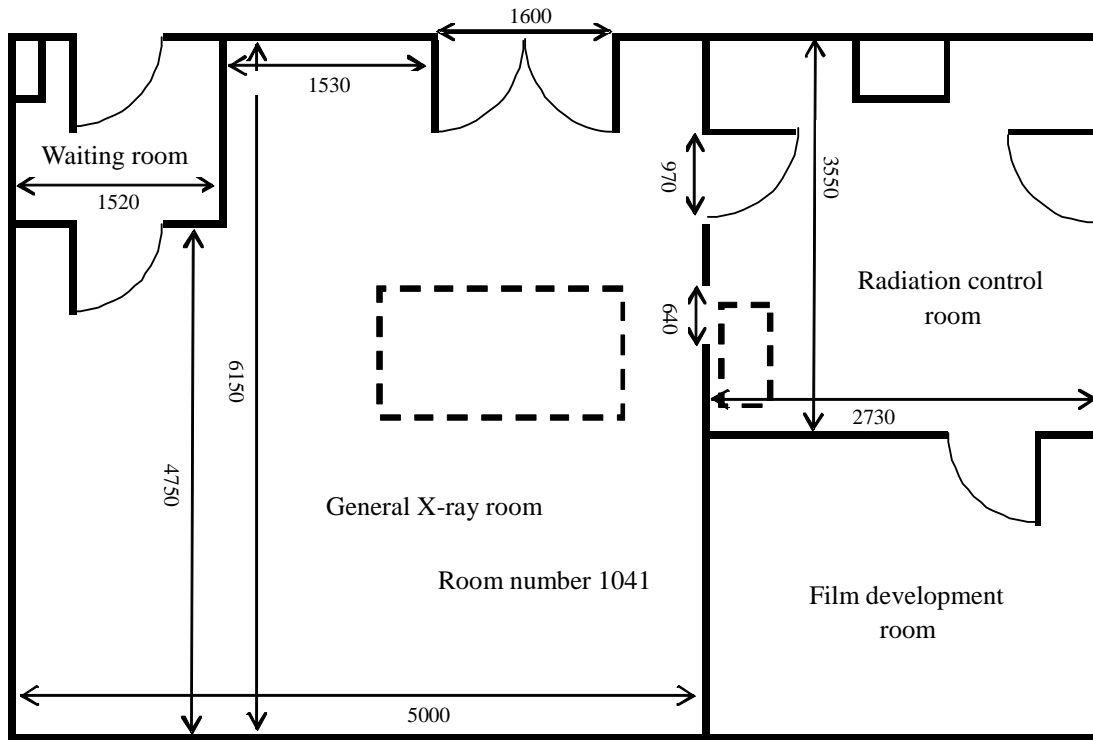
Plan number: R-12  
 Equipment name: Ceiling lamp (1 arm)



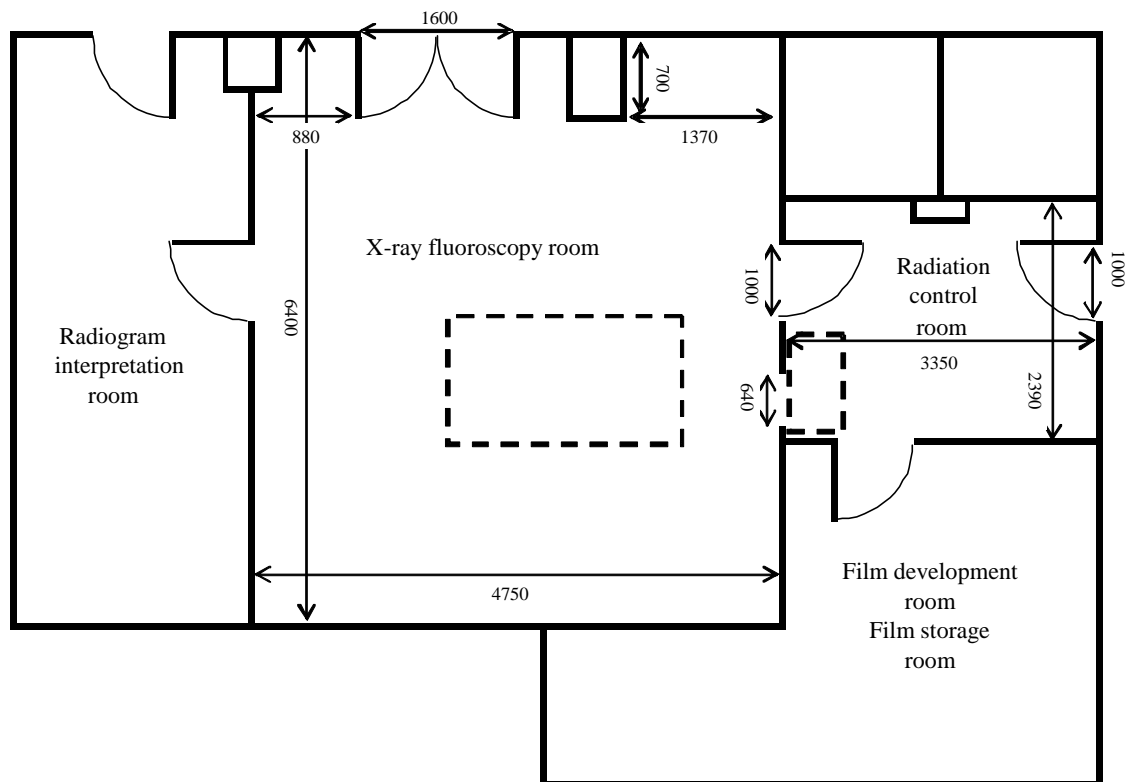
Plan number: R-12  
 Equipment name: Ceiling lamp (1 arm)



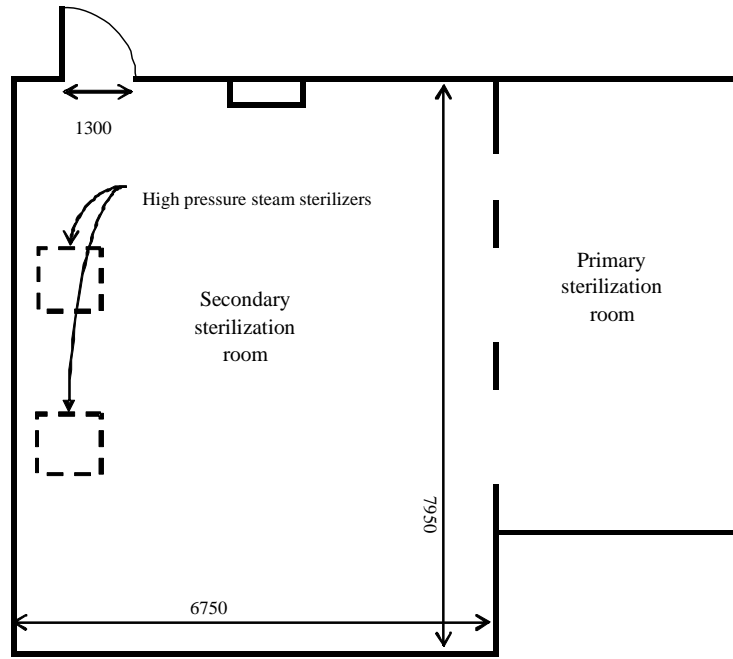
Plan number: R-13  
 Equipment name: Ceiling lamp (2 arm)



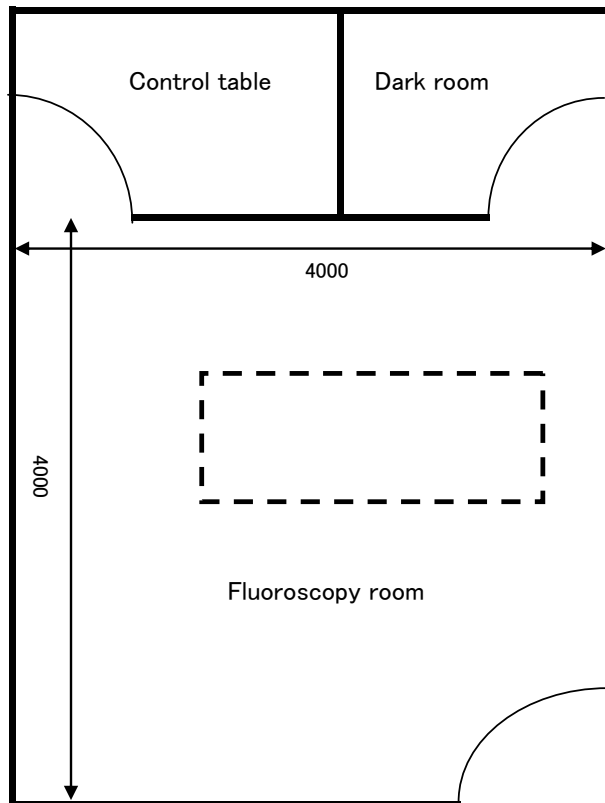
Plan number: R-23  
 Equipment name: X-ray unit (general)



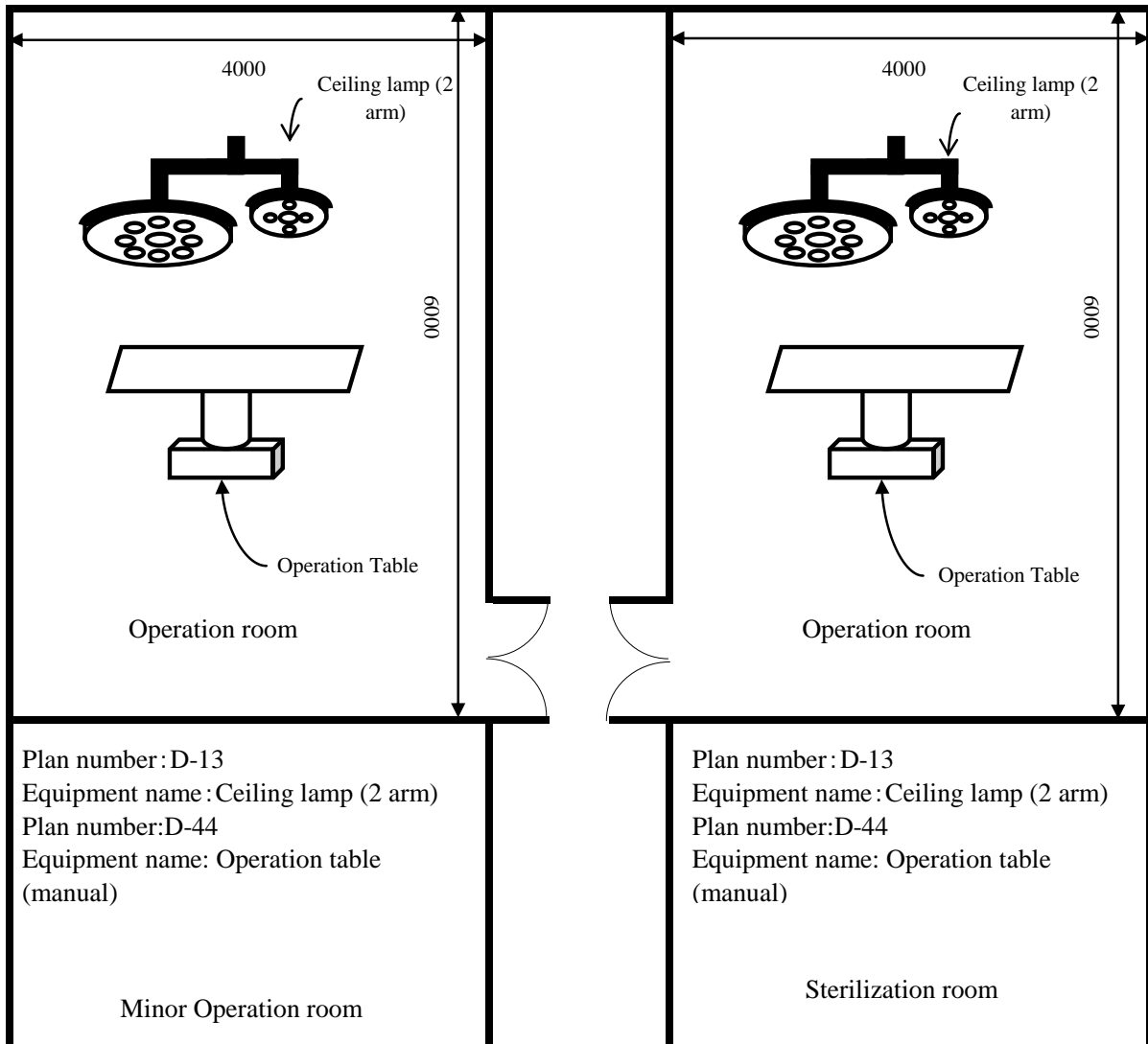
Plan number: R-55  
 Equipment name: X-ray unit (fluoroscope)

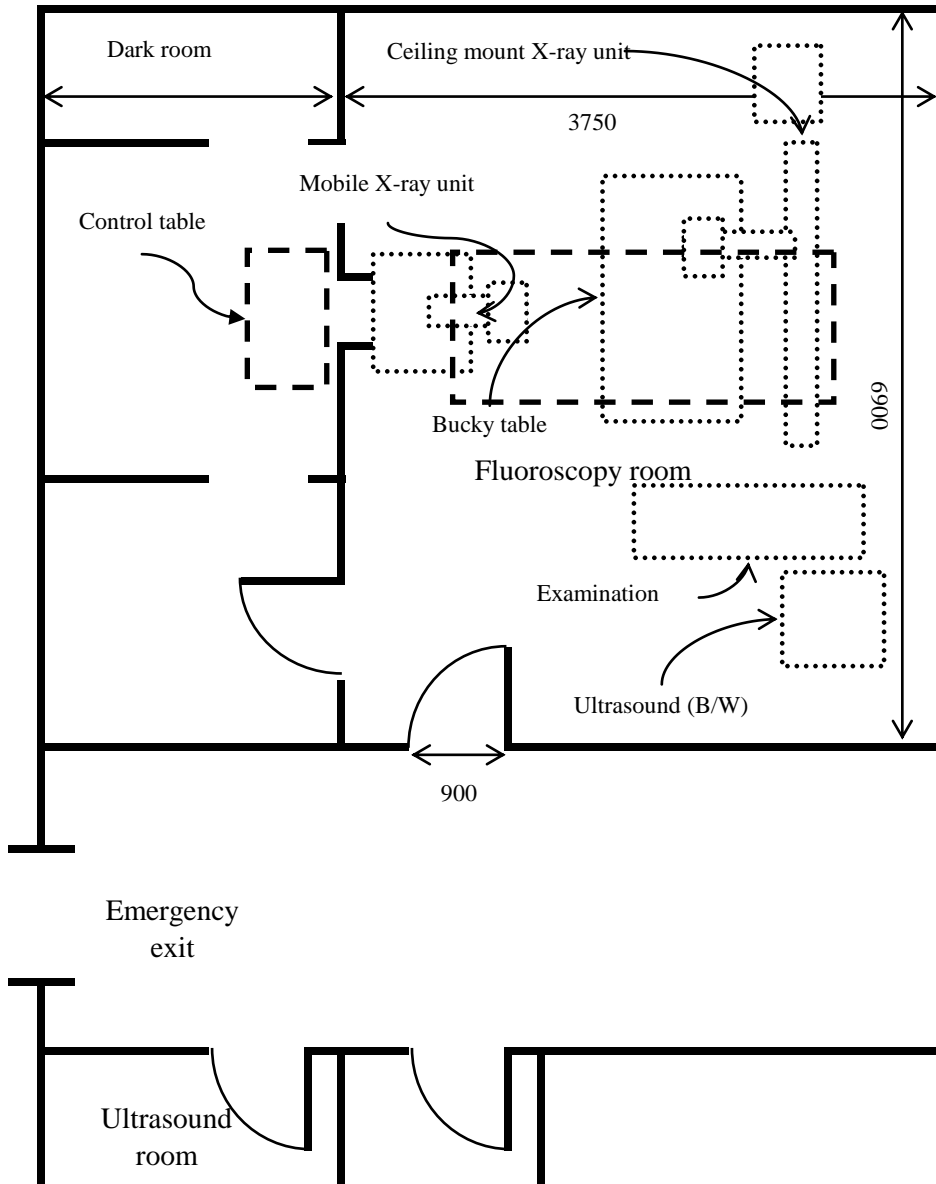


Plan number: R-27  
 Equipment name: High pressure steam sterilizer



Plan number: D-70  
 Equipment name: X-ray unit (fluoroscope)





Plan number: H-43  
 Equipment name: X-ray unit (fluoroscope)

## 2-2-4 Implementation Plan

### 2-2-4-1 Implementation Policy

This cooperation project is implemented according to the framework of grant-aid assistance of the Japanese government. Therefore, it starts officially after approval by both the government of Japan and the government of Syria and the conclusion of Exchange of Notes (E/N) and Grant Agreement (G/A). Thereafter, the Consultant (a Japanese legal person) conducts detailed design work (preparation of detailed design documents) based on the contract with the Syrian side. In addition, the Equipment Supplier, which is the Japanese legal persons assigned by bidding, conducts delivery and installation of equipment.

The examination concerning the work plan is conducted between the Consultant and the responsible persons from the Syrian implementing organizations within the period of detailed design. In addition, consultation is held to ensure the smooth execution of the work in the responsibility of Japan and that of Syria based on the implementation schedule in this Report.

#### (1) Implementing System

The governmental organization in charge of this Project is the Syrian Ministry of Health (MOH), and the implementing organizations are the Health Directorate of each target governorate.

#### (2) Consultant

After the conclusion of E/N and G/A between the government of Japan and the government of Syria, the Japanese Consultant enters into a consultant contract with the Syrian implementing organizations according to the procedures of Japan's grant-aid assistance. Based on this contract, the Consultant performs the following work:

- Detailed design : Preparation of detailed design documents (specifications and other technical information)
- Bidding : Selection of Equipment Supplier and work assistance related to procurement contract
- Procurement supervision: Supervision of equipment procurement, installation, and operation and maintenance training

Detailed design means the determination of details of the procurement plan based on this Basic Design Study and the preparation of bidding documents comprising specifications, instruction to bidder, and draft dealer contract, which is needed for the bidding to select the Japanese legal person conducting procurement of equipment.

In conducting bidding, the Consultant performs bidding work including invitation to bid, reception of bidding applications, qualification review, distribution of bidding documents, reception of bids, and evaluation of bidding result. It also provides advice concerning the equipment procurement contract between Syrian implementing organizations and the Supplier and provides work assistance such as reporting to the government of Japan.

Procurement supervision is to confirm whether or not the Supplier's work is performed as specified in the

contract and to confirm the appropriate execution of the contract. In addition, to promote the implementation of the assistance project, it conducts the following work from an impartial standpoint.

1) Guidance, advice, and coordination concerning procurement of equipment

The Consultant examines equipment procurement schedule, plan, etc. and provides guidance, advice, and coordination for the Supplier.

2) Inspection and approval of installation drawings, etc.

The Consultant inspects the installation drawings, documents, etc. submitted by the Supplier, gives guidance, and grants approval.

3) Confirmation and approval of equipment

The Consultant confirms that the equipment that the Supplier is going to procure is consistent with contract documents and help the Syrian side grant approval for the adoption of the equipment.

4) Inspection

The Consultant attends inspection in the manufacturing process of equipment as needed to ensure required product quality and performance.

5) Reporting on the progress of installation work

The Consultant holds grasp of the work processes and the situation of the work sites and reports the progress of installation work to the both countries.

6) Equipment operation training

Some of the equipment covered by the assistance requires knowledge of maintenance. For this reason, the Supplier needs to provide on-site training during the period of installation, adjustment, and test runs so that the responsible persons on the Syrian side can learn the techniques for operation, recovery from failure, and repair. The Consultant provides guidance and advice concerning this training plan.

(3) Equipment Supplier

The Equipment Supplier selected by bidding enters into a contract with the Syrian side. Based on this contract, the Supplier conducts procurement, delivery, and installation of vehicles, materials, and equipment, and also gives training to the Syrian side concerning the operation and maintenance of the equipment provided. The Supplier also constructs a system that enables the Syrian side to purchase spare parts and expendable supplies for the equipment and receive training ongoingly after the delivery of equipment.

2-2-4-2 Implementation Conditions

(1) Procurement of Equipment

1) Process Management of Equipment Installation

The installation work, operation training, etc. for the procured equipment are conducted while the target medical institutions are in operation. Therefore, work must be conducted with close communication between the Syrian side and the Consultant and detailed meticulous process management must be put in place so that the healthcare services at the target medical institutions should not be impeded.



## 2) Necessity of Engineers

To ensure the long-term effective operation of the procured equipment, it is necessary to dispatch engineers who teach medical workers the proper operation and maintenance methods after installation and test runs. In this cooperation project, engineers are sent from the manufacturers of equipment or their local agencies to teach the installation and adjustment of equipment, the method of operation, and the method of maintenance.

### 2-2-4-3 Scope of Works

#### (1) Japanese Side

- Procurement of the equipment covered by the Grant Aid cooperation and the air and marine transportation to the landing site
- Inland transportation from the landing site to the delivery sites
- Installation, test runs, and adjustment of the equipment covered by the cooperation
- Explanation and training in the operation and maintenance of the equipment covered by the cooperation

#### (2) Syrian Side

- Reinstalling the equipment for a new building by moving such equipment from the old building to the new building promptly after the completion of the new building construction work
- Moving and dismantling existing equipment for the installation of procured equipment and preparing the site for installation of procured equipment
- Providing the route for moving equipment into the site
- Providing place for temporary storage of equipment within the site
- Providing water supply (valve-stopped), drainage (cap-stopped), electricity (outlets and breakers), medical gas supply, building foundation reinforcement, etc. that are needed for the installation of equipment.

### 2-2-4-4 Consultant Supervision

#### (1) Procurement Supervision Policy

Based on the method of grant-aid assistance conducted by the government of Japan, the Consultant organizes a persistent project execution team for implementation design work and ensures smooth execution of work respecting the principles of the basic design. The policy concerning procurement supervision is as follows:

- The Consultant keeps close communication with the responsible persons from the relevant organizations of the both countries and aims at the punctual completion of equipment procurement.
- The Consultant provides timely and appropriate guidance and advice to the Equipment Supplier and related persons from an impartial standpoint.
- The Consultant provides appropriate guidance and advice concerning management of equipment after delivery.
- The Consultant, after confirming the completion of the delivery of equipment and the execution of the

contract conditions, witnesses the delivery of equipment and completes the work by obtaining the acknowledgement of receipt from the Syrian side.

## (2) Procurement Supervision Plan

In performing the above work, the Consultant conducts supervision using procurement supervision engineers and inspection engineers. In addition, engineers are sent to the sites as necessary according to the progress of work and perform necessary inspection, guidance, and coordination. The Consultant also assigns responsible engineers in Japan to establish a system for communicating with the sites and providing backup. In addition, the Consultant reports various important matters concerning the progress of the assistance project, payment procedures, etc. to relevant persons in the government of Japan.

### 2-2-4-5 Quality Control Plan

The vehicles, equipment, and materials planned for procurement in this Project shall be ready-made products selected from the items with past records of delivery to medical institutions in various countries. With respect to the manufacturing standards for individual items, products complying with JIS, BS, UL, DIN, or other standards shall be selected. In the case of equipment requiring expendable supplies, reagents, etc., general-purpose items with good availability in Syria shall be selected.

### 2-2-4-6 Procurement Plan

#### (1) Equipment Procurement Plan

The equipment to be procured shall be products of Japan or Syria as a rule. However, in the case where third-country products are considered desirable in terms of superiority in pricing, superiority in maintenance, the common use in Syria, and other conditions, procurement from a third country may be considered following the consent of the both countries and the review of the conditions outlined below. The procurement plan for other equipment shall be developed considering the certainty of delivery time and the superiority in procurement prices.

- There is a branch office, agency, etc. in Syria and the product has superiority in maintenance.
- The product has a low incidence rate of failures and other events and requires low maintenance cost.
- A product of Japan or Syria is nonexistent or does not meet specifications.
- The product is easy to service and inspect, and is the product of a manufacturer with a well-developed maintenance system.
- The equipment is used commonly in Syria.
- The equipment can be procured and delivered within the time limit set by E/N and G/A.

The equipment with the probability of procurement from a third country in this cooperation project is as listed below.

Table 2-4 Equipment with the Probability of Procurement from Third Country

Plan No.	Name of Equipment	Japan	Local	Third country
2	Anesthesia apparatus with ventilator	○		○
5	Baby scale	○		○
6	Bed	○		○
10	Biochemistry analyzer	○		○
11	Blood gas analyzer			○
14	Ceiling lamp (1 arm)	○		○
15	Ceiling lamp (2 arm)	○		○
16	Central monitor	○		○
17	Centrifuge	○		○
18	Centrifuge (blood)	○		○
20	Centrifuge (urine)	○		○
25	Digital scale			○
29	Examination light	○		○
35	Hematology analyzer A	○		○
36	Hematology analyzer B	○		○
38	ICU bed	○		○
40	Infant incubator	○		○
41	Infusion pump (infant)	○		○
42	Infusion pump (adult)	○		○
44	Instrument set for caesarean operation	○		○
45	Instrument set for curettage	○		○
46	Instrument set for delivery	○		○
47	Instrument set for gynecology	○		○
50	Labor bed	○		○
51	Medical refrigerator	○		○
52	Microscope	○		○
53	Mobile incubator	○		○
54	Neonatal treatment table	○		○
57	Patient monitor (adult, standard)	○		○
58	Patient monitor (IBP)	○		○
59	Patient monitor (infant, standard + CO2)	○		○
60	Patient monitor (infant, standard)	○		○
62	Pulse oxymeter (bedside)	○		○
63	Pulse oxymeter (portable)	○		○
65	Resuscitator (Ambu, infant)	○		○
66	Spectrophotometer	○		○
69	Steam sterilizer	○		○
73	Syringe pump (adult)	○		○
74	Syringe pump (infant)	○		○
78	Ultrasound (color doppler, infant)	○		○
79	Urine analyzer	○		○
82	Ventilator (adult)	○		○
83	Ventilator (infant)	○		○
84	Water bath	○		○
85	Wheel chair (adult)	○		○

## (2) Transport Plan

The items imported to Syria are landed at Latakia Port and then transported to the three target governorates through the following routes. Transport in itself takes about one day. The road traffic conditions in Syria are generally good. Because roads are paved and have sufficient width, they present no problem in the transportation of precision medical equipment.

- Raqqa Governorate: Latakia Port – Aleppo – Raqqa (approx. 380 km)
- Dier-ez-Zor Governorate: Latakia Port – Aleppo – Raqqa – Dier-ez-Zor (Approx. 500 km)
- Hasaka Governorate: Latakia Port – Aleppo – Raqqa – Hasaka (Approx. 700 km)

### 2-2-4-7 Operational Guidance Plan

To ensure appropriate use and maintenance of the medical equipment procured, the supplier shall conduct the following training at the time of delivery and provide technical information needed for servicing and management, operation and servicing manuals, and if possible a contact list of agencies or manufacturers.

- Method of Operation (equipment summary, procedures, checkpoints, etc.)
- Method of Regular Servicing and Maintenance (cleaning and adjustment, repair of minor troubles, etc.)

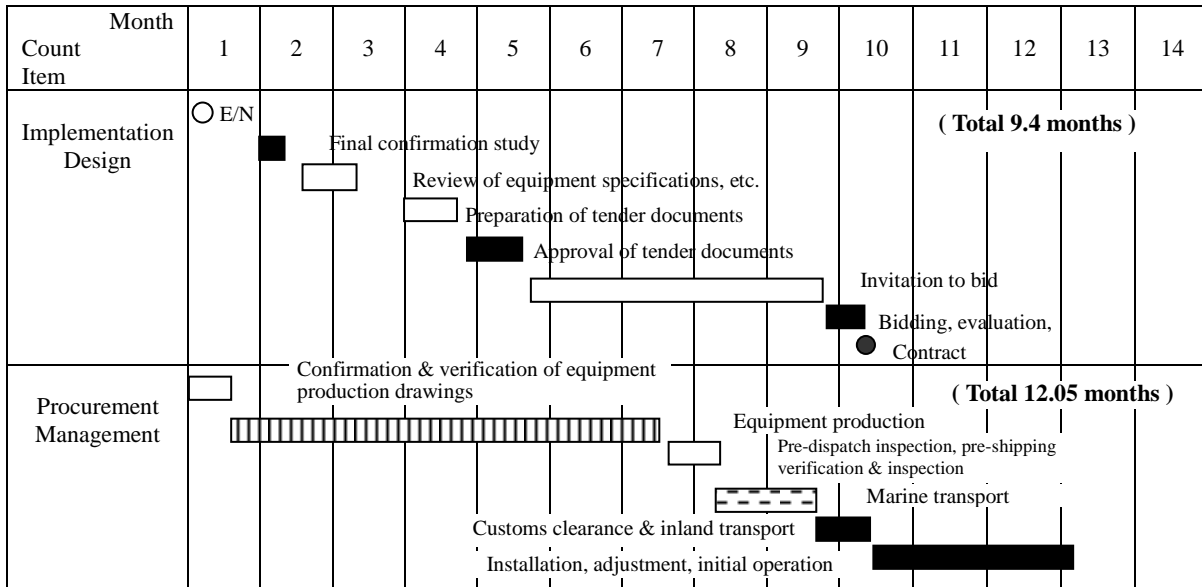
### 2-2-4-8 Soft Component (Technical Assistance) Plan

Soft component (Technical assistance) is not conducted.

2-2-4-9 Implementation Schedule

If and when the Exchange of Notes concerning the implementation of this assistance project is concluded between Japan and Syria, procurement of equipment will be conducted following the steps illustrated below.

Table 2-5 Work Implementation Schedule



□ Work in Japan    ■ Work in Syria

## 2-3 Obligations of the Recipient Country

The matters that should be completed by the responsible government organizations and implementing organizations on the Syrian side in this Project are as listed below.

### (1) Related to Transport and Installation of Equipment

- Moving and dismantling existing equipment for the installation of procured equipment and preparing the site for installation of procured equipment
- Providing the route for moving equipment into the site
- Providing place for temporary storage of equipment within the site
- Providing water supply (valve-stopped), drainage (cap-stopped), electricity (outlets and breakers), medical gas supply, building foundation reinforcement (water plumbing reinforcement, radiation protection, etc.), etc. that are needed for the installation of equipment.

### (2) Related to Facilities and Operation

- Appropriate allocation of equipment users at target facilities
- Securing of budget for the maintenance of equipment procured

### (3) Other

- Payment of Authorization to Pay fees etc. according to Banking Arrangements
- Prompt landing and completion of customs clearance procedures for the products purchased based on the grant
- Regarding the products and services procured based on an verified contract, exemption from customs duties, value-added tax, and other surcharges that are imposed on a Japanese citizen
- Regarding the services of a Japanese citizen provided based on an verified contract, provision of convenience for the entry to and stay in the country needed for the execution of work
- Permissions, licenses, and other necessary actions needed for the implementation of this Project
- Payment of all other costs that are not covered by the grant-aid assistance but are needed for the execution of this Project.
- Construction work of the Raqqa Pediatric Hospital and Delivery Ward of Dier-ez-Zor Pediatric and Gynecology Hospital should be completed as scheduled.

## 2-4 Project Operation Plan

### 2-4-1 Project Management Organization

The governmental organization in charge of this Project is the Ministry of Health (MOH), and the three target hospitals in the north-eastern area are under the control of the MOH. The contact in the MOH for this Project is the Planning and International Aid Directorate, which has a total of 44 staff members and consists of 5 departments; the International Aid Department, the Budget Department, the Economic Research Department, the Policy Department and the Statistics Department. Each governorate has the Health Directorate, and it serves as a branch office of the MOH.

The implementing agencies of this Project are the Health Directorates, which are under the supervision of the MOH. The Health Directorate of each governorate plays a role in monitoring and guiding the healthcare facilities in the governorate. The department in charge of the implementation of this Project is the Healthcare Service Directorate, whose roles include stock management of drugs, medicines and medical equipments, guidance on medical treatment according to the guidelines issued by the MOH and supervision of qualified healthcare workers in each healthcare facility.

The three target hospitals will be managed and operated by the Health Directorate of each governorate. Raqqa Pediatric Hospital is scheduled to open in July 2012, with doctors and other medical workers called up from national hospitals, Abyad Hospital, Thawra Hospital, polyclinics, healthcare centers etc. in the governorate and graduates from nursing schools in the governorate hired as nurses. Dier-ez-Zor General Hospital will have 178 beds including the obstetrics and gynecology ward and the delivery ward that are being constructed, and the number of the personnel is approx. 590, including 76 medical doctors and 116 nurses. Hasaka Internal, Gynecology and Pediatric Hospital has 80 beds and approx. 100 staff members, including 14 medical doctors and 46 nurses.

The purpose of this cooperation project is to provide the three hospitals in the north-eastern area with equipments for neonatal and pediatric care, support departments (e.g. operation, diagnostic imaging, laboratory and sterilization) and common use departments. As the required specs and volume of such equipments have been determined based on the scale (number of rooms and users), functions, and contents and actual performance of treatment of the target hospitals, it is believed that the equipments will be adequately utilized in the above-mentioned organizational framework.

### 2-4-2 Maintenance Plan

As for the maintenance of the equipment owned by the target hospitals, engineers and technicians of each hospital only conduct easy maintenance and repair. In case of problems that these engineers and technicians cannot solve, the hospitals send a written request for repair to the governorate's Health Directorate, and the staff members of the Health Directorate's maintenance department address the problems. Equipments that require advanced maintenance and repair technologies are dealt with by the Biomedical Engineering Directorate, which is under the control of the MOH. The directorate covers all public hospitals across the country.

The Biomedical Engineering Directorate consists of the four departments; the Maintenance and Repair

Department, the Training and IT Department, the Quality Control Department and the Technical Research Department. The Maintenance and Repair Department is in charge of maintenance and repair of medical equipments. There are 13 workshops under this department and engineers and technicians of these workshops conduct repair works. The department has approx. 100 qualified engineers and technicians. These qualifications are national ones; engineers are those who have finished a 5-year curriculum in a science and engineering department of a college after graduating from high school, and technicians are those who have finished 2-year curriculum in a vocational school of science and technology after graduating from high school. Maintenance and repair of advanced medical equipments that the workshops cannot handle is done by the outside parties such as manufacturers' agents under a maintenance contract. Maintenance and repair of vehicles is conducted by the Health Directorate of each governorate.



## 2-5 Project Cost Estimation

### 2-5-1 Initial Cost Estimation

(1) Cost to be Covered by Syria      11,555 USD (approx. 1.06 million yen)

Table 2-6 Cost to be Covered by Syria

Operation category	Total amount
Fees for banking agreements	11,555 USD (1.06M yen)
Total	11,555 USD (1.06M yen)

#### (2) Conditions for Cost Estimation

(i) Estimation as of: April 2010

(ii) Exchange rate: (6 months average TTS)

- US dollar      US\$1.00 = 91.20 yen

- Euro          Euro1.00 = 130.60 yen

(iii) Period of procurement:          Periods of details design and equipment procurement are as shown in the implementation time schedule.

(iv) Other:          Costs shall be estimated based on the grand aid system of the Japanese government.

## 2-5-2 Operation and Maintenance Cost

The Ministry of Finance determines all budget allocations for government ministries and agencies. The budget for the three hospitals that are under the control of the MOH is allocated to each hospital via the governorate's Health Directorate, in two separate categories of the operating cost including salaries and the general administration cost. Maintenance cost for medical equipments is included in the category of "medical equipment and appliances". As for the investment budget, the budget for construction works is provided to each hospital via the Ministry of Local Government and the governorate's Health Directorate except the budget for procurement of medical equipments, which is provided to each hospital via the MOH and the governorate's Health Directorate.

Table2-7 Budget of Health Directorate of Raqqa Governorate (unit: 1000 Syrian Pounds)

Contents	2005	2006	2007	2008	2009	2010
Operating cost						
Operating cost total	237,836	286,840	307,874	394,461	469,000	508,700
General administration cost						
Medial equipment and appliances	100,251	117,479	149,468	169,500	165,000	190,000
Other general administration cost	60,927	70,297	77,166	84,182	103,425	93,200
General administration cost total	161,178	187,776	226,634	253,682	268,425	283,200

Data taken from responses to questionnaire

Table 2-8 Budget of Health Directorate of Dier-ez-Zor Governorate (unit: 1000 Syrian Pounds)

Contents	2005	2006	2007	2008	2009
Operating cost					
Operating cost total	623,363	0	0	0	0
Medial equipment and appliances	122,198	123,000	144,900	160,197	177,500
Other general administration cost	50,522	47,406	65,926	80,046	101,237
General administration cost total	172,720	170,405	210,825	240,242	278,738

Data taken from responses to questionnaire

**Table 2-9 Budget of Health Directorate of Hasaka Governorate (unit: 1000 Syrian Pounds)**

Contents	2005	2006	2007	2008
Operating cost				
Operating cost total	352,965	450,858	517,602	624,573
General administration cost				
Medial equipment and appliances	140,995	210,992	219,941	275,506
Other general administration cost	55,204	86,232	110,410	103,570
Operating cost	196,199	297,224	330,351	379,076

Data taken from responses to questionnaire

**(1) Administrative and Maintenance Costs for the Cooperation Project**

In case this cooperation project is carried out, the necessary annual administrative and maintenance cost for the purchase of reagents, consumables and replacement parts required for the procured items is roughly estimated as below. For more details, see Appendix 9: List of Equipment Maintenance Costs.

**Table 2-10 Administrative and Maintenance Costs for Procured Equipment**

	Raqqa	Dier-ez-Zor	Hasaka
For replacement equipment		¥10,159,710	¥8,384,900
For new or additional equipment	¥21,582,816	¥11,532,380	¥8,110,040
Total (unit: yen)	¥21,582,816	¥21,692,090	¥16,494,940
Total (unit: 1000 Syrian Pounds)*	10,791	10,846	8,247

\*1 yen = 0.5 Syrian Pound

Based on the figures in Table 2-10, if the Project is carried out, the maintenance costs to be covered by the three target Health Directorates will be 10,791,000 Syrian Pounds for the Health Directorate of Raqqa Governorate, 10,846,000 Syrian Pounds for the Health Directorate of Dier-ez-Zor Governorate, and 8,247,000 Syrian Pounds for the Health Directorate of Hasaka Governorate. About half of the maintenance costs for Dier-ez-Zor and Hasaka will be incurred as a result of replacement of the existing equipments and the same amounts have been already incurred. Based on the figures in Table 2-7, 2-8 and 2-9, the equipment maintenance costs incurred by the three Health Directorates in the latest available year are estimated 190,000,000 Syrian Pounds, 177,500,000 Syrian Pounds and 275,506,000 Syrian Pounds. The maintenance costs incurred due to the Project implementation will make up 5.68%, 6.11% and 2.99% of the equipment maintenance cost of each Health Directorate. These percentages seem to be small enough to be covered by the Directorates.

**2-6 Other Relevant Issues**

Raqqa pediatric hospital and a delivery ward of Dier-ez-Zor Pediatric and Gynecology Hospital are under

construction work. By the end of December 2011, all the construction work for Raqqa including procurement and installation of facility equipment are supposed to be completed, by the end of December 2012, procurement of furniture and fixtures are supposed to be completed, and by the March 2013, the Hospital will be open. Construction work for Dier-ez-Zor is scheduled to be completed around the March 2011. There are a lot of equipment under the Project for those hospitals, so the construction work should proceed without delay so that the installation work of the equipment under the Project and provision of medical service should not be affected.



## Chapter 3. Project Evaluation

## Chapter 3 Project Evaluation

### 3-1 Recommendations

#### 3-1-1 Preconditions for Implementing the Project

The following conditions are presumed to be met as the prerequisite for the implementation of this Project.

##### ( 1 ) Construction of Raqqa Pediatric Hospital, Placement of Personnel, and Procurement of Furniture, Fixtures, and Supplies

Raqqa Pediatric Hospital is planned for the completion of construction by December 2011, completion of interior finish and incidental facilities by August 2012, and opening in March 2013. Because the Project at this hospital includes equipment requiring installation works, construction and related works must be finished before the arrival of equipment.

When the hospital is opened, physicians and other workers are called from the National Hospital, Abayyad Hospital, Thawra Hospital, Polyclinic, and Health Center within the governorate to commence services. Graduates from the nursing school in the governorate will be given priority in employment. Furniture, office supplies, and similar equipment will be procured using the Syrian budget, and these are indispensable to the activities of the hospital.

##### ( 2 ) Construction of Delivery Ward and Reconstruction of Obstetrics/Gynecology Ward and Operating Rooms at Dier-ez-Zor Pediatric and Gynecology Hospital

Dier-ez-Zor Pediatric and Gynecology Hospital is undergoing the construction of the new delivery ward and the reconstruction of the obstetrics/gynecology ward and operating rooms. Because the Project includes the equipment for the rooms in these areas, construction and reconstruction works must be completed before the arrival of equipment.

##### ( 3 ) Tax Exemption Procedures for Equipment

The Syrian Government has official procedures for granting tax exemption to the items procured with Grant Aid. The procurement contractor sends a letter requesting tax exemption to the Ministry of Health, which submits the request to the Ministry of Finance and at the same time asks the Ministry of Economy to perform exporter examination. The application for tax exemption submitted to the Ministry of Finance is approved finally after the review by customs authorities. It is necessary that these procedures be processed promptly.

#### 3-1-2 External Conditions for Achieving the Overall Project Plan

The following actions by the recipient country or external conditions are needed as the precondition for realizing and maintaining the beneficial effects of the Project.

### ( 1 ) Budget for Equipment Maintenance and Management

The budget for maintenance and management of medical equipment, along with the budget for hospital operation, is allocated from the Ministry of Local Administration via the Health Bureau of each governorate. Because the equipment procured in this Project includes items requiring periodical purchase of expendable supplies and replacement of parts, it is necessary that these budgets be secured as before.

## 3-2 Project Evaluation

### 3-2-1 Relevance

From the following considerations, it is considered that this Project is relevant for implementation as an assistance project with Japan's Grant Aid fund.

- While the Syrian Government plans to construct small and medium-sized hospitals in rural areas from the standpoint of correcting urban-rural disparity in healthcare services, the beneficiaries of this Project are in the significantly impoverished northeastern region (the three directorates of Raqqa, Dier-ez-Zor, and Hasaka) and are the ordinary citizens representing about 17% of the national population.
- The equipment planned in this Project does not require an excessively high level of expertise and can be operated and maintained using the country's own fund, human resources, and technology.
- This Project is considered to contribute to the "improvement of pediatric medicine and perinatal medicine," which is a priority action area identified in the "Targets and Development Strategies in the Healthcare Sector" formulated in January 2010 in line with the 10th 5-year plan (2006-2011).
- Including the target hospitals of this Project, public hospitals in Syria provide medical care free of charge, and this Project would not be substantially profitable.
- This Project would not have particularly notable negative impacts in environmental and social aspects.
- This Project can be implemented with the Grant Aid assistance scheme of the Japanese Government without causing significant difficulties.

### 3-2-2 Effectiveness

#### ( 1 ) Quantitative effect

The quantitative effects expected from the implementation of this cooperation Project include the following.



Table 3-1 Quantitative effect (Raqqa Pediatric Hospital)

Index	Reference year	Target value (2015)
Number of inpatients	0	15,700
Number of surgical operations	0	2,400
Number of radiological tests	0	4,700
Number of laboratory tests	0	27,000

\* Raqqa Pediatric Hospital is a new hospital currently under construction, which will be separated from the Pediatric Department of Raqqa National Hospital. Data of Raqqa National Hospital does exist as a whole data, but the data for Pediatric Department alone is not available. Therefore, only the target values are shown in this table, based on the actual operation.

Table 3-2 Quantitative effect (Dier-ez-Zor Pediatric and Gynecology Hospital)

Index	Reference year (2009)	Target value (2015)
Number of inpatients	17,752	21,600
Number of surgical operations	3,745	5,400
Number of child deliveries	5,994	8,000
Number of radiological tests	21,014	30,500
Number of laboratory tests	140,475	189,900

Table 3-3 Quantitative effect (Hasaka Internal, Gynecology and Pediatric Hospital)

Index	Reference year (2009)	Target value (2015)
Number of inpatients	8,295	9,800
Number of radiological tests	8,048	11,600
Number of laboratory tests	24,635	33,200

(2) Qualitative effect

The qualitative effects expected from the implementation of this cooperative Project include the following.

- As a result of the use of medical equipment relating to pediatric and perinatal care in the top referral hospitals for pediatrics and perinatal care in the north eastern region, the pediatric and perinatal medical service will be improved.

Based on the facts discussed above, this Project is considered highly relevant and is expected to be effective.

## **[Appendix]**

1. Member List of the Study Team
2. Study Schedule
3. List of Parties Concerned in the Recipient Country
4. Minutes of Discussions (Outline Design)
5. Minutes of Discussions (Explanation of Outline Design)
6. Examination of the Requested Equipment
7. Equipment List
8. Equipment Delivery List
9. Operation and Maintenance Cost for the Equipment

## 1. Member List of the Study Team

Appendix 1. Member List (Outline Design Survey)

	Name	Title	Organization
1	Dr. Mitsuhiro USHIO	Team Leader	Executive Technical Adviser to the Director General, Human Development Department, JICA
2	Dr. Yoriko NISHIZAWA	Technical Advisor	Assistant Director, Office of International Cooperation, International Affairs Division, Minister's Secretariat, Ministry of Health, Labour and Welfare, Japan
3	Mr. Ken KUBOKURA	Project Coordinator	Assistant Director, Reproductive Health Division, Health Systems and Reproductive Health Group, Human Development Department, JICA
4	Mr. Hironori NAKAJIMA	Project Manager/ Equipment Planner	International Total Engineering Corporation (ITEC)
5	Ms. Reiko SUMI	Procurement/ Cost Planner	International Total Engineering Corporation (ITEC)
6	Mr. Shigehito AKAGI	Health/Medical Service Surveyor	International Total Engineering Corporation (ITEC)
7	Mr. Dai Fujita	Infrastructure/Facility Surveyor	International Total Engineering Corporation (ITEC)

1-3 Official member    4-7 Consultant member

Appendix 1. Member List (Explanation of Outline Design)

	Name	Title	Organization
1	Mr. Hideki Tanabe	Team Leader	Senior Representative JICA Syria Office
2	Mr. Yoshimasa Takemura	Project Coordinator	Assistant Director Health Division 1, Human Development Department, JICA
3	Mr. Hironori NAKAJIMA	Project Manager/ Equipment Planner	International Total Engineering Corporation (ITEC)
4	Mr. Dai Fujita	Infrastructure/Facility Surveyor	International Total Engineering Corporation (ITEC)

1-2 Official member    3, 4 Consultant member

## 2. Study Schedule

**Study Schedule (Outline Design Study)**

				Official Members	Project Manager/ Equipment Planner	Procurement/ Cost Planner	Health/Medical Service Surveyor	Infrastructure/Facility Surveyor
				Ushio, Nishizawa, Kubokura	Hironori Nakajima	Reiko SUMI	Shiqehito AKAGI	Dai Fujita
1	8-Mar	M	AM PM		Tokyo—Dubai			
2	9-Mar	T	AM PM		Dubai—Damascus Courtesy call at JICA office, EOJ, MOH			Amman-Damascus
3	10-Mar	W	AM PM		Discussion with MOH (Explanation of IR, confirmation of schedule, submission of QTR) Survey Medical Equipment Management Office			
4	11-Mar	T	AM PM		Discussion with MOH Survey Damascus Hospital			
5	12-Mar	F	AM PM		Move : Damascus-Hasake			
6	13-Mar	S	AM PM		Courtesy call at Hasake Health Directorate Office Survey Hasake Hospital			
7	14-Mar	S	AM PM		Survey Hasake Hospital, other relevant hospitals Move : Hasake-Dier-ez-Zor			
8	15-Mar	M	AM PM		Courtesy call at Dier-ez-Zor Health Directorate Office Survey Dier-ez-Zor Hospital			
9	16-Mar	T	AM PM		Survey Dier-ez-Zor Hospital, other relevant hospitals Move : Dier-ez-Zor-Ragga			
10	17-Mar	W	AM PM		Courtesy call at Raqqa Health Directorate Office Survey Raqqa National Hospital			
11	18-Mar	T	AM PM		Survey Raqqa National Hospital, other relevant hospitals, Construction company			
12	19-Mar	F	AM PM		Team meeting			
13	20-Mar	S	AM PM		Team meeting			
14	21-Mar	S	AM PM		Tokyo— -Damascus Move: Damascus-Ragga			
15	22-Mar	N	AM PM		09:00 Courtesy call at Raqqa Health Directorate Office 11:00 Survey Raqqa National Hospital, Construction company			
16	23-Mar	T	AM PM		09:00 Survey Raqqa National Hospital, other health facilities Move : Raqqa-Hasakeh			
17	24-Mar	W	AM PM		09:00 Courtesy call at Hasakeh Health Directorate Office 10:00 Survey Hasake Hospital 11:00 Survey other health facilities, Move: Hasakeh-Dier-ez-Zor			
18	25-Mar	T	AM PM		09:00 Courtesy call at Dier-ez-Zor Health Directorate Office 10:00 Survey Dier-ez-Zor Hospital 11:00 Survey other health facilities, Move: Dier-ez-Zor-Damascus			
19	26-Mar	F	AM PM		Internal meeting			
20	27-Mar	S	AM PM		09:00 Survey Damascus hospital Internal meeting			
21	28-Mar	S	AM PM		08:30 Discussion at JICA office 10:00 Discussion at MOH about M/D			
22	29-Mar	M	AM PM		09:00 Discussion at MOH about M/D			
23	30-Mar	T	AM PM		09:30 Signing of M/D 12:30 Report to JICA office (Nishizawa left Damascus)			
24	31-Mar	W	AM PM		09:00 Report to EOJ Damascus—	Survey local dealers	Additional survey	Survey local dealers
25	1-Apr	T	AM PM		—Tokyo	Additional survey	Survey local dealers	Additional survey Survey local dealers
26	2-Apr	F	AM PM			Damascus-Dubai		Damascus-Amman
27	3-Apr	S	AM PM			Dubai-Tokyo		

**Study Schedule (Explanation of Outline Design)**

			Team Leader	Yoshimasa Takemura	Project Manager/ Equipment Planner	Infrastructure/Facility Surveyor
			Hideki Tanabe	Project Coordinator	Hironori Nakajima	Dai Fujita
1	8-Dec	W			Tokyo—Dubai	
2	9-Dec	T			Dubai—Damascus Courtesy call at JICA office, EOJ, MOH	
3	10-Dec	F			Move : Damascus-Dier-ez-Zor	
4	11-Dec	S			Courtesy call at Dier-ez-Zor Health Directorate Office Survey Dier-ez-Zor Hospital	
5	12-Dec	S			Survey Dier-ez-Zor Hospital	
6	13-Dec	M			Courtesy call at Hasakeh Health Directorate Office Survey Hasakeh Hospital	
7	14-Dec	T			Move: Hasakeh-Raqqa —Damascus-Raqqa, Internal meeting	
8	15-Dec	W			Courtesy call at Raqqa Health Directorate Office Survey Construction site	
9	16-Dec	T			Discussion at Raqqa Health Directorate Office Move : Raqqa-Damascus	
10	17-Dec	F			Internal meeting	
11	18-Dec	S			Discussion at MOH about M/D Signing of M/D	
12	19-Dec	S			Report to JICA office Report to EOJ	
13	20-Dec	M			Damascus-Dubai	
14	21-Dec	T			Dubai-Tokyo	



### 3. List of Parties Concerned in the Recipient Country

— **Implementing Organization / Hospitals** —

1. Ministry of Health
  - 1-1. Dr. Rida Said/Minister of Health
  - 1-2. MD. Talal Taher Bakfalouni/Director of Planning & international Cooperation
  - 1-3. Mr. Mayssa Tamil/Head of International Cooperation Department in Planning & international Cooperation Directorate
  - 1-4. Mr. E. Samar Sapouni/M. Medical Device
  - 1-5. Dr. Reham Alba Aldeen/Department of Health Policies in the Planning & International Cooperation Directorate
  
2. Biomedical Engineer Department
  - 2-1. Eng. Slam Tazmaty/Chief of Training and Planning Department
  - 2-2. Eng. Hasan Ahmad/Manager of Service & Maintenance Department
  - 2-3. Eng. Ameer Khaddow/Engineer/X-ray Group
  - 2-4. Eng. Nezar Natouf/Technical/X-ray Group
  - 2-5. Eng. Dr. Salah Othman/Metrology and Calibration Department
  - 2-6. Eng. Marwan Al-Ianam/Engineer
  - 2-7. Eng. Mohanmad Ohotani/Engineer
  
3. Hasaka Health Directorate Office
  - 3-1. Dr. Mohamad Khalaf/Director/AI-Hassaka Health Director
  - 3-2. Dr. Hussain Al-Tallaa/Director of Service Department/Medical Service
  - 3-3. Dr. Marwan Hammond/Director of Emergency
  - 3-4. Dr. Kiriakos Bahde/Head of the planning Section
  
4. Hasaka Internal, Gynecology and Pediatric Hospital
  - 4-1. Dr. Hussein Huneif/Director/AI Hassakeh Pediatric Hospital
  - 4-2. Dr. Mahmond Osso/Director of Hematology Department
  - 4-3. Dr. Ibrahim Najjar/Director of Reparatory diseases Department
  - 4-4. Dr. Eshak Asio/Director of General Pediatric/Emergency Department
  - 4-5. Dr. Ahmad Salama/General Pediatrician/Pediatric Department
  - 4-6. Dr. Emanol Koriel/Laboratory Doctor/Laboratory Department
  - 4-7. Dr. Ibrahim Al-Ahmad/Manager/The pediatric Hospital
  - 4-8. Eng. Ahmad Al-Mousa/Technical laboratory
  - 4-9. Dr. Mahmoud Osso/Pediatric thalassemia department
  - 4-10. Dr. Shikhmous Shiwish/Radiologist/Radiology department

### Appendix 3. List of Parties Concerned in the Recipient Country

5. Dier-ez-Zor Health Directorate Office
  - 5-1. Dr. Alarab Ghassan/Director of Health
  - 5-2. Dr. Fakh ER-Al Humid/Deputy Director
  - 5-3. Dr. Zaher Shaher/Director of Medical Service
  - 5-4. Dr. Khaled Marzouk/Department management of Medical Equipment
  - 5-5. Dr. Akram Al Joury/Director of Hospitals
  - 5-6. Dr. Subbu Mlyhan/Dier-er-Zor International Hospital/Pediatric Department
  - 5-7. Dr. Yasser Sarras/Director of Primary Health Care
  - 5-8. Dr. Bashar Alsuleiman/Director of Dier-er-Zor Health District/Primary Health Care
  
6. Dier-ez-Zor Pediatric and Gynecology Hospital
  - 6-1. Dr. Tarif Badran/Hospital Director/Gynecologist
  - 6-2. Dr. A. Majeed Manzauk/Head of Department Pediatric Section
  - 6-3. Dr. Adman Ararab/Head of Operation Theater/Gynecologist
  - 6-4. Dr. Fund Ziadan/Pediatrician of Anesthesia Department
  - 6-5. Dr. Subbhi Mlyhan/Pediatric deputy manager/Pediatric Department
  - 6-6. Dr. Samer Hunidi/Head of obstetric and gynecology
  - 6-7. Dr. Abdulazizz Khalaf/Head of laboratory department
  
7. Raqqa Health Directorate Office
  - 7-1. Dr. Faysal Showib/Director of the Directorate of Health
  - 7-2. Dr. Ismail Al-olis/Medical Services, Pediatric Physician
  - 7-3. Dr. Racha Bade/Journalist in the Health Directorate
  - 7-4. Dr. Muhammad Hassani/Health Section
  - 7-5. Dr. Moyassar Al-Muhammad/Pediatrician
  - 7-6. Dr. Bassam Al-Habloush/Pediatrician
  - 7-7. Ms. Lamis Abdullah/Officer
  
8. Raqqa National Hospital
  - 8-1. Dr. Ahmad Ezzo/Director of National Hospital
  - 8-2. Dr. Suleiman Ahmad/Head of internal/Internal medicine
  - 8-3. Dr. Sallah-apdeen/Head of surgery department
  - 8-4. Dr. Ahlam Al-Ali/Pediatric doctor
  - 8-5. Dr. Khaleel Al-Alow/Head of laboratory section
  - 8-6. Eng. Yhya AlKalil/Civil engineer
  - 8-7. Dr. Muwala Hammood/Anesthesiology
  - 8-8. Eng. Kassam Al Ali/Management development
  - 8-9. Dr. Adel Hajhasan/Head of operation room/General surgery

- 8-10. Dr. Abdulnazak Ali/Cardiologist/Cardiology
- 8-11. Eng. Hosen Khameis/Big boss maintenance/Health department
- 8-12. Dr. Ibrahim Mohamed/Chief of Radiology
- 8-13. Dr. Mualla Al-Hmood/ICU department
- 8-14. Dr. Abed Al-Razzag/CCU department

— **Other Relevant Health Facilities** —

- 9. Hasaka Training Center
  - 9-1. Dr. Mohammed Malamosa/Chief of the Training Center
- 10. Dier-ez-Zor Policlinic
  - 10-1. Dr. Rafeh Alhameed/Management of the Center, Pediatrician
- 11. Dier-ez-Zor Al Asad Hospital
  - 11-1. Dr. Mahmood Sayyah/Director of Al-Assad Hospital
- 12. Raqqa Policlinic
  - 12-1. Dr. Ghiath Hamood/Director of Clinic
- 13. Raqqa Maternity Hospital
  - 13-1. Dr. Basshm Swed/Director of Obstetric and Gynecology Hospital
  - 13-2. Dr. Abdelrahman Abdou/Director of obstetric and gynecology
- 14. Damascus Hospital
  - 14-1. Dr. Ammar Majbour/Medical Director and Head of Ophthalmology Department
  - 14-2. Dr. Mohamad Alhammi/Administrative manager/Administration
  - 14-3. Dr. Rira Haddad planning and Statistic Director/Planning Department
  - 14-4. Eng. Joomana Abbas/Electrical Engineer/Engineering Office
  - 14-5. Eng. Ahmad Badi/Biomed Engineer/ Primary Health Care
  - 14-6. Eng. Houida Matar/Electrical Engineer/Engineering Office
  - 14-7. Dr. Lamia Albazna/Pediatrician/Pediatric Department
  - 14-8. Dr. Bashar Hajali/Pediatrician/Pediatric Department
- 15. Construction company for Raqqa Pediatric Hospital
  - 15-1. Eng. Muhammad Yasser Al-Hammad/Director of Technical Service in Rakka (Super Visor)
  - 15-2. Eng. Mahmoud Hai Hamad/Director of Pediatric Hospital Project/General Corporation for building and Construction

#### 4. Minutes of Discussions (Outline Design)

**MINUTES OF DISCUSSIONS  
ON PREPARATORY SURVEY  
ON THE PROJECT FOR PEDIATRIC EQUIPMENTS IN THE NORTH EAST SYRIA  
IN THE SYRIAN ARAB REPUBLIC**

In response to a request from the Government of the Syrian Arab Republic (hereinafter referred to as "Syria"), the Government of Japan decided to conduct a Preparatory Survey on the Project for Pediatric Equipments in the North East Syria (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Syria a Preparatory Survey Team (hereinafter referred to as "the Team"), which is headed by Dr. Mitsuhiro Ushio, Executive Technical Advisor to Director General, Human Development Department of JICA headquarters, and is scheduled to stay in the country from 9th March to 2nd April, 2010.

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

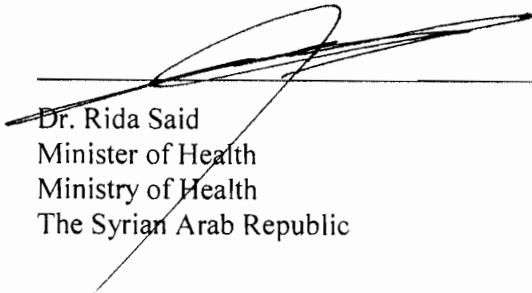
In the course of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Preparatory Survey Report.

Damascus, 30th March, 2010

牛尾 光宏

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Dr. Mitsuhiro Ushio  
Executive Technical Advisor to Director General  
Human Development Department  
Leader  
Preparatory Survey Team  
Japan International Cooperation Agency



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Dr. Rida Said  
Minister of Health  
Ministry of Health  
The Syrian Arab Republic

## ATTACHMENT

## 1. Background and Objective of the Project

## 1-1. Background of the Project

According to the National 10th five-year plan, the North-eastern region (Al Raqqah, Deir-ez-Zor, Hasaka) has weak health indicators in Syria. Both Syrian and Japanese sides (hereinafter referred to as "both sides") understand that there has been a gap between central/urban areas and the North-eastern region especially in terms of number of health professionals and the quality of health facilities and equipment.

In response to the official request from Syria, Japan decided to conduct the Preparatory Survey on the Project for rehabilitating necessary medical equipment for Raqqah Pediatric Hospital, Deir-ez-Zor Pediatric and Gynecology Hospital, and Hasaka Internal, Gynecology and Pediatric Hospital. On the other hand, both sides understand that the procurement of medical equipment for the improvement of pediatric services at the targeted hospitals will cover only one key element among many other important elements such as any close collaboration mechanism between obstetric and gynecologic services and pediatric services, effective referral system, health education at school and home, etc., all of which are necessary to improve the health status.

Both sides understand that the Project will help to improve health services especially for maternal, newborn and child health and support the efforts of the Syrian side to mobilize their resources to the underdeveloped area, which will contribute to respond to the health needs of North-eastern region.

## 1-2. Objective of the Project

The objective of the Project is to upgrade the pediatric services in the north-eastern region of Syria through rehabilitating medical equipment at Raqqah Pediatric Hospital, Dier-ez-Zor Pediatric and Gynecology Hospital and Hasaka Internal, Gynecology and Pediatric Hospital.

## 2. Responsible and Implementing Agency

The Responsible agency is the Ministry of Health, and the implementing agencies are Raqqah Health Governorate, Deir-ez-Zor Health Governorate, and Hasaka Health Governorate. Minister of Health committed to follow up the implementation of activities and other relevant issues below by the above mentioned implementing agencies. Organization charts of these agencies are shown in Annex-1-1, Annex-1-2, Annex-1-3 and Annex-1-4.

## 3. Project sites

The sites of the Project are as follows:

- 3-1. Raqqah Pediatric Hospital, located on Intersection between Aleppo Road and Basil Street, Al Raqqah.
- 3-2. Deir-ez-Zor Pediatric Section, Deir-ez-Zor Pediatric and Gynecology Hospital, located on Nasar Street, Deir-ez-Zor.
- 3-3. Hasaka Pediatric Section, Hasaka Internal, Gynecology and Pediatric Hospital, located on Nashouah Road, Hasaka.

Lists of departments and sections within the above hospitals are shown in Annex-2-1, Annex-2-2

and Annex-2-3.

#### 4. Items requested by the Government of Syria

After discussions with the Team, the items described in Annex-3-1, Annex-3-2, Annex-3-3 (medical equipment) was finally requested by the Syrian side. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

#### 5. Japan's Grant Aid Scheme

5-1. The Syrian side understands the Japan's Grant Aid Scheme explained by the Team, as described in Annex-4.

5-2. The Syrian side will take the necessary measures, as described in Annex-5, for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented.

#### 6. Schedule of the Study

6-1. The consultants will proceed to further studies in Syria until 2nd April, 2010.

6-2. JICA will prepare the draft report in English and dispatch a mission in order to explain its contents of the report in July, 2010.

6-3. In case that the contents of the report is accepted in principle by the Government of Syria, JICA will complete the final report and send it to the Government of Syria by October, 2010.

#### 7. Other relevant issues

(General Issues)

7-1. Ministry of Health assures the allocation of adequate number of experienced health workers in the Project sites, especially newly constructed Raqqah Pediatric Hospital.

7-2. Ministry of Health assures to allocate necessary budgets for the construction as well as the procurement of equipment and materials other than the equipment procured by Japan's Grant Aid.

7-3. Both side confirmed that the specification of equipment and the other technical information shall not be released before the tender to be held in the implementation stage of the Project.

7-4. Ministry of Health agreed that, if necessary, the additional budget and works for the modification of construction and facilities of the target hospitals shall be allocated in accordance with the requirement of the equipment procured by Japan's Grant Aid.

(For Raqqah)

7-5. Ministry of Health assures the completion of construction of Raqqah Pediatric Hospital on schedule by December 2011 and opening of the hospital on July 2012. *2011年12月までにMOHA will Ask*

7-6. Both sides agreed that Japan's Grant Aid will provide only pediatric equipment at Raqqah



Pediatric Hospital.

- 7-7. Raqqah Health Governorate will assure that the ambulance procured by the Project should be exclusively used for the transfer service of Raqqah Pediatric Hospital.
- 7-8. Raqqah Health Governorate will provide the detailed construction schedule of Raqqah Pediatric Hospital to JICA by the end of May 2010.

(For Deir-ez-Zor)

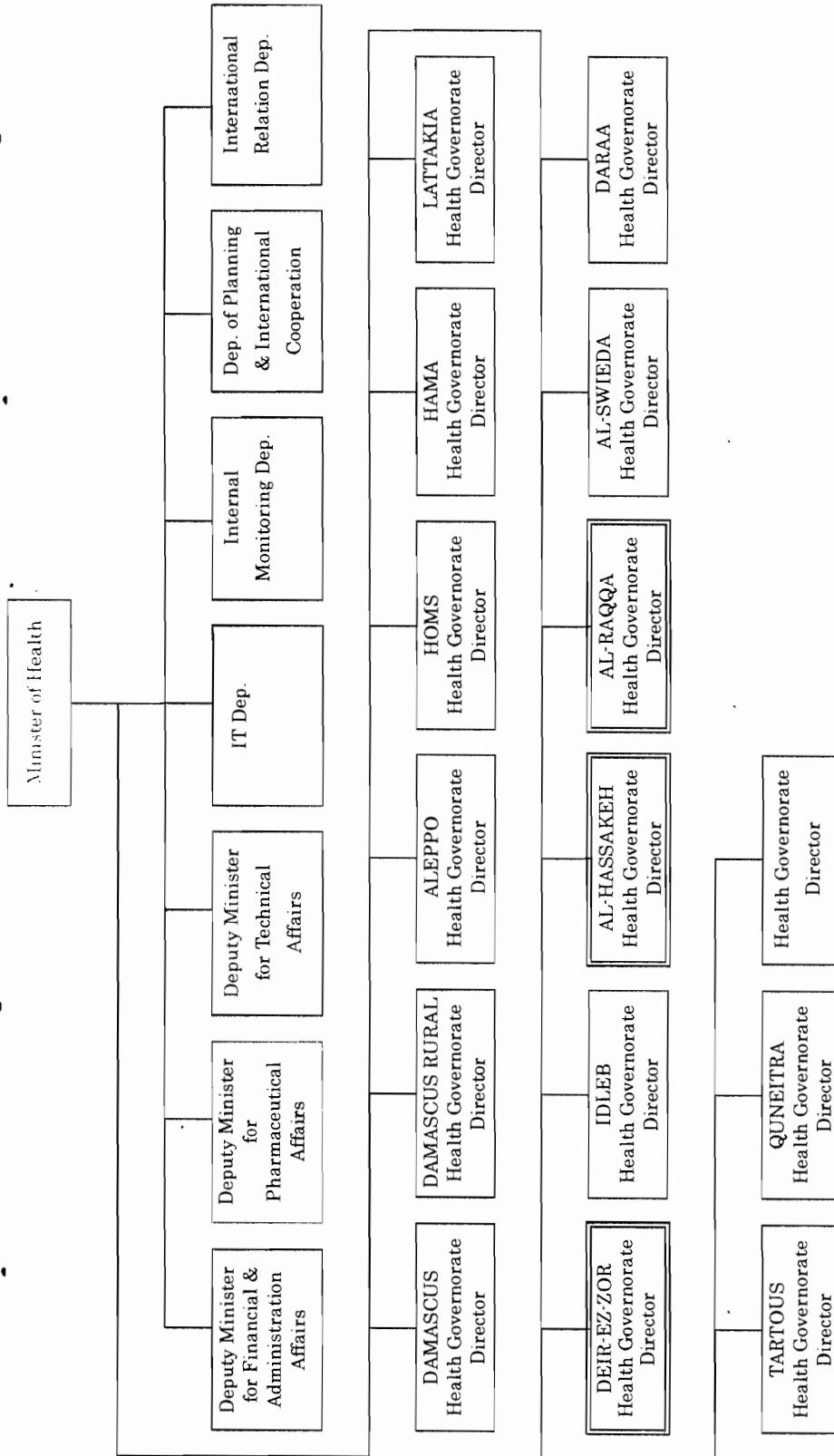
- 7-9. Ministry of Health assures the completion of renovation and extension of Deir-ez-Zor Pediatric and Gynecology Hospital, at least the departments/sections which are related to Japan's Grant Aid, on schedule by July 2011 and allocate necessary budgets for it. 3/4月毎
- 7-10. Both side agreed to exclude the equipment for ENT, Ophthalmology and Dental services at Deir-ez-Zor Pediatric and Gynecology Hospital.

(For Hasaka)

- 7-11. Hasaka Health Governorate will assure that the mobile incubator procured by the Project should be exclusively used for the transfer of high risk newborns to Hasaka Internal, Gynecology and Pediatric Hospital.
- 7-12. Both side agreed to exclude the equipment for ENT, Ophthalmology and Dental services at Hasaka Internal, Gynecology and Pediatric Hospital.

- Annex-1-1 Organization Chart of the Ministry of Health
- Annex-1-2 Organization Chart of Raqqah Health Governorate
- Annex-1-3 Organization Chart of Deir-ez-Zor Health Governorate
- Annex-1-4 Organization Chart of Hasaka Health Governorate
- Annex-2-1 List of Department and Section within Raqqah Pediatric Hospital
- Annex-2-2 List of Department and Section within Deir-ez-Zor Pediatric and Gynecology Hospital
- Annex-2-3 List of Department and Section within Hasaka Internal, Gynecology and Pediatric Hospital
- Annex-3-1 Equipment List of Raqqah Pediatric Hospital
- Annex-3-2 Equipment List of Deir-ez-Zor Pediatric and Gynecology Hospital
- Annex-3-3 Equipment List of Hasaka Internal, Gynecology and Pediatric Hospital
- Annex-4 Japan's Grant Aid
- Annex-5 Major Undertakings to be Taken by Each Government

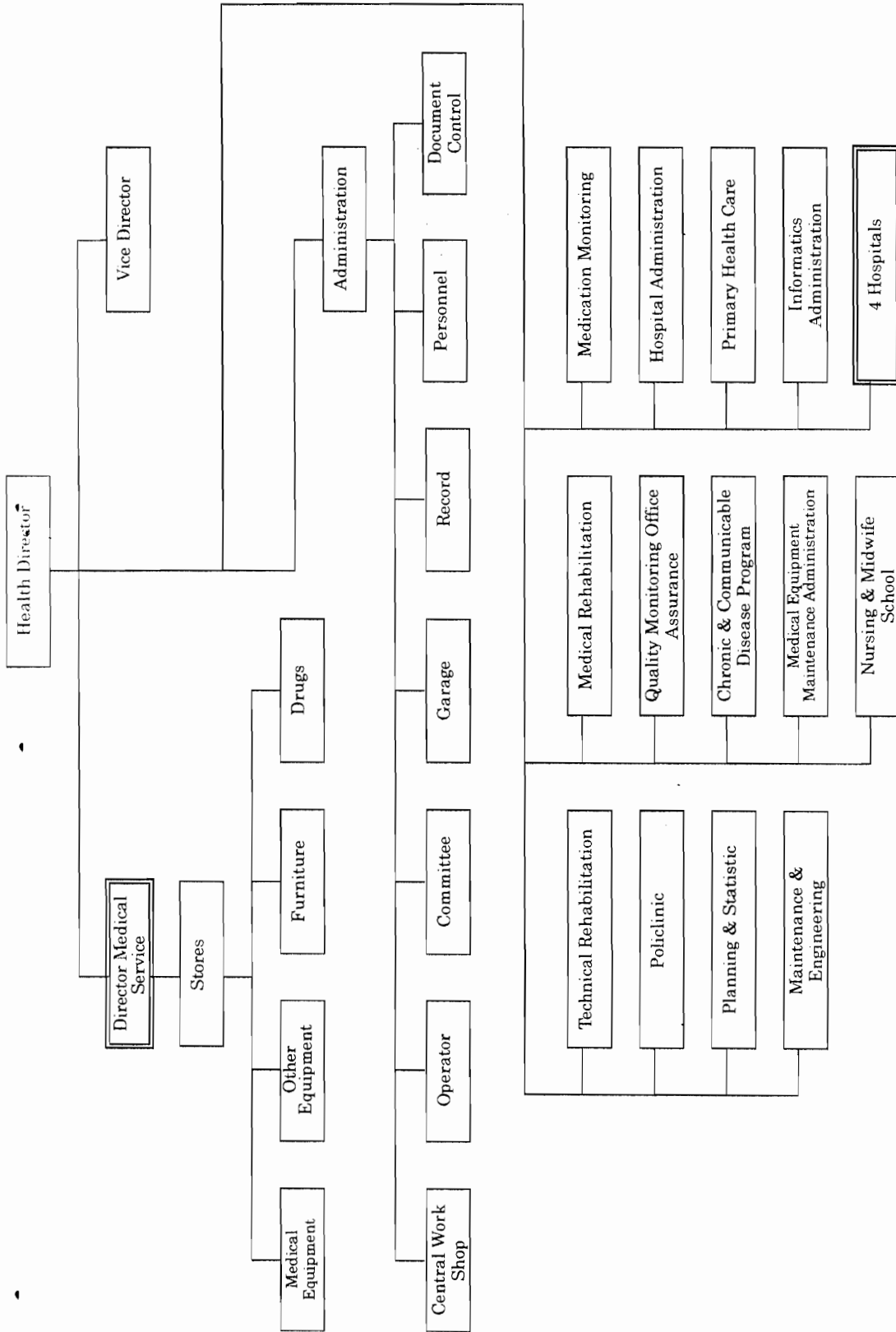
ORGANIZATION CHART OF "MINISTRY OF HEALTH"



*RS*

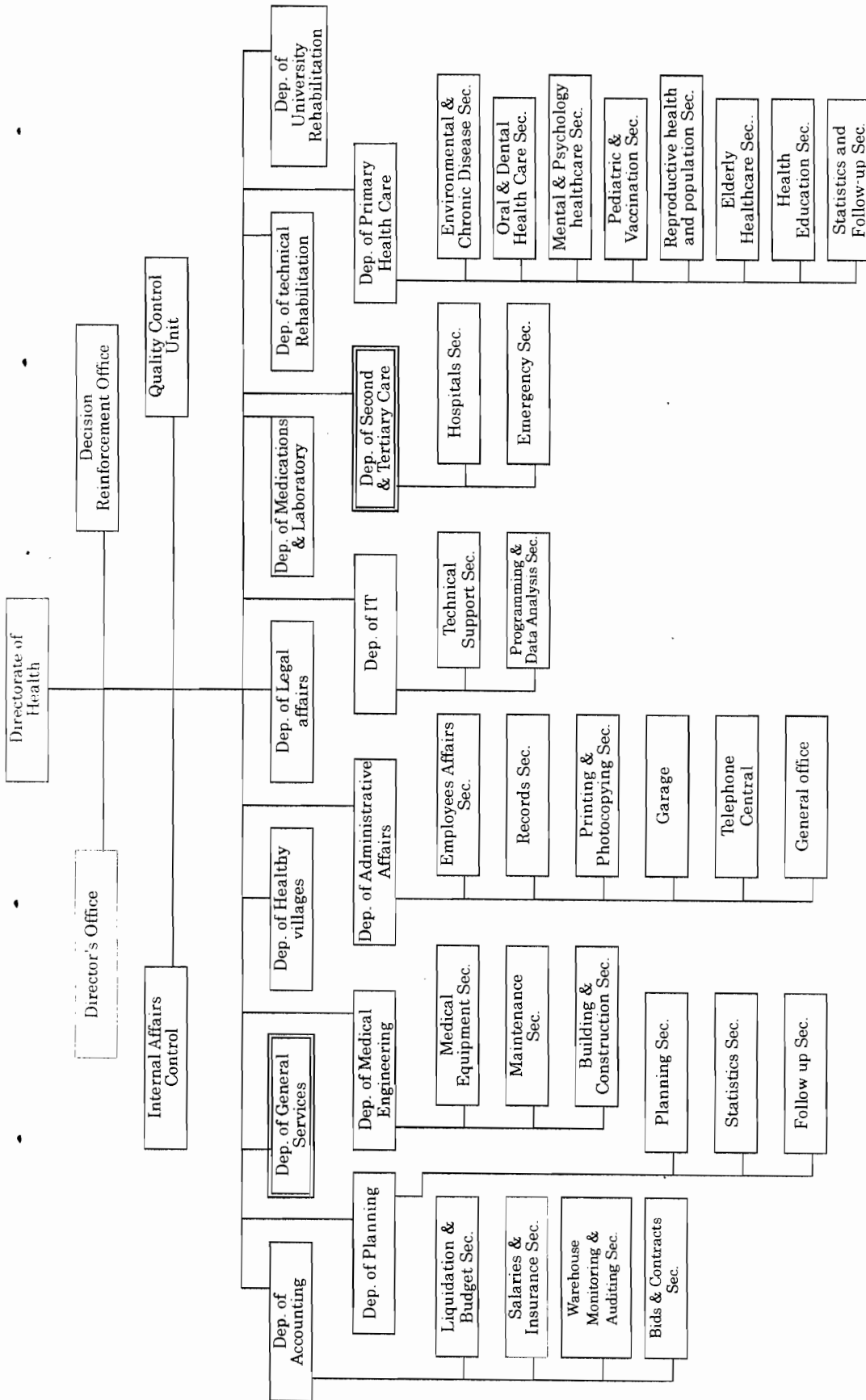
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ORGANIZATION CHART OF "RAQQAH HEALTH GOVERNARATE"



*Handwritten marks: "RS" and a signature.*

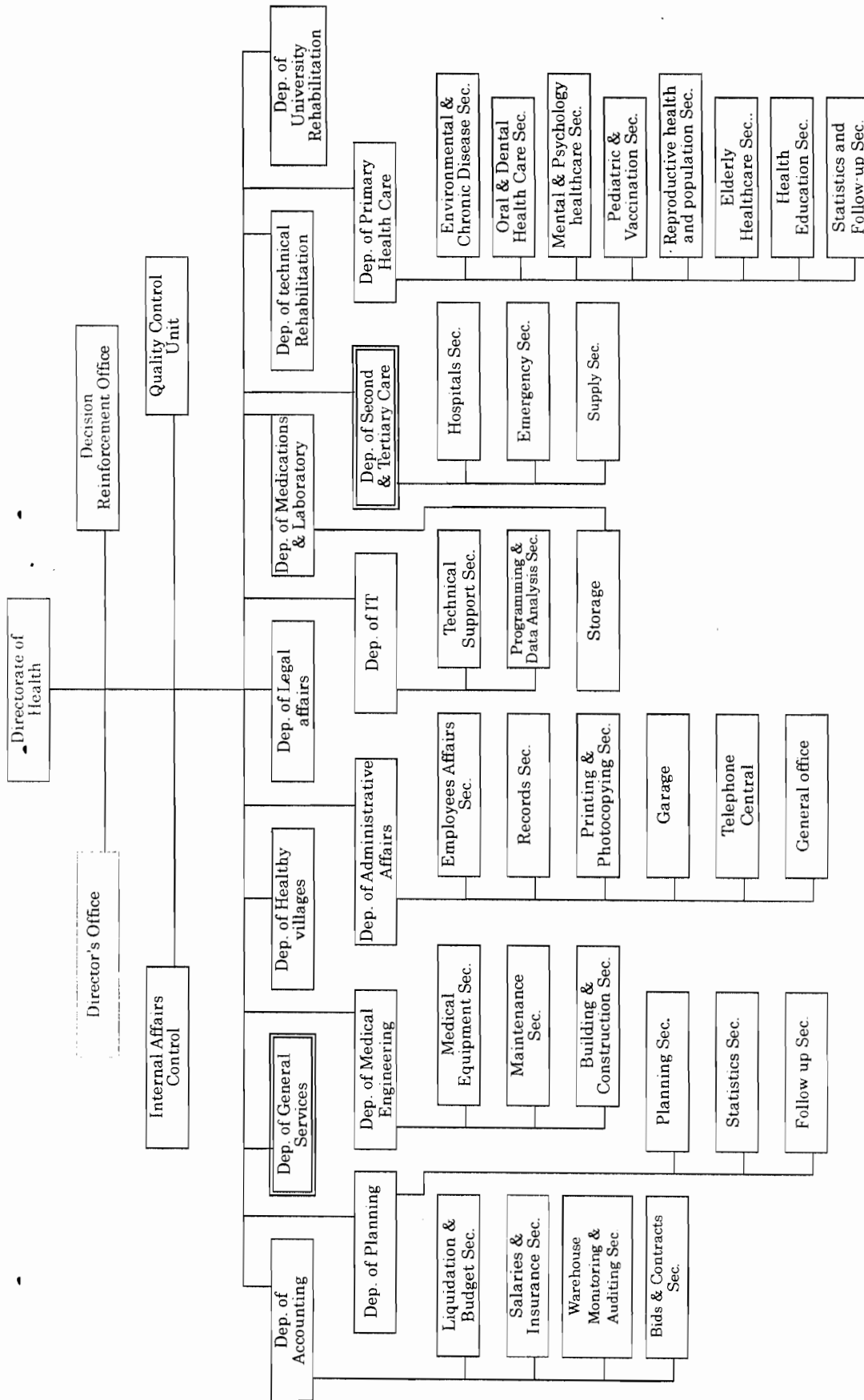
ORGANIZATION CHART OF "DEIREZ-ZOR HEALTH GOVERNARATE"



*Handwritten signature/initials*

*Handwritten symbol*

ORGANIZATION CHART OF "HASAKEH HEALTH GOVERNORATE"



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### List of Department and Section within Raqqah Pediatric Hospital

- Administration
- Outpatient (ER)
  - \* Examination
  - \* Surgery
  - \* Chest
  - \* Neurology
  - \* OBGY
  - \* Dental
  - \* Laboratory
- Incubator
- Ward
  - \* General
  - \* Infection
  - \* Blood and Cancer
  - \* Neurology
  - \* Surgery
  - \* Chest
  - \* Burn
  - \* OBGY
- Operation
  - \* General
  - \* Cardiac
  - \* OBGY
- ICU
- CCU
- Delivery
- Imaging
  - \* X-ray
  - \* Echo
- Laboratory
- Pharmacy

*RS*

*4*

**List of Department and Section within Deir-ez-Zor Pediatric and Gynecology Hospital**

- Administration
- Outpatient (ER)
  - \* Pediatric
  - \* OBGY
  - \* Laboratory
- Incubator (NICU)
- Pediatric Ward
  - \* General
  - \* Blood Disease
  - \* Infection Disease
- Pediatric Operation
- Pediatric ICU
- OBGY Ward
- OBGY Operation
- OBGY ICU
- Delivery
- Delivery ICU
- Imaging
  - \* X-ray
  - \* Echo
- Laboratory
- Pharmacy

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**List of Department and Section within Hasaka Internal, Gynecology and Pediatric Hospital**

- Administration
- Outpatient (ER)
- Ward
  - \* General
  - \* Blood Disease
  - \* Isolation
- ICU
- Incubator
- Imaging
  - \* X-ray
  - \* Echo
- Laboratory
- Pharmacy

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**Equipment List of Raqqa Pediatric Hospital**

No.	Description	Al-Raqqa Q'ty
1	Ambulance	1
2	Anesthesia apparatus with ventilator	3
3	Autoclave	2
4	Baby cot	20
5	Baby scale	7
6	Bed	120
7	Bedside table	120
8	Bilirubin meter (blood)	2
9	Biochemistry analyzer	1
10	Blood gas analyzer	1
11	Cardiotocography	1
12	C-arm X-ray Unit	1
13	Ceiling lamp (1 arm)	2
14	Ceiling lamp (2 arm)	1
15	Central monitor	2
16	Centrifuge	3
17	Defibrillator	5
18	Digital scale	5
19	ECG, Portable	4
20	Electric surgical unit	3
21	Examination light	4
22	Fetus doppler	1
23	Film developper	2
24	General X-ray Unit	1
25	Hematocrit centrifuge	2
26	Hematology analyzer	2
27	High pressure steam sterilizer, automatic	2
28	ICU Bed	16
29	Incubator	2
30	Infant Incubator	50
31	Infant warmer	4
32	Infusion Pump	4
33	Instrument cart	8
34	IV stand	120

No.	Description	Al-Raqqa Q'ty
35	Ligasure	1
36	Microscope	4
37	Multislice Helical CT Scannor	1
38	Operation table (electrical)	3
39	Patient monitor (IBP)	2
40	Patient monitor (standard)	17
41	Phototherapy unit	3
42	Pulse Oxymeter (portable)	3
43	Resuscitator, Ambu (child)	8
44	Resuscitator, Jackson Lee's (baby)	2
45	Resuscitator, Jackson Lee's (child)	10
46	Spectrophotometer	1
47	Stretcher	3
48	Suction pump (2 bottle)	3
49	Suction pump (portable)	3
50	Surgical instrument set	3
51	Syringe Pump	8
52	Ultrasonic nebulizer	10
53	Ultrasound, B/W, Pediatric	1
54	Ultrasound, Color Doppler (pediatric)	1
55	Urine analyzer	2
56	Vacuum extractor	1
57	Ventilator (infant)	18
58	Water bath	3
59	Wheel chair (pediatric)	5
60	X-ray Fluoroscope, digital	1

## Annex-3-2

**Equipment List of Deir-ez-Zor Pediatric and Gynecology Hospital**

No	Description	Deir-ez-Zor Q'ty
1	Anesthesia apparatus with ventilator	2
2	Baby cot	17
3	Baby scale	3
4	Bed	78
5	Bedside table	78
6	Bilirubin meter (blood)	1
7	Bilirubin meter (skin)	2
8	Biochemistry analyzer	1
9	Blood gas analyzer	1
10	Cabinet	13
11	Caesarean instrument set	2
12	Cardiotocography	10
13	Ceiling lamp (2 arm)	2
14	Centrifuge	2
15	Colposcope	2
16	Curettage set	2
17	Defibrillator	5
18	Delivery instrument set	8
19	Delivery table	4
20	Digital scale	6
21	ECG, Portable	4
22	Electric surgical unit	2
23	Emergency trolley	2
24	Examination light	8
25	Fetus doppler	6
26	Film developer	1
27	Film viewer (wall mount)	2
28	General gynecological operation instruments set	1
29	Gynecology treatment table	2
30	Hematocrit centrifuge	2
31	Hematology analyzer	1
32	High pressure steam sterilizer, automatic	2
33	Hormone analyzer	1
34	ICU Bed	10

No.	Description	Deir-ez-Zor Q'ty
35	Incubator	1
36	Infant Incubator	10
37	Infant warmer	4
38	Infusion Pump	8
39	Instrument cart	21
40	IV stand	78
41	Labor bed	6
42	Medical refrigerator	6
43	Microscope	3
44	Operation table	2
45	Patient monitor (adult, standard)	6
46	Patient monitor (Standard + CO2)	2
47	Patient monitor (standard)	6
48	Phototherapy unit	20
49	Pulse oxymeter	22
50	Resuscitator, Ambu (adult)	5
51	Resuscitator, Ambu (child)	13
52	Resuscitator, Jackson Lee's (child)	7
53	Small and large vaginal speculum	2
54	Spectrophotometer	2
55	Sphygmomanometer	6
56	Stethoscope	10
57	Stretcher	2
58	Suction pump (2 bottle)	5
59	Suction pump (portable)	12
60	Surgical instrument set	2
61	Syringe Pump	16
62	Thermometer	26
63	Ultrasonic nebulizer	22
64	Ultrasound, B/W (OB/GY)	2
65	Ultrasound, Color Doppler (pediatric)	1
66	Vacuum extractor	2
67	Ventilator (adult)	2
68	Ventilator (infant)	6
69	Wheel chair (adult)	11
70	Wheel chair (pediatric)	9

No	Description	Deir-ez-Zor Q'ty
71	X-ray Fluoroscope (analogue)	1
72	X-ray Unit (mobile)	1



**Equipment List of Hasaka Internal, Gynecology and Pediatric Hospital**

No.	Description	Hasakeh Q'ty
1	Baby scale	2
2	Bed	12
3	Bedside table	12
4	Bilirubin meter (blood)	1
5	Bilirubin meter (skin)	3
6	Biochemistry analyzer	1
7	Blood gas analyzer	1
8	Cabinet	3
9	Centrifuge (blood)	1
10	Centrifuge (urine)	1
11	Defibrillator	3
12	Digital scale	2
13	ECG, Portable	2
14	Emergency trolley	1
15	Examination light	1
16	Film developer	1
17	Film viewer (mobile)	1
18	Film viewer (wall mount)	1
19	Hematocrit centrifuge	1
20	Hematology analyzer	1
21	ICU Bed	2
22	Incubator	1
23	Infant Incubator	10
24	Infant warmer	2
25	Infusion Pump	4
26	Instrument cart	8
27	IV stand	12
28	Medical refrigerator	1
29	Microscope	2
30	Mobile incubator	1
31	Patient monitor (standard)	4
32	Phototherapy unit	5
33	Pulse oxymeter (portable)	13
34	Resuscitation bag (Jackson Lee's)	3

No	Description	Hasakeh Q'ty
35	Resuscitator, Ambu	3
36	Spectrophotometer	1
37	Sphygmomanometer	8
38	Steam sterilizer	1
39	Stethoscope	30
40	Suction pump (portable)	11
41	Syringe Pump	19
42	Ultrasonic nebulizer	7
43	Ultrasound, B/W (pediatric)	1
44	Ultrasound, Color Doppler (pediatric)	1
45	Ventilator (infant)	3
46	Wheel chair (adult)	5
47	X-ray Fluoroscope (digital)	1
48	X-ray Unit (mobile)	1

Annex-4

## JAPAN'S GRANT AID

The Government of Japan (hereinafter referred to as “the GOJ”) is implementing the organizational reforms to improve the quality of ODA operations, and as a part of this realignment, a new JICA law was entered into effect on October 1, 2008. Based on this law and the decision of the GOJ, JICA has become the executing agency of the Grant Aid for General Projects, for Fisheries and for Cultural Cooperation, etc.

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

### 1. Grant Aid Procedures

The Japanese Grant Aid is supplied through following procedures :

- Preparatory Survey
  - The Survey conducted by JICA
- Appraisal & Approval
  - Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet
- Authority for Determining Implementation
  - The Notes exchanged between the GOJ and a recipient country
- Grant Agreement (hereinafter referred to as “the G/A”)
  - Agreement concluded between JICA and a recipient country
- Implementation
  - Implementation of the Project on the basis of the G/A

### 2. Preparatory Survey

#### (1) Contents of the Survey

The aim of the preparatory Survey is to provide a basic document necessary for the appraisal of the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the recipient country necessary for the implementation of the Project.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, financial, social and economic point of view.



- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of a outline design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country are not necessarily approved in their initial form as the contents of the Grant Aid project. The Outline Design of the Project is confirmed based on the guidelines of the Japan's Grant Aid scheme.

JICA requests the Government of the recipient country to take whatever measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization of the recipient country which actually implements the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country based on the Minutes of Discussions.

## (2) Selection of Consultants

For smooth implementation of the Survey, JICA employs (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

## (3) Result of the Survey

JICA reviews the Report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the appropriateness of the Project.

## 3. Japan's Grant Aid Scheme

### (1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes (hereinafter referred to as "the E/N") will be signed between the GOJ and the Government of the recipient country to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

### (2) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the recipient country to continue to work on the Project's implementation after the E/N and G/A.

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## (3) Eligible source country

Under the Japanese Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When JICA and the Government of the recipient country or its designated authority deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals".

## (4) Necessity of "Verification"

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

## (5) Major undertakings to be taken by the Government of the Recipient Country

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

## (6) "Proper Use"

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

## (7) "Export and Re-export"

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

## (8) Banking Arrangements (B/A)

- a) The Government of the recipient country or its designated authority should open an account under the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). JICA will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.
- b) The payments will be made when payment requests are presented by the Bank to JICA under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions paid to the Bank.

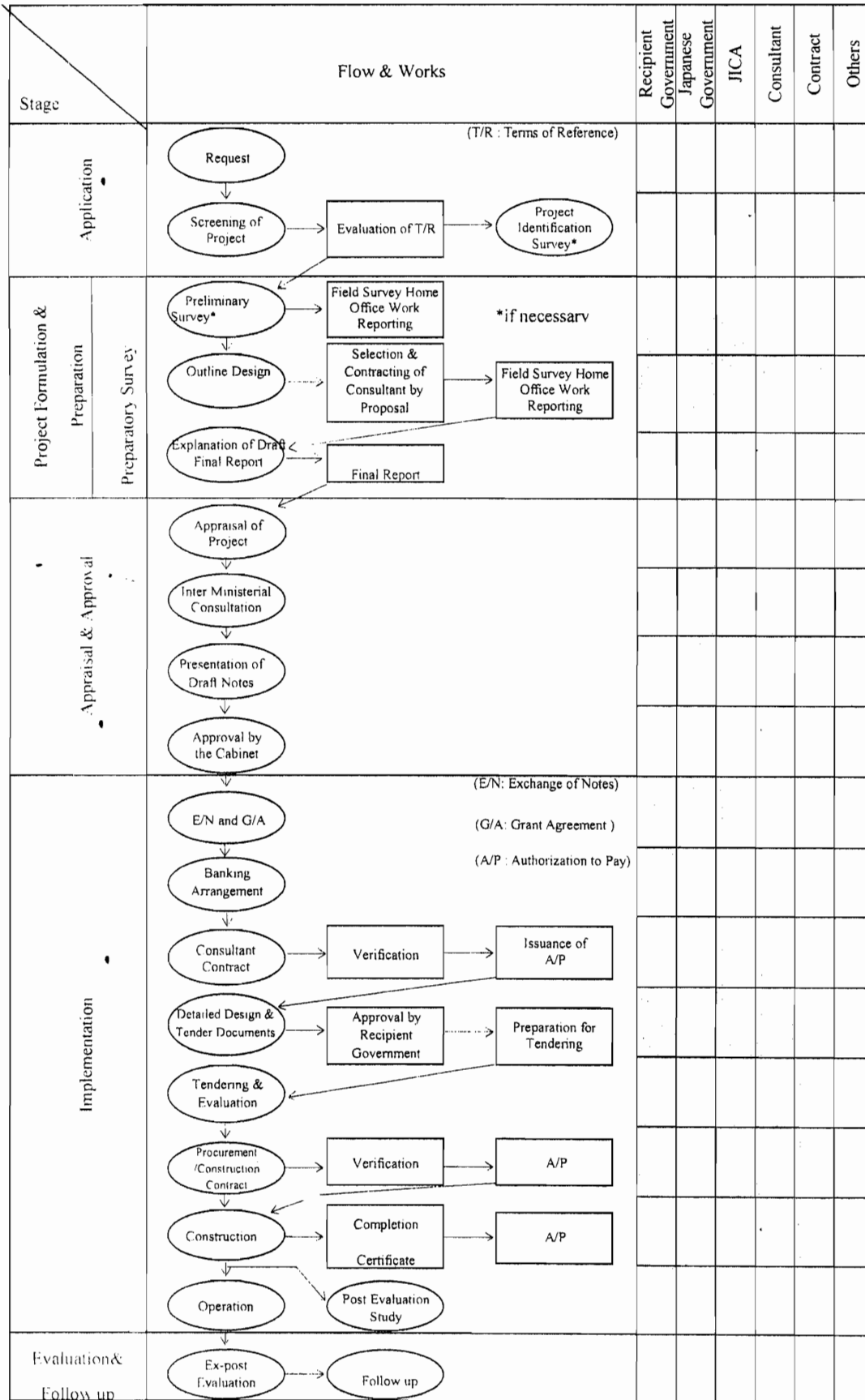
(10) Social and Environmental Considerations

A recipient country must carefully consider social and environmental impacts by the Project and must comply with the environmental regulations of the recipient country and JICA socio-environmental guidelines.

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### 4. Flow Chart of Japan's Grant Aid Procedures



### Major Undertakings to be Taken by Each Government

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

## 5. Minutes of Discussions (Explanation of Outline Design)

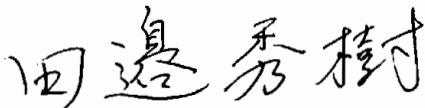
MINUTES OF DISCUSSIONS  
ON PREPARATORY SURVY  
ON THE PROJECT FOR PEDIATRIC EQUIPMENT IN THE NORTH EAST SYRIA  
IN THE SYRIAN ARAB REPUBLIC  
(EXPLANATION ON DRAFT REPORT)

In March 2010, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Preparatory Survey Team on the Project for Pediatric Equipment in the North East Syria (hereinafter referred to as "the Project") to the Syrian Arab Republic (hereinafter referred to as "Syria"), and through discussion, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the survey.

In order to explain and to consult the Syrian side on the components of the draft report, JICA sent to Syria the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Hideki Tanabe, Senior Representative, JICA Syria Office, from 9th December to 20th December, 2010.

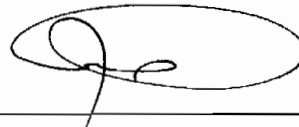
As a result of discussions, both parties confirmed the main items described on the attached sheets.

Damascus, 18th December, 2010



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Mr. Hideki Tanabe  
Leader  
Draft Report Explanation Team  
Japan International Cooperation Agency



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Dr. Talal Tahr Bakfalouni  
Director  
Planning and International Cooperation  
Ministry of Health  
Syria

## ATTACHMENT

### 1. Components of the Draft Report

The Government of Syria agreed and accepted in principle the components of the draft report explained by the Team. The list of equipment agreed by both parties is shown as per ANNEX.

### 2. Japan's Grant Aid scheme

The Syrian side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Syria as explained by the Team and described in Annex-4 and Annex-5 of the Minutes of Discussions signed by both parties on 30th March, 2010.

### 3. Schedule of the Survey

JICA will complete the final report in accordance with the confirmed item and send it to the Government of Syria by April, 2011.

### 4. Confidentiality of the Project

Both sides confirmed that all information related to the Project including detailed specifications of equipment and other technical information, and the cost estimation shall not be released to any outside parties before the signing of all the Contract(s) for the Project.

### 5. Other relevant issues

#### 5-1 Budget for the Construction of Raqqah Pediatric Hospital

Both parties confirmed that necessary budgets to complete the construction of building and facilities of the new hospital was already secured and allocated by the Syrian government. Additionally, the Syrian side shall prepare the budget for furniture other than the equipment to be covered by the Project, and procure them within 2012.

#### 5-2 Time Schedule of Raqqah Pediatric Hospital opening

The time schedule of the construction of building and facilities was confirmed by both parties as follows;

- 1) Completion of the construction: By the end of December 2011
- 2) Procurement of furniture by the Syrian side: By the end of December 2012
- 3) Opening of the hospital: March 2013

During the period between the completion of construction and the opening of hospital, the Syrian side will have preparation works to start service and staff training.

The function of the pediatric department of National Raqqah Hospital and medical and administrative staffs working there are supposed to be transferred to the new hospital. In case of delay of the hospital opening, National Raqqah Hospital will continue to provide pediatric medical service until the new hospital can start



functioning.

### **5-3 Operation and Maintenance Cost**

The Syrian government agreed to secure and allocate necessary budget and staffs for the proper and sustainable operation and maintenance of the equipment to be procured under the Project. Consequently, Ministry of Health, as an implementing institution, will work on the issue with the concerned ministries.

### **5-4 Project Schedule**

The Syrian side requested the Team that the Project needed to be approved by the Cabinet of Japan and commence at the earliest possible time. The Syrian side, therefore, will take necessary measures promptly for the Exchange of Notes and Grant Agreement procedures.

ANNEX: List of Equipment

## Equipment List (Hasaka)

ANNEX

Project No.	Descriptions	Q'ty
H-01	Baby scale	2
H-02	Bed	6
H-03	Bedside table	6
H-04	Bilirubin meter (blood)	1
H-05	Bilirubin meter (skin)	3
H-06	Biochemistry analyzer	1
H-07	Blood gas analyzer	1
H-08	Cabinet	4
H-09	Centrifuge (blood)	1
H-10	Centrifuge (urine)	1
H-11	Defibrillator	3
H-12	Digital scale	2
H-13	ECG (portable)	2
H-14	Emergency trolley	1
H-15	Examination light	1
H-16	Film developper	1
H-17	Film viewer (mobile)	1
H-18	Film viewer (wall mount)	1
H-19	Centrifuge (hematocrit)	1
H-20	Hematology analyzer A	1
H-21	ICU bed	2
H-22	Incubator	1
H-23	Infant incubator	10
H-24	Neonatale treatment table	2
H-25	Infusion pump (infant)	4
H-26	Instrument cart	4
H-27	Medical refrigerator	1
H-28	Microscope	2
H-29	Mobile incubator	1
H-30	Patient monitor (infant, standard)	4
H-31	Phototherapy unit	4
H-32	Pulse oxymeter (portable)	13
H-33	Resuscitator (Ambu, infant)	6
H-34	Spectrophotometer	1
H-35	Sphygmomanometer	8
H-36	Steam sterilizer	1
H-37	Suction pump (portable)	5
H-38	Syringe pump (infant)	19



## Equipment List (Hasaka)

ANNEX

Project No.	Descriptions	Q'ty
H-39	Ultrasonic nebulizer	6
H-40	Ultrasound (color doppler, infant)	1
H-41	Ventilator (infant)	3
H-42	Wheel chair (infant)	5
H-43	X-ray unit (fluoroscope)	1
H-44	X-ray unit (mobile)	1

## Equipment List (Dier-ez-Zor)

ANNEX

Project No.	Descriptions	Q'ty
D-01	Anesthesia apparatus with ventilator	2
D-02	Baby cot	17
D-03	Baby scale	3
D-04	Bed	78
D-05	Bedside table	78
D-06	Bilirubin meter (blood)	1
D-07	Bilirubin meter (skin)	2
D-08	Biochemistry analyzer	1
D-09	Blood gas analyzer	1
D-10	Cabinet	13
D-11	Instrument set for caesarean operation	2
D-12	Cardiotocography	6
D-13	Ceiling lamp (2 arm)	2
D-14	Centrifuge	2
D-15	Colposcope	1
D-16	Instrument set for curettage	2
D-17	Defibrillator	6
D-18	Instrument set for delivery	8
D-19	Delivery table	4
D-20	Digital scale	6
D-21	ECG (portable)	4
D-22	Electric surgical unit	2
D-23	Emergency trolley	2
D-24	Examination light	10
D-25	Fetus doppler	4
D-26	Film developer	1
D-27	Film viewer (wall mount)	2
D-28	Instrument set for gynecology	1
D-29	Instrument set for hysterectomy	2
D-30	Gynecology treatment table	2
D-31	Centrifuge (hematocrit)	1
D-32	Hematology analyzer B	2
D-33	High pressure steam sterilizer	2
D-34	ICU bed	10
D-35	Incubator	1
D-36	Infant incubator	10
D-37	Neonatale treatment table	4
D-38	Infusion pump (infant)	2

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Equipment List (Dier-ez-Zor)

Project No.	Descriptions	Q'ty
D-39	Infusion pump (adult)	6
D-40	Instrument cart	21
D-41	Labor bed	6
D-42	Medical refrigerator	6
D-43	Microscope	3
D-44	Operation table (manual)	2
D-45	Patient monitor (adult, standard)	6
D-46	Patient monitor (infant, standard + CO2)	2
D-47	Patient monitor (infant, standard)	6
D-48	Phototherapy unit	17
D-49	Pulse oxymeter (bedside)	22
D-50	Resuscitator (Ambu, adult)	5
D-51	Resuscitator (Ambu, infant)	13
D-52	Vaginal speculum set	2
D-53	Spectrophotometer	2
D-54	Sphygmomanometer (infant)	3
D-55	Sphygmomanometer (adult)	7
D-56	Stretcher	2
D-57	Suction pump (2 bottle)	5
D-58	Suction pump (portable)	12
D-59	Instrument set for surgery	2
D-60	Syringe pump (infant)	10
D-61	Syringe pump (adult)	6
D-62	Ultrasonic nebulizer	10
D-63	Ultrasound (B/W, OB/GY)	2
D-64	Ultrasound (color doppler, infant)	1
D-65	Vacuum extractor	2
D-66	Ventilator (adult)	2
D-67	Ventilator (infant)	6
D-68	Wheel chair (adult)	11
D-69	Wheel chair (infant)	9
D-70	X-ray unit (fluoroscope)	1
D-71	X-ray unit (mobile)	1

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## Equipment List (Raqqah)

ANNEX

Project No.	Description	Q'ty
R-01	Ambulance	1
R-02	Anesthesia apparatus with ventilator	3
R-03	Autoclave	2
R-04	Baby cot	20
R-05	Baby scale	4
R-06	Bed	107
R-07	Bedside table	107
R-08	Bilirubin meter (blood)	2
R-09	Biochemistry analyzer	1
R-10	Blood gas analyzer	1
R-11	X-ray unit (C-arm)	1
R-12	Ceiling lamp (1 arm)	2
R-13	Ceiling lamp (2 arm)	1
R-14	Central monitor	2
R-15	Centrifuge	3
R-16	Defibrillator	5
R-17	Digital scale	6
R-18	ECG (portable)	4
R-19	Electric surgical unit	3
R-20	Emergency trolley	2
R-21	Examination light	7
R-22	Film developer	2
R-23	X-ray Unit (general, analog)	1
R-24	Centrifuge (hematocrit)	2
R-25	Hematology analyzer A	1
R-26	Hematology analyzer B	1
R-27	High pressure steam sterilizer	2
R-28	ICU bed	16
R-29	Incubator	2
R-30	Infant incubator	30
R-31	Neonatale treatment table	3
R-32	Infusion pump (infant)	4
R-33	Instrument cart	7
R-34	Microscope	4
R-35	CT Scannor (multislice helical )	1
R-36	Operation table (electrical)	3
R-37	Patient monitor (IBP)	2

## Equipment List (Raqqah)

ANNEX

Project No.	Description	Q'ty
R-38	Patient monitor (infant, standard)	17
R-39	Phototherapy unit	24
R-40	Pulse oxymeter (portable)	3
R-41	Resuscitator (Ambu, infant)	12
R-42	Spectrophotometer	1
R-43	Stretcher	3
R-44	Suction pump (2 bottle)	3
R-45	Suction pump (portable)	5
R-46	Instrument set for surgery	6
R-47	Syringe pump (infant)	8
R-48	Ultrasonic nebulizer	10
R-49	Ultrasound (B/W, infant)	1
R-50	Ultrasound (color doppler, infant)	1
R-51	Urine analyzer	1
R-52	Ventilator (infant)	16
R-53	Water bath	3
R-54	Wheel chair (infant)	5
R-55	X-ray unit (fluoroscope)	1



## 6. Examination of the Requested Equipment



Appendix 6: Examination List of the Requested Equipment (Raqqa)

Req. No.	Requested Equipment	Req. Q'ty	Classification	Purpose	Necessity	Tech. Level	Operation	Maintenance	Cost	Judgment	Notes	Project No.	Planned Name of Equipment	Planned Q'ty
1	Ambulance	1	New	○	○	○	○	○	○	○	For patient transfer	R-01	Ambulance	1
2	Anesthesia apparatus with ventilator	3	New	○	○	○	○	○	○	○	1 unit in each of the 3 operating rooms	R-02	Anesthesia apparatus with ventilator	3
3	Autoclave	2	New	○	○	○	○	○	○	○	For the sterilizing room for labs on the 1st floor	R-03	Autoclave	2
4	Baby cot	20	New	○	○	○	○	○	○	○	To be made of transparent acrylic materials so that newborn babies can be easily watched	R-04	Baby cot	20
5	Baby scale	7	New	○	△	○	○	○	○	○	1 unit to be placed in each of the incubator rooms on three floors, and 1 in the consultation rooms of the out-patient clinic	R-05	Baby scale	4
6	Bed	120	New	○	△	○	○	○	○	○	For the patient wards on the 4th and 5th floors	R-06	Bed	107
7	Bedside table	120	New	○	△	○	○	○	○	○	For the patient wards on the 4th and 5th floors	R-07	Bedside table	107
8	Bilirubin meter (blood)	2	New	○	○	○	○	○	○	○	For diagnosis of neonatal jaundice; 1 unit for each of the emergency lab of the out-patient clinic and the hematology lab	R-08	Bilirubin meter (blood)	2
9	Biochemistry analyzer	1	New	○	○	○	○	○	○	○	For the biochemistry lab	R-09	Biochemistry analyzer	1
10	Blood gas analyzer	1	New	○	○	○	○	○	○	○	For the biochemistry lab; to be capable of detecting HCO <sub>3</sub> -	R-10	Blood gas analyzer	1
11	Cardiotocography	1	New	○	×	○	○	○	○	×	Obstetrics and gynecology services to be excluded from the grant aid project			
12	C-arm X-ray Unit	1	New	○	○	○	○	○	○	○	For surgical operations; to be mainly used in the operating room #1	R-11	X-ray unit (C-arm)	1
13	Ceiling lamp (1 arm)	2	New	○	○	○	○	○	○	○	To be installed in the operating rooms #1 and #2	R-12	Ceiling lamp (1 arm)	2
14	Ceiling lamp (2 arm)	1	New	○	○	○	○	○	○	○	To be installed in the operating room #3	R-13	Ceiling lamp (2 arm)	1
15	Central monitor	2	New	○	○	○	○	○	○	○	To be used for centralized control of ICU and CCU (with 8 beds each); 1 unit per room	R-14	Central monitor	2
16	Centrifuge	3	New	○	○	○	○	○	○	○	1 unit to be placed in each of the emergency lab of the out-patient clinic, the biochemistry lab and the bacteriology lab	R-15	Centrifuge	3
17	Defibrillator	5	New	○	○	○	○	○	○	○	1 unit to be placed in each of the surgery ward of the out-patient clinic, ICU, CCU and the operating rooms #1 and #2	R-16	Defibrillator	5
18	Digital scale	5	New	○	○	○	○	○	○	○	2 units for the consultation rooms of the out-patient clinic, and 1 for each of the 4 consultation rooms on the 4th and 5th floors with wards; 5 units in total	R-17	Digital scale	6
19	ECG, Portable	4	New	○	○	○	○	○	○	○	1 unit for the consultation room of the out-patient clinic, 1 for the consultation room of the ward, 1 each for ICU and CCU; 4 units in total	R-18	ECG (portable)	4
20	Electric surgical unit	3	New	○	○	○	○	○	○	○	1 unit for each of the operating rooms #1 to #3	R-19	Electric surgical unit	3
			New	○	○	○	○	○	○	○	To be placed in the emergency department	R-20	Emergency trolley	2
21	Examination light	4	New	○	○	○	○	○	○	○	3 units to be placed in the consultation rooms of the out-patient clinic, 2 in the surgery department, and 1 in each of the out-patient thoracic department and the out-patient cranial nerve department	R-21	Examination light	7
22	Fetus doppler	1	New	○	×	○	○	○	○	×	Obstetrics and gynecology services to be excluded from the grant aid project			
23	Film developer	2	New	○	○	○	○	○	○	○	2 units to be prepared for the 2 film processing laboratories that will be constructed on the 1st and 2nd floors	R-22	Film developer	2
24	General X-ray Unit	1	New	○	○	○	○	○	○	○	To be used in the plain X-ray room on the 2nd floor	R-23	X-ray Unit (general, analog)	1
25	Hematocrit centrifuge	2	New	○	○	○	○	○	○	○	1 unit each for the emergency lab of the out-patient clinic and the hematology lab	R-24	Centrifuge (hematocrit)	2
26	Hematology analyzer	2	New	○	○	○	○	○	○	○	To be capable of providing 3-part WBC differential count (basic specs); 1 unit for the emergency lab of the out-patient clinic	R-25	Hematology analyzer A	1
			New	○	○	○	○	○	○	○	To be capable of providing 5-part WBC differential count; 1 unit for the hematology lab	R-26	Hematology analyzer B	1
27	High pressure steam sterilizer, automatic	2	New	○	○	○	○	○	○	○	390-500 L capacity; water softener to be attached	R-27	High pressure steam sterilizer	2
28	ICU Bed	16	New	○	○	○	○	○	○	○	For ICU (8 beds) and CCU (8 beds)	R-28	ICU bed	16
29	Incubator	2	New	○	○	○	○	○	○	○	2 units for the bacteriology lab	R-29	Incubator	2
30	Infant Incubator	50	New	○	△	○	○	○	○	○	Each room can have 10 units. A total of 30 units to be prepared for 3 rooms.	R-30	Infant incubator	30
31	Infant warmer	4	New	○	△	○	○	○	○	○	1 unit for each incubator room; 3 in total	R-31	Neonatale treatment table	3
32	Infusion Pump	4	New	○	○	○	○	○	○	○	2 units each for ICU (8 beds) and CCU (8 beds)	R-32	Infusion pump (infant)	4
33	Instrument cart	8	New	○	△	○	○	○	○	○	4 units for wards (120 beds) and 1 each for the operating rooms #1 to #3; 7 units in total	R-33	Instrument cart	7

Appendix 6: Examination List of the Requested Equipment (Raqqa)

Req. No.	Requested Equipment	Req. Q'ty	Classification	Purpose	Necessity	Tech. Level	Operation	Maintenance	Cost	Judgment	Notes	Project No.	Planned Name of Equipment	Planned Q'ty
34	IV stand	120	New	○	○	○	○	○	○	×	To be removed as this item is included in bed components			
35	Ligasure	1	New	○	○	○	○	×	○	×	To be excluded as there is only one manufacturer that produces products whose spec is at the required level and bidding might not be fairly conducted			
36	Microscope	4	New	○	○	○	○	○	○	○	1 unit each for the emergency lab of the out-patient clinic, the hematology lab, the bacteriology lab and the pathology lab	R-34	Microscope	4
37	Multislice Helical CT Scanner	1	New	○	○	○	○	○	○	○	64-slice scanner for diagnosis of cardiac anomaly of children	R-35	CT Scannor (multislice helical )	1
38	Operation table (electrical)	3	New	○	○	○	○	○	○	○	1 unit each for the operating rooms #1 to #3	R-36	Operation table (electrical)	3
39	Patient monitor (IBP)	2	New	○	○	○	○	○	○	○	1 unit each for ICU (8 beds) and CCU (8 beds)	R-37	Patient monitor (IBP)	2
40	Patient monitor (standard)	17	New	○	○	○	○	○	○	○	7 units each for ICU (8 beds) and CCU (8 beds), and 1 each for the operating rooms #1 to #3; 17 units in total	R-38	Patient monitor (infant, standard)	17
41	Phototherapy unit	3	New	○	△	○	○	○	○	○	For treatment of neonatal jaundice; 8 units for each of the 3 incubator rooms (30 beds). 24 units in total	R-39	Phototherapy unit	24
42	Pulse Oxymeter (portable)	3	New	○	○	○	○	○	○	○	1 unit each for the operating rooms #1 to #3	R-40	Pulse oxymeter (portable)	3
43	Resuscitator, Ambu (child)	8	New	○	△	○	○	○	○	○	2 units each for the consultation room of the out-patient clinic, the pediatric ward and the incubator room, and 1 each for ICU and CCU: 8 units in total	R-41	Resuscitator (Ambu, infant)	12
44	Resuscitator, Jackson Rees (baby)	2	New	○	○	○	○	×	○	×	To be excluded as there is only one manufacturer that produces products whose spec is at the required level and bidding might not be fairly conducted			
45	Resuscitator, Jackson Rees (child)	10	New	○	○	○	○	×	○	×	To be excluded as there is only one manufacturer that produces products whose spec is at the required level and bidding might not be fairly conducted			
46	Spectrophotometer	1	New	○	○	○	○	○	○	○	To be placed in the emergency lab of the out-patient clinic	R-42	Spectrophotometer	1
47	Stretcher	3	New	○	○	○	○	○	○	○	1 unit each for the operating rooms #1 to #3	R-43	Stretcher	3
48	Suction pump (2 bottle)	3	New	○	○	○	○	○	○	○	For operations; 1 unit each for the operating rooms #1 to #3	R-44	Suction pump (2 bottle)	3
49	Suction pump (portable)	3	New	○	△	○	○	○	○	○	For emergency suction; 1 unit for the consultation room of the out-patient clinic and 2 for wards	R-45	Suction pump (portable)	5
50	Surgical instrument set	3	New	○	△	○	○	○	○	○	In consideration of sterilization process, 2 sets each to be prepared for the operating rooms #1 to #3	R-46	Instrument set for surgery	6
51	Syringe Pump	8	New	○	○	○	○	○	○	○	4 units each for ICU (8 beds) and CCU (8 beds)	R-47	Syringe pump (infant)	8
52	Ultrasonic nebulizer	10	New	○	○	○	○	○	○	○	2 units for the thoracic surgery out-patient department of the out-patient clinic and 2 each for the 4 consultation rooms of wards: 10 units in total	R-48	Ultrasonic nebulizer	10
53	Ultrasound, B/W, Pediatric	1	New	○	○	○	○	○	○	○	1 unit for the consultation rooms of the out-patient clinic	R-49	Ultrasound (B/W, infant)	1
54	Ultrasound, Color Doppler (pediatric)	1	New	○	○	○	○	○	○	○	To be placed in CCU for heart patients	R-50	Ultrasound (color doppler, infant)	1
55	Urine analyzer	2	New	○	△	○	○	○	○	○	For screening of childhood diabetes	R-51	Urine analyzer	1
56	Vacuum extractor	1	New	○	×	○	○	○	○	×	Obstetrics and gynecology services to be excluded from the grant aid project			
57	Ventilator (infant)	18	New	○	△	○	○	○	○	○	8 units each for ICU (8 beds) and CCU (8 beds)	R-52	Ventilator (infant)	16
58	Water bath	3	New	○	○	○	○	○	○	○	1 unit each for the emergency lab of the out-patient clinic, the biochemistry lab and the hematology lab	R-53	Water bath	3
59	Wheel chair (pediatric)	5	New	○	○	○	○	○	○	○	1 unit for the emergency department and 5 for wards	R-54	Wheel chair (infant)	5
60	X-ray Fluoroscope, digital	1	New	○	○	○	○	○	○	○	For the fluoroscopy room on the 3rd floor for fluoroscopy of digestive organs	R-55	X-ray unit (fluoroscope)	1

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Appendix 6: Examination List of the Requested Equipment (Deir- ez-Zor)

Req. No.	Requested Equipment	Req. Q'ty	Classification	Purpose	Necessity	Tech. Level	Operations	Maintenance	Cost	Judgment	Notes	Project No.	Planned Name of Equipment	Planned Q'ty
1	Anesthesia apparatus with ventilator	2	Add	○	○	○	○	○	○	○	1 unit each to be placed in the two pediatric operating rooms	D-01	Anesthesia apparatus with vent	2
2	Baby cot	17	New	○	○	○	○	○	○	○	16 units to be placed in the newborn babies room of the delivery ward and 1 in NICU	D-02	Baby cot	17
3	Baby scale	3	Add	○	○	○	○	○	○	○	1 unit to be placed in the incubator room, 1 in ICU and 1 in the pediatric consultation room of the emergency out-patient ward; 3 units in total	D-03	Baby scale	3
4	Bed	78	Add	○	○	○	○	○	○	○	12 beds to be added in the pediatric ward (70 beds) and 66 to be placed in the newly-created obstetrics and gynecology ward (66 beds)	D-04	Bed	78
5	Bedside table	78	Add	○	○	○	○	○	○	○	Same number as beds	D-05	Bedside table	78
6	Bilirubin meter (blood)	1	New	○	○	○	○	○	○	○	To be used for diagnosis in the in-patient lab of the emergency out-patient ward	D-06	Bilirubin meter (blood)	1
7	Bilirubin meter (skin)	2	New	○	○	○	○	○	○	○	To be used for screening in the incubator room and the out-patient lab of the emergency out-patient ward	D-07	Bilirubin meter (skin)	2
8	Biochemistry analyzer	1	Rep	○	○	○	○	○	○	○	Processing capability around 400 tests per hour	D-08	Biochemistry analyzer	1
9	Blood gas analyzer	1	Add	○	○	○	○	○	○	○	Analyzer capable of detecting HCO3- to be installed in the emergency lab	D-09	Blood gas analyzer	1
10	Cabinet	13	Add	○	○	○	○	○	○	○	1 unit per room to be installed in 2 pediatric operating rooms, 3 obstetrics and gynecology operating rooms, 2 consultation rooms of the delivery ward and 2 consultation rooms of the emergency out-patient ward; 2 to be installed in the pediatric ward (18 rooms) and 2 in the delivery ward (1 room)	D-10	Cabinet	13
11	Caesarean instrument set	2	Add	○	○	○	○	○	○	○	To be used in the obstetrics and gynecology operating room	D-11	Instrument set for caesarean op	2
12	Cardiotocography	10	Rep/Add	○	△	○	○	○	○	○	6 labor and fetal monitors and 4 fetal doppler monitors for the delivery room (4 beds) and the ward (6 beds) of the obstetrics and gynecology	D-12	Cardiotocography	6
13	Ceiling lamp (2 arm)	2	Add	○	○	○	○	○	○	○	1 unit to be installed in each of the two pediatric operating rooms	D-13	Ceiling lamp (2 arm)	2
14	Centrifuge	2	Rep	○	○	○	○	○	○	○	1 unit each for the in-patient lab and the emergency lab of the emergency out-patient ward to replace old existing ones	D-14	Centrifuge	2
15	Colposcope	2	New	○	△	○	○	○	○	○	1 unit to be placed in each of the two consultation rooms of the delivery ward	D-15	Colposcope	1
16	Curettage set	2	Rep	○	○	○	○	○	○	○	To be used in the obstetrics and gynecology operating room	D-16	Instrument set for curettage	2
17	Defibrillator	5	Add	○	△	○	○	○	○	○	1 unit to be placed in each ICU room, each operating room and the emergency ward	D-17	Defibrillator	6
18	Delivery instrument set	8	Add	○	○	○	○	○	○	○	To be used in the delivery room (4 bed) of the delivery ward	D-18	Instrument set for delivery	8
19	Delivery table	4	Add	○	○	○	○	○	○	○	To be used in the delivery room (4 bed) of the delivery ward	D-19	Delivery table	4
20	Digital scale	6	Rep	○	○	○	○	○	○	○	2 units for the pediatric ward, 2 for the obstetrics and gynecology ward and 2 for the consultation rooms (pediatric/obstetrics and gynecology) of the emergency out-patient ward	D-20	Digital scale	6
21	ECG, Portable	4	Add	○	○	○	○	○	○	○	1 unit for the pediatric ICU, 1 for obstetrics and gynecology ICU, 1 for the pediatric consultation room of the emergency out-patient ward and 1 for the obstetrics and gynecology consultation room of the same ward	D-21	ECG (portable)	4
22	Electric surgical unit	2	Add	○	○	○	○	○	○	○	1 unit each for the two pediatric operating rooms	D-22	Electric surgical unit	2
23	Emergency trolley	2	New	○	○	○	○	○	○	○	2 units for the consultation rooms (pediatric/obstetrics and gynecology) of the emergency out-patient ward	D-23	Neonatal treatment table	2
24	Examination light	8	Add	○	△	○	○	○	○	○	2 units for the pediatric ward, 4 for the delivery room of the delivery ward, 2 for the consultation room of the delivery ward and 2 for the consultation rooms (pediatric/obstetrics and gynecology) of the emergency out-patient ward	D-24	Examination light	10
25	Fetus doppler	6	Add	○	△	○	○	○	○	○	6 labor and fetal monitors and 4 fetal doppler monitors for the delivery room (4 beds) and the ward (6 beds) of the obstetrics and gynecology	D-25	Fetus doppler	4
26	Film developper	1	Rep	○	○	○	○	○	○	○	Existing equipment (AFP product) made in 2003 to be replaced	D-26	Film developper	1
27	Film viewer (wall mount)	2	Add	○	○	○	○	○	○	○	1 unit to be placed in each of the fluoroscopy room and the consultation room of the emergency out-patient ward	D-27	Film viewer (wall mount)	2

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Appendix 6: Examination List of the Requested Equipment (Deir-ez-Zor)

Req. No.	Requested Equipment	Req. Q'ty	Classification	Purpose	Nece sity	Tech Leve l	Oper ation s	Main tena nce	Cost	Judg eme nt	Notes	Project No.	Planned Name of Equipment	Planned Q'ty
28	General gynecological operation instrument	1	Add	○	○	○	○	○	○	○	To be used in the obstetrics and gynecology operating room	D-28	Instrument set for gynecology	1
			New	○	○	○	○	○	○	○	To be used in the obstetrics and gynecology operating room	D-29	Instrument set for hysterectomy	2
29	Gynecology treatment table	2	New	○	○	○	○	○	○	○	2 units to be installed in the 2 consultation rooms of the delivery ward	D-30	Gynecology treatment table	2
30	Hematocrit centrifuge	2	Add	○	○	○	○	○	○	○	1 unit to be placed in each of the in-patient lab (4 rooms) and the emergency lab (1 room) of the emergency out-patient ward	D-31	Centrifuge (hematocrit)	2
31	Hematology analyzer	1	Add	○	○	○	○	○	○	○	Analyzer capable of providing 5-part white blood cell differential count to be placed in the in-patient lab room of the emergency out-patient ward	D-32	Hematology analyzer B	1
32	High pressure steam sterilizer, automatic	2	Add	○	○	○	○	○	○	○	2 units of the same scale as the existing ones to be placed in the 2 pediatric operating rooms	D-33	High pressure steam sterilizer	2
33	Hormone analyzer	1	New	x	○	○	○	○	○	x	To be excluded as it does not serve the purpose of this project			
34	ICU Bed	10	New	○	○	○	○	○	○	○	To be placed in the pediatric ICU (4 beds), the obstetrics and gynecology ICU (4 beds) and the delivery ward ICU (2 beds)	D-34	ICU bed	10
35	Incubator	1	Rep	○	○	○	○	○	○	○	1 unit to be placed in the in-patient lab (4 rooms) of the emergency out-patient ward	D-35	Incubator	1
36	Infant Incubator	10	Rep/Add	○	○	○	○	○	○	○	To make sure there will be 20 units including the 10 existing units in the incubator room	D-36	Infant incubator	10
37	Infant warmer	4	Rep/Add	○	○	○	○	○	○	○	1 unit to be placed in NICU (2 beds), 2 in the delivery room of the delivery ward and 1 in the new born babies room in the delivery ward	D-37	Neonatal treatment table	4
38	Infusion Pump	8	Add	○	△	○	○	○	○	○	For children; 2 units to be placed in the pediatric ICU	D-38	Infusion pump (infant)	2
				○	○	○	○	○	○	○	For adults; 4 units to be placed in the obstetrics and gynecology ICU and 2 in the delivery ICU	D-39	Infusion pump (adult)	6
39	Instrument cart	21	Add	○	○	○	○	○	○	○	6 units to be placed in the pediatric ward (18 rooms), 2 in the pediatric operating rooms (2 rooms), 6 in the obstetrics and gynecology ward (24 rooms), 3 in the 3 obstetrics and gynecology operating rooms and 4 in the 4 delivery rooms - 21 units in total	D-40	Instrument cart	21
40	IV stand	78	Add	○	○	○	○	○	○	x	To be removed as this items is included in bed components			
41	Labor bed	6	New	○	○	○	○	○	○	○	6 units to be placed in the delivery ward (6 beds)	D-41	Labor bed	6
42	Medical refrigerator	6	Add	○	○	○	○	○	○	○	2 units each to be placed in the pediatric ward and the obstetrics and gynecology ward, 1 each in the in-patient lab and the emergency lab of the emergency out-patient ward; 6 units in total	D-42	Medical refrigerator	6
43	Microscope	3	Rep/Add	○	○	○	○	○	○	○	2 units to be placed in the in-patient lab (4 rooms) and 1 in the emergency lab (1 room) of the emergency out-patient ward	D-43	Microscope	3
44	Operation table	2	Add	○	○	○	○	○	○	○	1 unit to be installed in each of the 2 pediatric operating rooms	D-44	Operation table (manual)	2
45	Patient monitor (adult, standard)	6	Add	○	○	○	○	○	○	○	Standard specs to monitor NIBP, ECG, heart rate and body temperature; 4 units to be placed in the obstetrics and gynecology ICU and 2 in the	D-45	Patient monitor (adult, standard)	6
46	Patient monitor (Standard + CO2)	2	Add	○	○	○	○	○	○	○	To monitor CO2 in addition to the above-described standard items; 2 units to be placed in the pediatric operating rooms	D-46	Patient monitor (infant, standard)	2
47	Patient monitor (standard)	6	Add	○	○	○	○	○	○	○	Standard specs to monitor NIBP, ECG, heart rate and body temperature; 6 units to be placed in the NICU and the pediatric ICU	D-47	Patient monitor (infant, standard)	6
48	Phototherapy unit	20	Add	○	△	○	○	○	○	○	To make sure there will be 20 units including the 3 existing units	D-48	Phototherapy unit	17
49	Pulse oxymeter	22	Add	○	○	○	○	○	○	○	22 units to be placed in the incubator room (20 beds) and the 2 pediatric operating rooms	D-49	Pulse oxymeter (bedside)	22
50	Resuscitator, Ambu (adult)	5	Add	○	○	○	○	○	○	○	For adults; 3 units to be placed in the obstetrics and gynecology operating room, 1 in the obstetrics and gynecology ICU and 1 in the	D-50	Resuscitator (Ambu, adult)	5
51	Resuscitator, Ambu (child)	13	Add	○	○	○	○	○	○	○	For children; 2 units to be placed in the incubator room, 2 in the NICU, 2 in the pediatric ICU for infants aged 0-1 year, 1 in the pediatric ICU for patients aged 1-15 years, 2 in the pediatric operating room, 2 in the delivery room and 2 in the newborn babies room of the delivery ward; 13 in total	D-51	Resuscitator (Ambu, infant)	13

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Appendix 6: Examination List of the Requested Equipment (Deir-ez-Zor)

Req. No.	Requested Equipment	Req. Q'ty	Classification	Purpose	Nece sity	Tech Leve ls	Oper ation s	Main tena nce	Cost	Judg eme nt	Notes	Project No.	Planned Name of Equipment	Planned Q'ty
52	Resuscitator, Jackson Lee's (child)	7	Add	○	○	○	○	×	○	×	To be excluded as there is only one manufacturer that produces products whose spec is at the required level and bidding might not be fairly			
53	Small and large vaginal speculum	2	Add	○	○	○	○	○	○	○	To be used in the consultation room of the delivery ward	D-52	Vaginal speculum set	2
54	Spectrophotometer	2	Rep	○	○	○	○	○	○	○	1 unit each to be placed in the in-patient lab and the emergency lab of the emergency out-patient ward	D-53	Spectrophotometer	2
55	Sphygmomanometer	6	Add	○	△	○	○	○	○	○	For children; 2 units to be placed in the pediatric ward, 1 in the consultation room of the emergency out-patient department: 3 in total	D-54	Sphygmomanometer (infant)	3
				○	△	○	○	○	○	○	For adults; 2 units to be placed in the obstetrics and gynecology ward, 2 in the delivery ward, 2 in the consultation room of the delivery ward, and 1 in the obstetrics and gynecology consultation room of the emergency out-patient ward: 7 in total	D-55	Sphygmomanometer (adult)	7
56	Stethoscope	10	Rep	○	×	○	○	○	○	×	To be excluded as this item can be purchased by Syrian parties			
57	Stretcher	2	Add	○	○	○	○	○	○	○	For patient transfer in the hospital; 2 units to be placed in the pediatric operating rooms	D-56	Stretcher	2
58	Suction pump (2 bottle)	5	Add	○	○	○	○	○	○	○	For operations; 2 to be placed in the pediatric operating rooms and 3 in the obstetrics and gynecology operating room	D-57	Suction pump (2 bottle)	5
59	Suction pump (portable)	12	Add	○	○	○	○	○	○	○	To be mainly used for suction of sputum and nasal discharge; 6 units to be placed in the pediatric ward, 2 in the obstetrics and gynecology ward, 2 in the delivery room and 2 in the consultation room of the emergency delivery ward: 12 units in total	D-58	Suction pump (portable)	12
60	Surgical instrument set	2	Add	○	○	○	○	○	○	○	To be used in the pediatric operating rooms	D-59	Instrument set for surgery	2
61	Syringe Pump	16	Add	○	△	○	○	○	○	○	For children; 2 to be placed in NICU, 4 in ICU, 2 in operating rooms and 2 in the newborn babies room of the delivery ward: 10 units in total	D-60	Syringe pump (infant)	10
				○	△	○	○	○	○	○	For adults; 4 units to be placed in the obstetrics and gynecology ICU and 2 in the delivery ICU: 6 units in total	D-61	Syringe pump (adult)	6
62	Thermometer	26	Add	○	×	○	○	○	○	×	To be excluded as this item can be purchased by Syrian parties			
63	Ultrasonic nebulizer	22	Add	○	△	○	○	○	○	○	1 unit for every 2 pediatric rooms (18 rooms) and 1 in the pediatric consultation room of the emergency out-patient ward	D-62	Ultrasonic nebulizer	10
64	Ultrasound, B/W (OB/GY)	2	Rep/Add	○	○	○	○	○	○	○	To be placed in the 2 consultation rooms of the delivery ward	D-63	Ultrasound (B/W, OB/GY)	2
65	Ultrasound, Color Doppler (pediatric)	1	New	○	○	○	○	○	○	○	To be used in the pediatric ward; Probes for heart, abdomen and surface skin to be attached	D-64	Ultrasound (color doppler, infant)	1
66	Vacuum extractor	2	Add	○	○	○	○	○	○	○	2 units to be placed for the 4 delivery rooms	D-65	Vacuum extractor	2
67	Ventilator (adult)	2	Add	○	○	○	○	○	○	○	2 units to be placed in the obstetrics and gynecology ICU (4 beds)	D-66	Ventilator (adult)	2
68	Ventilator (infant)	6	Add	○	○	○	○	○	○	○	2 units to be placed in NICU (2 beds) and 4 in pediatric ICU (4 beds)	D-67	Ventilator (infant)	6
69	Wheel chair (adult)	11	Add	○	○	○	○	○	○	○	For adults; 6 chairs for the obstetrics and gynecology ward (24 rooms), 1 for the 3 obstetrics and gynecology operating rooms, 2 for the 4 delivery rooms and 2 for the obstetrics and gynecology consultation room of the emergency out-patient ward: 11 chairs in total	D-68	Wheel chair (adult)	11
70	Wheel chair (pediatric)	9	Add	○	○	○	○	○	○	○	For children; 6 chairs for the pediatric ward (18 rooms), 1 for the 2 pediatric operating rooms and 1 for the pediatric consultation room of the emergency out-patient ward: 9 chairs in total	D-69	Wheel chair (infant)	9
71	X-ray Fluoroscope (analogue)	1	New	○	○	○	○	○	○	○	Existing general X-ray unit (floor type, Shimadzu product) to be replaced with a fluoroscopy system	D-70	X-ray unit (fluoroscope)	1
72	X-ray Unit (mobile)	1	Rep	○	○	○	○	○	○	○	Mobile type for general X-ray exam	D-71	X-ray unit (mobile)	1

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Appendix 6: Examination List of the Requested Equipment (Hasaka)

Req. No.	Requested Equipment	Req. Q'ty	Classification	Purpose	Necessity	Tech. Level	Operation	Maintenance	Maintenance	Judgement	Notes	Project No.	Planned Name of Equipment	Planned Q'ty
1	Baby scale	2	Add	○	○	○	○	○	○	○	1 unit each to be placed in the incubator room and the emergency out-patient ward	H-01	Baby scale	2
2	Bed	12	Rep	○	△	○	○	○	○	○	6 beds for the thalassemia room and 6 for the isolation ward were requested, but no new beds required for the thalassemia room, where there are beds already. New beds to be prepared only for the isolation ward.	H-02	Bed	6
3	Bedside table	12	Rep	○	△	○	○	○	○	○	Same number as beds	H-03	Bedside table	6
4	Bilirubin meter (blood)	1	Rep	○	○	○	○	○	○	○	Existing Japanese equipment (APEL product) to be replaced	H-04	Bilirubin meter (blood)	1
5	Bilirubin meter (skin)	3	New	○	○	○	○	○	○	○	For screening of neonatal jaundice; 1 unit to be placed in each of the emergency out-patient ward, the incubator room and ICU	H-05	Bilirubin meter (skin)	3
6	Biochemistry analyzer	1	New	○	○	○	○	○	○	○	To be placed in the lab that will be newly constructed	H-06	Biochemistry analyzer	1
7	Blood gas analyzer	1	New	○	○	○	○	○	○	○	Analyzer capable of detecting HCO3- to be placed in the lab that will be newly constructed	H-07	Blood gas analyzer	1
8	Cabinet	3	Rep	○	△	○	○	○	○	○	This item was requested for ICU, the pediatric ward and the emergency out-patient ward, but the isolation ward also needs one. 1 cabinet each, a total of 4 cabinets, to be installed in these rooms	H-08	Cabinet	4
9	Centrifuge (blood)	1	Rep	○	○	○	○	○	○	○	Currently all centrifugal separation processes done with 1 machine (Hettich product), but 1 each for blood and urine to be prepared	H-09	Centrifuge (blood)	1
10	Centrifuge (urine)	1	Rep	○	○	○	○	○	○	○	Currently all centrifugal separation processes done with 1 machine (Hettich product), but 1 each for blood and urine to be prepared	H-10	Centrifuge (urine)	1
11	Defibrillator	3	New	○	○	○	○	○	○	○	1 unit to be placed in each of ICU, the nurse station and the emergency out-patient ward	H-11	Defibrillator	3
12	Digital scale	2	Rep	○	○	○	○	○	○	○	1 unit to be placed in each of the emergency out-patient ward and the thalassemia room	H-12	Digital scale	2
13	ECG, Portable	2	New	○	○	○	○	○	○	○	1 unit to be placed in each of ICU and the emergency out-patient ward	H-13	ECG (portable)	2
14	Emergency trolley	1	New	○	○	○	○	○	○	○	1 unit to be placed in the emergency out-patient ward	H-14	Emergency trolley	1
15	Examination light	1	Rep	○	○	○	○	○	○	○	1 unit to be placed in the emergency out-patient ward	H-15	Examination light	1
16	Film developer	1	Rep	○	○	○	○	○	○	○	Dark room type shall be planned.	H-16	Film developer	1
17	Film viewer (mobile)	1	New	○	○	○	○	○	○	○	1 unit for ICU that conducts infection control	H-17	Film viewer (mobile)	1
18	Film viewer (wall mount)	1	Rep	○	○	○	○	○	○	○	For emergency patients; 1 unit for the emergency out-patient ward	H-18	Film viewer (wall mount)	1
19	Hematocrit centrifuge	1	Rep	○	○	○	○	○	○	○	Existing unit (Hettich product) to be replaced	H-19	Centrifuge (hematocrit)	1
20	Hematology analyzer	1	New	○	○	○	○	○	○	○	To be placed in the lab that will be newly constructed	H-20	Hematology analyzer A	1
21	ICU Bed	2	New	○	○	○	○	○	○	○	2 beds for pediatric patients who need intensive care in ICU	H-21	ICU bed	2
22	Incubator	1	New	○	○	○	○	○	○	○	To be placed in the lab that will be newly constructed	H-22	Incubator	1
23	Infant Incubator	10	Rep/Add	○	○	○	○	○	○	○	To make sure there will be 15 units including some of the 6 existing units (Drager products); 2 more to be newly purchased for ICU	H-23	Infant incubator	10

Appendix 6: Examination List of the Requested Equipment (Hasaka)

Req. No.	Requested Equipment	Req. Q'ty	Classification	Purpose	Necessity	Tech. Level	Operation	Maintenance	Maintenance	Judgement	Notes	Project No.	Planned Name of Equipment	Planned Q'ty
24	Infant warmer	2	New	○	○	○	○	○	○	○	Should allow easy neonatal treatment as this item is requested for ICU	H-24	Neonatale treatment table	2
25	Infusion Pump	4	Rep	○	○	○	○	○	○	○	For ICU (4 beds)	H-25	Infusion pump (infant)	4
26	Instrument cart	8	Rep	○	△	○	○	○	○	○	8 units were requested, but 1 for ICU, 2 for the pediatric ward and 1 for the isolation ward, a total of 4 carts, to be	H-26	Instrument cart	4
27	IV stand	12	Rep	○	△	○	○	○	○	×	To be removed as this item is included in bed components			
28	Medical refrigerator	1	Rep	○	○	○	○	○	○	○	To be placed in the nurse station for patients in wards	H-27	Medical refrigerator	1
29	Microscope	2	Rep/Add	○	○	○	○	○	○	○	New microscopes to replace and be added to the existing ones (Olympus products); 1 unit each to be placed in two new labs	H-28	Microscope	2
30	Mobile incubator	1	New	○	○	○	○	○	○	○	For patient transport to/from the national hospital	H-29	Mobile incubator	1
31	Patient monitor (standard)	4	Rep	○	○	○	○	○	○	○	To be placed in ICU (4 beds)	H-30	Patient monitor (infant, standard)	4
32	Phototherapy unit	5	Add	○	△	○	○	○	○	○	4 new units to be added to the 6 existing ones so that there will be 10 in the incubator room	H-31	Phototherapy unit	4
33	Pulse oxymeter (portable)	13	New	○	○	○	○	○	○	○	To be placed in the incubator room, ICU and wards	H-32	Pulse oxymeter (portable)	13
34	Resuscitation bag (Jackson Lee's)	3	New	○	○	○	○	×	○	×	To be excluded as there is only one manufacturer that produces products whose spec is at the required level and bidding might not be fairly conducted			
35	Resuscitator, Ambu	3	Rep	○	△	○	○	○	○	○	1 unit each to be placed in ICU, the nurse station and the emergency out-patient ward; same number as the Jackson-Rees	H-33	Resuscitator (Ambu, infant)	6
36	Spectrophotometer	1	Rep	○	○	○	○	○	○	○	To replace existing units (Prime products)	H-34	Spectrophotometer	1
37	Sphygmomanometer	8	Rep	○	○	○	○	○	○	○	1 unit each for the 6 patient rooms, 1 for the isolation ward and 1 for the emergency out-patient ward; 8 units in total	H-35	Sphygmomanometer	8
38	Steam sterilizer	1	Rep	○	○	○	○	○	○	○	1 unit to be placed in the emergency out-patient ward	H-36	Steam sterilizer	1
39	Stethoscope	30	Add	○	×	○	○	○	○	×	To be excluded as this item can be purchased by Syrian parties			
40	Suction pump (portable)	11	Rep	○	△	○	○	○	○	○	1 unit to be placed in ICU, 2 in wards, 1 in the isolation ward and 1 in the emergency out-patient ward; 5 units in total	H-37	Suction pump (portable)	5
41	Syringe Pump	19	Rep	○	○	○	○	○	○	○	1 unit per bed for the incubator room (15 beds) and ICU (4 beds)	H-38	Syringe pump (infant)	19
42	Ultrasonic nebulizer	7	New	○	△	○	○	○	○	○	3 units for wards (6 rooms), 1 for the isolation room and 2 each for the two emergency out-patient rooms; 6 units in total	H-39	Ultrasonic nebulizer	6
43	Ultrasound, B/W (pediatric)	1	New	○	×	○	○	○	○	×	To be excluded as color doppler will be prepared and B/W doppler will not be necessary			
44	Ultrasound, Color Doppler (pediatric)	1	Rep	○	○	○	○	○	○	○	Probes for pediatric patients, abdomen, surface skin and hearts to be prepared	H-40	Ultrasound (color doppler, infant)	1
45	Ventilator (infant)	3	Add	○	○	○	○	○	○	○	4 units to be placed in ICU (4 beds), including the existing one	H-41	Ventilator (infant)	3
46	Wheel chair (adult)	5	Rep	○	○	○	○	○	○	○	1 chair for ICU, 3 for wards and 1 for the emergency out-patient ward; 5 chairs in total	H-42	Wheel chair (infant)	5
47	X-ray Fluoroscope (digital)	1	New	○	○	○	○	○	○	○	A fluoroscopy unit to replace the existing ceiling-mounted X-ray unit (GE product)	H-43	X-ray unit (fluoroscope)	1
48	X-ray Unit (mobile)	1	Rep	○	○	○	○	○	○	○	To replace the mobile unit borrowed from the national hospital	H-44	X-ray unit (mobile)	1

## 7. Equipment List



## Appendix 7. Equipment List (Raqqa)

Project No.	Descriptions of Equipment	Q'ty
R-01	Ambulance	1
R-02	Anesthesia apparatus with ventilator	3
R-03	Autoclave	2
R-04	Baby cot	20
R-05	Baby scale	4
R-06	Bed	107
R-07	Bedside table	107
R-08	Bilirubin meter (blood)	2
R-09	Biochemistry analyzer	1
R-10	Blood gas analyzer	1
R-11	X-ray unit (C-arm)	1
R-12	Ceiling lamp (1 arm)	2
R-13	Ceiling lamp (2 arm)	1
R-14	Central monitor	2
R-15	Centrifuge	3
R-16	Defibrillator	5
R-17	Digital scale	6
R-18	ECG (portable)	4
R-19	Electric surgical unit	3
R-20	Emergency trolley	2
R-21	Examination light	7
R-22	Film developper	2
R-23	X-ray Unit (general, analog)	1
R-24	Centrifuge (hematocrit)	2
R-25	Hematology analyzer A	1
R-26	Hematology analyzer B	1
R-27	High pressure steam sterilizer	2
R-28	ICU bed	16
R-29	Incubator	2
R-30	Infant incubator	30
R-31	Neonatale treatment table	3
R-32	Infusion pump (infant)	4
R-33	Instrument cart	7
R-34	Microscope	4
R-35	CT Scanner (multislice helical )	1
R-36	Operation table (electrical)	3
R-37	Patient monitor (IBP)	2
R-38	Patient monitor (infant, standard)	17
R-39	Phototherapy unit	24
R-40	Pulse oxymeter (portable)	3
R-41	Resuscitator (Ambu, infant)	12
R-42	Spectrophotometer	1
R-43	Stretcher	3
R-44	Suction pump (2 bottle)	3
R-45	Suction pump (portable)	5
R-46	Instrument set for surgery	6
R-47	Syringe pump (infant)	8
R-48	Ultrasonic nebulizer	10
R-49	Ultrasound (B/W, infant)	1
R-50	Ultrasound (color doppler, infant)	1
R-51	Urine analyzer	1
R-52	Ventilator (infant)	16
R-53	Water bath	3
R-54	Wheel chair (infant)	5
R-55	X-ray unit (fluoroscope)	1

Appendix 7. Equipment List (Dier-ez-Zor)

Project No.	Descriptions of Equipment	Q'ty
D-01	Anesthesia apparatus with ventilator	2
D-02	Baby cot	17
D-03	Baby scale	3
D-04	Bed	78
D-05	Bedside table	78
D-06	Bilirubin meter (blood)	1
D-07	Bilirubin meter (skin)	2
D-08	Biochemistry analyzer	1
D-09	Blood gas analyzer	1
D-10	Cabinet	13
D-11	Instrument set for caesarean operation	2
D-12	Cardiotocography	6
D-13	Ceiling lamp (2 arm)	2
D-14	Centrifuge	2
D-15	Colposcope	1
D-16	Instrument set for curettage	2
D-17	Defibrillator	6
D-18	Instrument set for delivery	8
D-19	Delivery table	4
D-20	Digital scale	6
D-21	ECG (portable)	4
D-22	Electric surgical unit	2
D-23	Emergency trolley	2
D-24	Examination light	10
D-25	Fetus doppler	4
D-26	Film developper	1
D-27	Film viewer (wall mount)	2
D-28	Instrument set for gynecology	1
D-29	Instrument set for hysterectomy	2
D-30	Gynecology treatment table	2
D-31	Centrifuge (hematocrit)	1
D-32	Hematology analyzer B	2
D-33	High pressure steam sterilizer	2
D-34	ICU bed	10
D-35	Incubator	1
D-36	Infant incubator	10
D-37	Neonatale treatment table	4
D-38	Infusion pump (infant)	2
D-39	Infusion pump (adult)	6
D-40	Instrument cart	21
D-41	Labor bed	6
D-42	Medical refrigerator	6
D-43	Microscope	3
D-44	Operation table (manual)	2
D-45	Patient monitor (adult, standard)	6
D-46	Patient monitor (infant, standard + CO2)	2
D-47	Patient monitor (infant, standard)	6
D-48	Phototherapy unit	17
D-49	Pulse oxymeter (bedside)	22
D-50	Resuscitator (Ambu, adult)	5
D-51	Resuscitator (Ambu, infant)	13
D-52	Vaginal speculum set	2
D-53	Spectrophotometer	2
D-54	Sphygmomanometer (infant)	3
D-55	Sphygmomanometer (adult)	7

Appendix 7. Equipment List (Dier-ez-Zor)

Project No.	Descriptions of Equipment	Q'ty
D-56	Stretcher	2
D-57	Suction pump (2 bottle)	5
D-58	Suction pump (portable)	12
D-59	Instrument set for surgery	2
D-60	Syringe pump (infant)	10
D-61	Syringe pump (adult)	6
D-62	Ultrasonic nebulizer	10
D-63	Ultrasound (B/W, OB/GY)	2
D-64	Ultrasound (color doppler, infant)	1
D-65	Vacuum extractor	2
D-66	Ventilator (adult)	2
D-67	Ventilator (infant)	6
D-68	Wheel chair (adult)	11
D-69	Wheel chair (infant)	9
D-70	X-ray unit (fluoroscope)	1
D-71	X-ray unit (mobile)	1

Appendix 7. Equipment List (Hasakeh)

Project No.	Descriptions of Equipment	Q'ty
H-01	Baby scale	2
H-02	Bed	6
H-03	Bedside table	6
H-04	Bilirubin meter (blood)	1
H-05	Bilirubin meter (skin)	3
H-06	Biochemistry analyzer	1
H-07	Blood gas analyzer	1
H-08	Cabinet	4
H-09	Centrifuge (blood)	1
H-10	Centrifuge (urine)	1
H-11	Defibrillator	3
H-12	Digital scale	2
H-13	ECG (portable)	2
H-14	Emergency trolley	1
H-15	Examination light	1
H-16	Film developper	1
H-17	Film viewer (mobile)	1
H-18	Film viewer (wall mount)	1
H-19	Centrifuge (hematocrit)	1
H-20	Hematology analyzer A	1
H-21	ICU bed	2
H-22	Incubator	1
H-23	Infant incubator	10
H-24	Neonatale treatment table	2
H-25	Infusion pump (infant)	4
H-26	Instrument cart	4
H-27	Medical refrigerator	1
H-28	Microscope	2
H-29	Mobile incubator	1
H-30	Patient monitor (infant, standard)	4
H-31	Phototherapy unit	4
H-32	Pulse oxymeter (portable)	13
H-33	Resuscitator (Ambu, infant)	6
H-34	Spectrophotometer	1
H-35	Sphygmomanometer	8
H-36	Steam sterilizer	1
H-37	Suction pump (portable)	5
H-38	Syringe pump (infant)	19
H-39	Ultrasonic nebulizer	6
H-40	Ultrasound (color doppler, infant)	1
H-41	Ventilator (infant)	3
H-42	Wheel chair (infant)	5
H-43	X-ray unit (fluoroscope)	1
H-44	X-ray unit (mobile)	1

## 8. Equipment Delivery List

Appendix 8. Equipment Delivery List (Raqqa)

Project No.	Description	Qty	Clinic					Emergency	Pediatric Ward	Incubator room	ICU	CCU	Operation			Laboratory					Imaging					Sterilization													
			Examination	Surgery	Chest Diseases	Neurology	ER Labo						Room 1	Room 2	Room 3	Bio Chemical	Hematology (Blood)	Bacteria	Pathology	Blood Bank	Washing & Sterilization	General X-ray	Fluoroscopy X-ray	CT	Dark Room		Ultrasound	Sterilization											
R-01	Ambulance	1						1																															
R-02	Anesthesia apparatus with ventilator	3														1	1																						
R-03	Autoclave	2																																					
R-04	Baby cot	20																																					
R-05	Baby scale	4		1																																			
R-06	Bed	107																																					
R-07	Bedside table	107																																					
R-08	Bilirubin meter (blood)	2																																					
R-09	Biochemistry analyzer	1																																					
R-10	Blood gas analyzer	1																																					
R-11	X-ray unit (C-arm)	1														1																							
R-12	Ceiling lamp (1 arm)	2															1																						
R-13	Ceiling lamp (2 arm)	1																																					
R-14	Central monitor	2										1	1																										
R-15	Centrifuge	3																																					
R-16	Defibrillator	5																																					
R-17	Digital scale	6	2							4																													
R-18	ECG (portable)	4	1							1			1																										
R-19	Electric surgical unit	3																																					
R-20	Emergency trolley	2																																					
R-21	Examination light	7	3	2	1	1																																	
R-22	Film developper	2																																					
R-23	X-ray Unit (general, analog)	1																																					
R-24	Centrifuge (hematocrit)	2																																					
R-25	Hematology analyzer A	1																																					
R-26	Hematology analyzer B	1																																					
R-27	High pressure steam sterilizer	2																																					
R-28	ICU bed	16																																					
R-29	Incubator	2																																					
R-30	Infant incubator	30																																					
R-31	Neonatal treatment table	3																																					
R-32	Infusion pump (infant)	4																																					
R-33	Instrument cart	7																																					
R-34	Microscope	4																																					
R-35	CT Scanner (multislice helical )	1																																					
R-36	Operation table (electrical)	3																																					
R-37	Patient monitor (IBP)	2																																					
R-38	Patient monitor (infant, standard)	17																																					
R-39	Phototherapy unit	24																																					
R-40	Pulse oxymeter (portable)	3																																					
R-41	Resuscitator (Ambu, infant)	12				2																																	
R-42	Spectrophotometer	1																																					
R-43	Stretcher	3																																					
R-44	Suction pump (2 bottle)	3																																					
R-45	Suction pump (portable)	5		3																																			
R-46	Instrument set for surgery	6																																					
R-47	Syringe pump (infant)	8																																					
R-48	Ultrasonic nebulizer	10				2				8																													
R-49	Ultrasound (B/W, infant)	1		1																																			
R-50	Ultrasound (color doppler, infant)	1																																					
R-51	Urine analyzer	1																																					
R-52	Ventilator (infant)	16																																					
R-53	Water bath	3																																					
R-54	Wheel chair (infant)	5																																					
R-55	X-ray unit (fluoroscope)	1																																					

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Appendix 8. Equipment Delivery List (Dier-ez-Zor)

Project No.	Descriptions of Equipment	Q'ty	Pediatric ward	Pediatric incubator	NICU	ICU 0~1yr	ICU1~15yr	Pediatric operation	Obstetrics ward	OB/GY operation	OB/GY ICU	Delivery ward	Delivery	Delivery examination	Delivery ICU	Delivery Newborn	Imagery, Fluoroscopy	Dark room	Central labo	Emergency OPD, ER labo	Emergency OPD, Pediatric examination	Emergency OPD, OB/GY examination	Sterilization
D-01	Anesthesia apparatus with ventilator	2						2															
D-02	Baby cot	17			1											16							
D-03	Baby scale	3		1		1															1		
D-04	Bed	78	12						66														
D-05	Bedside table	78	12						66														
D-06	Bilirubin meter (blood)	1																	1				
D-07	Bilirubin meter (skin)	2		1																1			
D-08	Biochemistry analyzer	1																	1				
D-09	Blood gas analyzer	1																		1			
D-10	Cabinet	13	2					2		3		2		2							1	1	
D-11	Instrument set for caesarean operation	2								2													
D-12	Cardiotocography	6										6											
D-13	Ceiling lamp (2 arm)	2						2															
D-14	Centrifuge	2																	1	1			
D-15	Colposcope	1												1									
D-16	Instrument set for curettage	2								2													
D-17	Defibrillator	6				1		1		1	1				1						1		
D-18	Instrument set for delivery	8											8										
D-19	Delivery table	4											4										
D-20	Digital scale	6	2						2												1	1	
D-21	ECG (portable)	4					1				1										1	1	
D-22	Electric surgical unit	2						2															
D-23	Emergency trolley	2																			1	1	
D-24	Examination light	10	2										4	2							1	1	
D-25	Fetus doppler	4										4											
D-26	Film developper	1																1					
D-27	Film viewer (wall mount)	2															1				1		
D-28	Instrument set for gynecology	1								1													
D-29	Instrument set for hysterectomy	2												2									
D-30	Gynecology treatment table	2																	1	1			
D-31	Centrifuge (hematocrit)	1																	1				
D-32	Hematology analyzer B	2																	2				
D-33	High pressure steam sterilizer	2								2													2
D-34	ICU bed	10				2	2				4				2								
D-35	Incubator	1																	1				
D-36	Infant incubator	10		10																			
D-37	Neonatal treatment table	4			1								2			1							
D-38	Infusion pump (infant)	2					2																
D-39	Infusion pump (adult)	6									4				2								
D-40	Instrument cart	21	6					2	6	3			4										
D-41	Labor bed	6										6											
D-42	Medical refrigerator	6	2						2										1	1			
D-43	Microscope	3																	2	1			
D-44	Operation table (manual)	2						2															
D-45	Patient monitor (adult, standard)	6									4				2								
D-46	Patient monitor (infant, standard + CO <sub>2</sub> )	2						2															
D-47	Patient monitor (infant, standard)	6			2	2	2																
D-48	Phototherapy unit	17		17																			
D-49	Pulse oxymeter (bedside)	22		20				2															
D-50	Resuscitator (Ambu, adult)	5								3	1		1										
D-51	Resuscitator (Ambu, infant)	13		2	2	2	1	2					2			2							

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Appendix 8. Equipment Delivery List (Dier-ez-Zor)

Project No.	Descriptions of Equipment	Q'ty	Pediatric ward	Pediatric incubator	NICU	ICU 0~1yr	ICU1~15yr	Pediatric operation	Obstetrics ward	OB/GY operation	OB/GY ICU	Delivery ward	Delivery	Delivery examination	Delivery ICU	Delivery Newborn	Imagery, Fluoroscopy	Dark room	Central labo	Emergency OPD, ER labo	Emergency OPD, Pediatric examination	Emergency OPD, OB/GY examination	Sterilization	
D-52	Vaginal speculum set	2												2										
D-53	Spectrophotometer	2																	1	1				
D-54	Sphygmomanometer (infant)	3	2																		1			
D-55	Sphygmomanometer (adult)	7							2			2		2								1		
D-56	Stretcher	2						2																
D-57	Suction pump (2 bottle)	5						2		3														
D-58	Suction pump (portable)	12	6						2				2								1	1		
D-59	Instrument set for surgery	2						2																
D-60	Syringe pump (infant)	10			2	2	2	2								2								
D-61	Syringe pump (adult)	6									4				2									
D-62	Ultrasonic nebulizer	10	9																		1			
D-63	Ultrasound (B/W, OB/GY)	2												2										
D-64	Ultrasound (color doppler, infant)	1	1																					
D-65	Vacuum extractor	2											2											
D-66	Ventilator (adult)	2									2													
D-67	Ventilator (infant)	6			2	2	2																	
D-68	Wheel chair (adult)	11							6	1			2									2		
D-69	Wheel chair (infant)	9	6					1													2			
D-70	X-ray unit (fluoroscope)	1															1							
D-71	X-ray unit (mobile)	1																			1			

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Appendices 3 Equipment Delivery List (Hasaka)

Project No.	Descriptions of Equipment	Q'ty	Incubator room	ICU	Thalasimia	Pediatric ward	Isolation ward	Nurse station	Labo (blood)	labo (urine)	ER OPD	X-ray (fluoroscopy)	Dark room	Ultrason d
H-01	Baby scale	2	1								1			
H-02	Bed	6					6							
H-03	Bedside table	6					6							
H-04	Bilirubin meter (blood)	1							1					
H-05	Bilirubin meter (skin)	3	1	1							1			
H-06	Biochemistry analyzer	1							1					
H-07	Blood gas analyzer	1							1					
H-08	Cabinet	4		1		1	1				1			
H-09	Centrifuge (blood)	1							1					
H-10	Centrifuge (urine)	1								1				
H-11	Defibrillator	3		1				1			1			
H-12	Digital scale	2			1						1			
H-13	ECG (portable)	2		1							1			
H-14	Emergency trolley	1									1			
H-15	Examination light	1									1			
H-16	Film developper	1											1	
H-17	Film viewer (mobile)	1		1										
H-18	Film viewer (wall mount)	1										1		
H-19	Centrifuge (hematocrit)	1							1					
H-20	Hematology analyzer A	1							1					
H-21	ICU bed	2		2										
H-22	Incubator	1							1					
H-23	Infant incubator	10	8	2										
H-24	Neonatale treatment table	2		2										
H-25	Infusion pump (infant)	4		4										
H-26	Instrument cart	4		1		2	1							
H-27	Medical refrigerator	1						1						
H-28	Microscope	2							1	1				
H-29	Mobile incubator	1									1			
H-30	Patient monitor (infant, standard)	4		4										
H-31	Phototherapy unit	4	4											

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Appendices 3 Equipment Delivery List (Hasaka)

Project No.	Descriptions of Equipment	Q'ty	Incubator room	ICU	Thalasimia	Pediatric ward	Isolation ward	Nurse station	Labo (blood)	labo (urine)	ER OPD	X-ray (fluoroscopy)	Dark room	Ultrasonound
H-32	Pulse oxymeter (portable)	13	6		3	2	1				1			
H-33	Resuscitator (Ambu, infant)	6		2				2			2			
H-34	Spectrophotometer	1							1					
H-35	Sphygmomanometer	8				6	1				1			
H-36	Steam sterilizer	1									1			
H-37	Suction pump (portable)	5		1		2	1				1			
H-38	Syringe pump (infant)	19	15	4										
H-39	Ultrasonic nebulizer	6				3	1				2			
H-40	Ultrasound (color doppler, infant)	1												1
H-41	Ventilator (infant)	3		3										
H-42	Wheel chair (infant)	5		1		3					1			
H-43	X-ray unit (fluoroscope)	1										1		
H-44	X-ray unit (mobile)	1									1			

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## 9. Operation and Maintenance Cost for the Equipment

## Appendix 9. Operation and Maintenance Cost for the Equipment (Raqqa)

Plan No.	Planned equipment (English)	Package (Packing unit)	Basis of calculation	Quantity	Unit	Unit price USD	Unit price JPY	Planned quantity	Total price	Type
R-01	Ambulance									New
	Diesel fuel	1 L	365 days * (30 km/day) / (5 km/L) = 2,190 L	2190	L	\$0.78		1	\$1,708	New
	Engine oil	1 L	Oil change every 5000 km: 365 days * (30 km/day) / 5000 km * (5l) = 10.95	10.95	L	\$5		1	\$55	New
	Filter	piece	Replace every 5000 km: 365 days * (30 km/day) / 5000 km = 2.19	3	piece	\$31		1	\$93	New
	Insurance	case (per agreement)	One-year contract	1	case	\$625		1	\$625	New
R-02	Anesthesia apparatus with ventilator									New
	Mask set	L/S: 2 types/set	1 set/year	1	set		¥5,450	3	¥16,350	New
	CO2 absorbent	5 kg/set	(500 hours/year) * (0.1 kg/hour) / (5 kg/set) = 10	10	set		¥7,700	3	¥231,000	New
R-09	Biochemistry analyzer									New
	Reagent set	600 tests/set	600 tests/year	1	set	\$50,129		1	\$50,129	New
	Recording paper	4 rolls/box	4 rolls/year	1	box	\$500		1	\$500	New
R-10	Blood gas analyzer									New
	Reagent set	900 tests/set	900 tests/year	1	set	\$4,714		1	\$4,714	New
	Recording paper	5 rolls/box	5 rolls/year	1	box	\$70		1	\$70	New
R-11	X-ray unit (C-arm)									New
	Film	100 sheets/box	260days/year * 2 persons * 2 pieces/100 = 10.4	11	box		¥41,000	1	¥451,000	New
	Annual maintenance agreement	case	One-year contract	1	case			1		New
R-12	Ceiling lamp (1 arm)									New
	Halogen lamp	8 pieces/set	1 set/ 4 months * 12 months = 3 sets	3	set		¥57,600	2	¥345,600	New
R-13	Ceiling lamp (2 arm)									New
	Halogen lamp	13 pieces/set	1 set/ 4 months * 12 months = 3 sets	3	set		¥93,600	1	¥280,800	New
R-14	Central monitor									New
	Recording paper	20 m * 10 rolls/set	365 days * (once/day) * (200 mm per recording) / ((20 m * 10 rolls)/set) = 0.365 set	1	set		¥4,700	2	¥9,400	New
R-16	Defibrillator									New
	ECG electrode	150 pieces/set	(50 cases/year) * (3 pieces/case) / (150 pieces/set) = 1 set	1	set		¥13,500	5	¥67,500	New
	Recording paper	20 m * 10 rolls/set	(50 cases/year) * (2 m/case) / (20 m * 10rolls/set) = 0.5 set	1	set		¥3,200	5	¥16,000	New
	Gel	100 g * 5/set	(50 cases/year) * (20 g/case) / (100 g * 5/set) = 2 sets	2	set		¥2,500	5	¥25,000	New
R-18	ECG (portable)									New
	Recording paper	20 m * 10 rolls/set	(700 times/year) * (0.5 m per recording) / (20 m * 10 rolls/set) = 1.75 set	2	set		¥6,400	4	¥51,200	New
	Gel	100 g * 2/set	(700 times/year) * (10 g/case) / (100 g * 2/set) = 3.5 sets	4	set		¥1,000	4	¥16,000	New
R-19	Electric surgical unit									New
	Electrode holder	1 set (used 100 times)	(100 cases/year) / (1 set/100 times) = 1 set	1	set		¥30,000	3	¥90,000	New
	Electrode set	1 piece * 10 types/set	1 set/year	1	set		¥20,000	3	¥60,000	New
R-21	Examination light									New
	Halogen lamp	1 piece	1 piece/ 4 months * 12 months = 3 pieces	3	piece		¥7,200	7	¥151,200	New
R-22	Film developper									New
	Developing solution	19 L/box	30 L/month * 12 months/19 L = 19 boxes	19	box		¥20,000	2	¥760,000	New
	Fixing solution	19 L/box	30 L/month * 12 months/19 L = 19 boxes	19	box		¥10,000	2	¥380,000	New
R-23	X-ray unit (general)									New
	Film	100 sheets/box	260 days * (10 sheets/day) / (100 sheets/box) = 26 boxes	26	box		¥41,000	1	¥1,066,000	New
	Annual maintenance agreement	case (per agreement)	One-year contract	1	case	\$1,250		1	\$1,250	New
R-24	Centrifuge (hematocrit)									New
	Capillary tube	1000 pieces/box	3 boxes/year	3	box		¥7,000	2	¥42,000	New
R-25	Hematology analyzer A									New
	Reagent and recording paper set	1 set	3000 tests/year	1	set	\$3,510		1	\$3,510	New
R-26	Hematology analyzer B									New
	Reagent and recording paper set	1 set	6000 tests/year	1	set	\$7,750		1	\$7,750	New
R-27	High pressure steam sterilizer									New
	Pre-filter element	1 set	Replaced once a year	1	set	\$1,579		2	\$3,158	New
R-30	Infant incubator									New
	Air microfilter	5 pieces/set	1 set/ 4 months * 12 months = 3 sets	3	set		¥11,500	30	¥1,035,000	New
	Pad for body temperature probe	30 pieces * 4 boxes = 1 set	1 set/ 4 months * 12 months = 3 sets	3	set		¥3,900	30	¥351,000	New
R-31	Neonatal treatment table									New
	Pad for body temperature probe	30 pieces * 4 boxes = 1 set	1 set/ 4 months * 12 months = 3 sets	3	set		¥3,900	3	¥35,100	New
R-32	Infusion pump									New
	Infusion line set	100 pieces/set	1 set/ 2 months * 12 months = 6 sets	6	set		¥15,000	4	¥360,000	New
R-34	Microscope									New
	Halogen lamp	1 piece	1 piece/year	1	piece		¥2,000	4	¥8,000	New
	Oil	50 cc/bottle	250 cc/year	5	bottle		¥3,000	4	¥60,000	New
R-35	CT Scanner (multislice helical)									New
	Dry film	100 sheets/box	(50 sheets/month) * 12 months / (100 sheets/box) = 6 boxes	6	box	\$316		1	\$1,896	New
	Annual maintenance agreement	case (per agreement)	One-year contract	1	case	\$1,250		1	\$1,250	New
R-37	Patient monitor (IBP)									New
	ECG electrode	150 pieces/set	365 days * (1 person/3 days) * (3 pieces/person) / (150 pc/set) = 2.4 sets	3	set		¥10,950	2	¥65,700	New
	Recording paper	20 m * 10 rolls/set	365 days * (once/day) * (200 mm per recording) / ((20 m * 10 rolls)/set) = 0.365 set	1	set		¥4,700	2	¥9,400	New
	IBP transducer	5 pieces/set	(20 cases/year) * (1 piece/case) / (5 pieces/set) = 4 sets	4	set		¥40,000	2	¥320,000	New
	Nose adapter	30 pieces/set	(20 cases/year) * (1 piece/case) / (5 pieces/set) = 4 sets	4	set		¥51,000	2	¥408,000	New
	Air way adapter	30 pieces/set	(20 cases/year) * (1 piece/case) / (5 pieces/set) = 4 sets	4	set		¥36,000	2	¥288,000	New
R-38	Patient monitor (infant, standard)									New
	ECG electrode	150 pieces/set	365 days * (1 person/3 days) * (3 pieces/person) / (150 pieces/set) = 2.4 sets	3	set		¥10,950	17	¥558,450	New
	Recording paper	20 m * 10 rolls/set	365 days * (once/day) * (200 mm/recordings) / ((20 m * 10 rolls)/set) = 0.365 set	1	set		¥4,700	17	¥79,900	New
R-39	Phototherapy unit									New
	Lamp	5 pieces/set	1 set/4 months * 12 months = 3 sets	3	set		¥7,500	24	¥540,000	New
	Eye mask	10 pieces each for 2 sizes/set	1 set/6 months * 12 months = 2 sets	2	set		¥1,000	24	¥48,000	New
R-41	Resusitator (Ambu, infant)									New
	Face mask (for newborn babies)	1 piece each for 2 sizes/set	1set/4 months * 12 months = 3 sets	3	set		¥4,500	7	¥94,500	New
	Face mask (for children)	1 piece each for 2 sizes/set	1set/4 months * 12 months = 3 sets	3	set		¥5,500	7	¥115,500	New
R-42	Spectrophotometer									New
	Tungsten halogen lamp	1 piece	1 piece/year	1	set	\$1,110		1	\$1,110	New
	Deuterium lamp	1 piece	1 piece/year	1	set	\$100		1	\$100	New
	Recording paper	500/box	3 rolls/year	3	box	\$50		1	\$150	New
R-44	Suction pump (2 bottle)									New
	Suction bottle with a cap	1 piece	Replaced 2 pieces/year	2	piece		¥19,500	3	¥117,000	New
	Cannula connecting hose	1 set	1 set/6 months * 12 months = 2 sets	2	set		¥3,000	3	¥18,000	New
R-45	Suction pump (portable)									New
	Suction bottle	1 piece	Replaced 1 piece/year	1	piece		¥3,800	5	¥19,000	New
	Suction tube connecting hose	1 piece	1 piece/6 months * 12 months = 2 pieces	4	piece		¥1,000	5	¥20,000	New
	Suction tube (suction catheter)	50 pieces/box	1 box/4 months * 12 months = 3 boxes	3	box		¥3,600	5	¥54,000	New
R-47	Syringe pump									New
	Disposable syringe, 10ml	100 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set		¥3,700	8	¥148,000	New

Appendix 9. Operation and Maintenance Cost for the Equipment (Raqqa)

Plan No.	Planned equipment (English)	Package (Packing unit)	Basis of calculation	Quantity	Unit	Unit price USD	Unit price JPY	Planned quantity	Total price	Type
	Disposable syringe, 20ml	50 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set		¥3,500	8	¥140,000	New
	Disposable syringe, 30ml	50 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set		¥6,000	8	¥240,000	New
	Disposable syringe, 50ml	20 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set		¥3,500	8	¥140,000	New
	Extension tube	100 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set		¥15,000	10	¥750,000	New
R-48	Ultrasonic nebulizer									New
	Bacteria filter	1 piece	1 piece/4 months * 12 months = 3 pieces	3	piece		¥15,000	10	¥450,000	New
	Diaphragm	5 pieces/box	1 piece/4 months * 12 months = 3 pieces	3	box		¥1,000	10	¥30,000	New
	Aerosol tube set	1 piece	1 piece/4 months * 12 months = 3 pieces	3	piece		¥1,700	10	¥51,000	New
	Mask for children	5 pieces/box	1 piece/4 months * 12 months = 3 pieces	3	box		¥440	10	¥13,200	New
	Mouth piece	5 pieces/box	1 piece/4 months * 12 months = 3 pieces	3	box		¥200	10	¥6,000	New
R-49	Ultrasound (BW, infant)									New
	Gel	300 g/bottle	260 days * (5 persons/day) * (10 g/usage) / (300 g/bottle) = 43 bottles	43	bottle		¥1,300	1	¥55,900	New
	Recording paper	18 m/roll	260 days * (5 persons/day) * (0.3 m/person) / (18 m/roll) = 21.6 rolls	22	roll		¥4,000	1	¥88,000	New
R-50	Ultrasound (color doppler, infant)									New
	Gel	300 g/bottle	260 days * (3 persons/day) * (10 g/usage) / (300 g/bottle) = 26 bottles	26	bottle		¥1,300	1	¥33,800	New
	Recording paper	18 m/roll	260 days * (3 persons/day) * (0.3 m/person) / (18 m/roll) = 13 rolls	13	roll		¥12,300	1	¥159,900	New
R-51	Urine analyzer									New
	Test paper	100 sheets/box	10 persons/day * 260 days = 2600 sheets	26	box		¥9,500	1	¥247,000	New
	Recording paper	6 rolls/box	10 persons/day * 260 days = 2600 cases; 2600 cases * 1/60 = 44 rolls	8	box		¥3,000	1	¥24,000	New
R-52	Ventilator (infant)									New
	ET tube set	1 tube each/set	365 days * (1 piece/person) / (4 days/person) / (7 types/set) = 13.03 sets	13	set		¥6,000	16	¥1,248,000	New
	Bacteria filter	1 sheet	1 sheet/year	1	sheet		¥17,800	16	¥284,800	New
	Face mask	1 piece each/set	1 set/year	1	set		¥5,000	16	¥80,000	New
R-55	X-ray unit (fluoroscope, digital)									New
	Film	100 sheets/box	365 days * (10 sheets/day) / (100 sheets/box) = 36.5 boxes	37	boxe		¥43,000	1	¥1,591,000	New
	Annual maintenance agreement	case (per agreement)	One-year contract	1	case	\$1,250		1	\$1,250	New
Total									¥21,582,816	

Appendix 9. Operation and Maintenance Cost for the Equipment (Dier-ez-Zor)

Plan No.	Planned equipment (English)	Package (Packing unit)	Basis of calculation	Quantity	Unit	Unit price USD	Unit price JPY	Planned Quantity	Total price	Type
D-01	Anesthesia apparatus with ventilator									Addition
	Mask set	L/S: 2 types/set	1 set/year	1	set		\$5,450	2	\$10,900	Addition
	CO2 absorbent	5 kg/set	(500 hours/year) * (0.1 kg/hour) / (5 kg/set) = 10 sets	10	set		\$7,700	2	\$154,000	Addition
D-08	Biochemistry analyzer									Renew
	Reagent set	600 tests/set	600 tests/year	1	set	\$50,129.00		1	\$50,129	Renew
	Recording paper	4 rolls/box	4 rolls/year	1	box	\$500.00		1	\$500	Renew
D-09	Blood gas analyzer									Addition
	Reagent set	900 tests/set	900 tests/year	1	set	\$4,714.00		1	\$4,714	Addition
	Recording paper	5 rolls/box	5 rolls/year	1	box	\$70.00		1	\$70	Addition
D-12	Cardiotocography									Renew/Addition
	Gel	250 mL/bottle	1 bottle (for 50 times use) * 1000 times/year = 20	20	bottle	\$1,000		6	\$120,000	Renew/Addition
	Recording paper	1 piece	1 piece (for 50 times use) * 1000 times/year = 20	20	piece	\$1,700		6	\$204,000	Renew/Addition
D-13	Ceiling lamp (2 arm)									Addition
	Halogen lamp	5 pieces/set	1 set/4 months * 12 months = 3 sets	3	set	\$93,600		2	\$561,600	Addition
D-15	Colposcope									New
	Halogen lamp	1 piece	1 piece/year	1	piece	\$8,000		1	\$8,000	New
D-17	Defibrillator									Addition
	ECG electrode	150 pieces/set	(50 cases/year) * (3 pieces/case) / (150 pieces/set) = 1 set	1	set	\$13,500		6	\$81,000	Addition
	Recording paper	20 m * 10 rolls/set	(50 cases/year) * (2 m/recording) / (20 m * 10 rolls/set) = 0.5 set	1	set	\$3,200		6	\$19,200	Addition
	Gel	100 g * 5/set	(50 cases/year) * (20 g/person) / (100 g * 5/set) = 2 sets	2	set	\$2,500		6	\$30,000	Addition
D-21	ECG (portable)									Addition
	Recording paper	20m * 10 rolls/set	(700 times/year) * (0.5 m/recording) / (20 m * 10 roll/set) = 1.75 set	2	set	\$6,400		4	\$51,200	Addition
	Gel	100 g * 2/set	(700 times/year) * (10 g/case) / (100 g * 2/set) = 3.5 sets	4	set	\$1,000		4	\$16,000	Addition
D-22	Electric surgical unit									Addition
	Electrode holder	1 set (used 100 times)	(100 cases/year) / (1 set/100 times) = 1set	1	set	\$30,000		2	\$60,000	Addition
	Electrode set	1 piece * 10/types/set	1 set/year	1	set	\$20,000		2	\$40,000	Addition
D-24	Examination light									Addition
	Halogen lamp	1 piece	1 piece/4 months * 12 months = 3 pieces	3	piece	\$7,200		10	\$216,000	Addition
D-25	Fetus doppler									Addition
	Gel	250 g/bottle	1 bottle (for 50 times) * 1000 times/year = 20 bottles	20	bottle	\$1,000		4	\$80,000	Addition
D-26	Film developer									Renew
	Developing solution	19 L/box	30 L/month * 12 months/19 L = 19 boxes	19	box	\$20,000		1	\$380,000	Renew
	Fixing solution	19 L/box	30 L/month * 12 months/19 L = 19 boxes	19	box	\$10,000		1	\$190,000	Renew
D-27	Film viewer (wall mount)									Addition
	Lamp	6 pieces/set	1 set / 2.5 months * 12 months = 5 sets	5	set	\$5,000		2	\$50,000	Addition
D-31	Centrifuge (hematocrit)									Addition
	Capillary tube	1000 pieces/box	3 boxes/year	3	box	\$7,000		2	\$42,000	Addition
D-32	Hematology analyzer B									Addition
	Reagent and recording paper set	1 set	6000 tests/year	1	set	\$7,750		1	\$7,750	Addition
D-33	High pressure steam sterilizer									Addition
	Pre-filter element	1 set	Replaced once a year	1	set	\$1,579		2	\$3,158	Addition
D-36	Infant incubator									Renew/Addition
	Air microfilter	5 pieces/set	1 set/4 months * 12 months = 3 sets	3	set	\$11,500		10	\$345,000	Renew/Addition
	Pad for body temperature probe	30 pieces * 4 boxes = 1 set	1 set/4 months * 12 months = 3 sets	3	set	\$3,900		10	\$117,000	Renew/Addition
D-37	Neonatal treatment table									Renew/Addition
	Pad for body temperature probe	30 pieces * 4 boxes = 1 set	1 set/4 months * 12 months = 3 sets	3	set	\$3,900		4	\$46,800	Renew/Addition
D-38	Infusion pump (infant)									Addition
	Infusion line set	100 pieces/set	1 set/2 months * 12 months = 6 sets	6	set	\$15,000		2	\$180,000	Addition
D-39	Infusion pump (adult)									Addition
	Infusion line set	100 pieces/set	1 set/2 months * 12 months = 6 sets	6	set	\$15,000		6	\$540,000	Addition
D-43	Microscope									Renew/Addition
	Halogen lamp	1 piece	1 piece/year	1	piece	\$2,000		3	\$6,000	Renew/Addition
	Oil	50 cc/bottle	250 cc/year	5	bottle	\$3,000		3	\$45,000	Renew/Addition
D-45	Patient monitor (adult, standard)									Addition
	ECG electrode	150 pieces/set	365 days * (1 person/3days) * (3 pieces/person) / (150 pieces/set) = 2.4 sets	3	set	\$10,950		6	\$197,100	Addition
	Recording paper	20 m * 10 rolls/set	365 days * (once/day) * (200 mm/recording) / ((20 m * 10 rolls/set)) = 0.365 set	1	set	\$4,700		6	\$28,200	Addition
D-46	Patient monitor (infant, standard + CO2)									Addition
	ECG electrode	150 pieces/set	365 days * (1 person/3 days) * (3 pieces/person) / (150 pieces/set) = 2.4 sets	3	set	\$10,950		2	\$65,700	Addition
	Recording paper	20 m * 10 rolls/set	365 days * (once/day) * (200 mm/recording) / ((20 m * 10 rolls/set)) = 0.365 set	1	set	\$4,700		2	\$9,400	Addition
D-47	Patient monitor (infant, standard)									Addition
	ECG electrode	150 pieces/set	365 days * (1 person/3days) * (3 pieces/person) / (150 pieces/set) = 2.4 sets	3	set	\$10,950		6	\$197,100	Addition
	Recording paper	20 m * 10 rolls/set	365 days * (once/day) * (200 mm/recording) / ((20 m * 10 rolls/set)) = 0.365 set	1	set	\$4,700		6	\$28,200	Addition
D-48	Phototherapy unit									Addition
	Lamp	5 pieces/set	1 set/4 months * 12 months = 3 sets	3	set	\$7,500		17	\$382,500	Addition
	Eye mask	10 pieces each for 2 sizes/set	1 set/6 months * 12 months = 2 sets	2	set	\$1,000		17	\$34,000	Addition
D-49	Pulse oxymeter (bedside)									Addition
	Finger probe		1 set/year	1	set	\$16,500		22	\$363,000	Addition
D-50	Resuscitator (Ambu, adult)									Addition
	Face mask set	1 piece each for 2 sizes/set	1 set/4 months * 12 months = 3 sets	3	piece	\$7,000		5	\$105,000	Addition
D-51	Resuscitator (Ambu, infant)									Addition
	Face mask (for newborn babies)	1 piece each for 2 sizes/set	1 set/4 months * 12 months = 3 sets	3	set	\$4,500		10	\$135,000	Addition
	Face mask (for children)	1 piece each for 2 sizes/set	1 set/4 months * 12 months = 3 sets	3	set	\$5,500		10	\$165,000	Addition
D-53	Spectrophotometer									Renew
	Tungsten halogen lamp	1 piece	1 piece/year	1	piece	1110		2	\$2,220	Renew
	Deuterium lamp	1 piece	1 piece/year	1	piece	100		2	\$200	Renew
	Recording paper	500/box	3 pieces/year	3	box	50		2	\$300	Renew
D-57	Suction pump (2 bottle)									Addition
	Suction bottle with a cap	1 piece	Replaced 2 pieces/year	2	piece	\$19,500		5	\$195,000	Addition
	Canula connecting hose	1 set	1 set/6 months * 12 months = 2 sets	2	set	\$3,000		5	\$30,000	Addition
D-58	Suction pump (portable)									Addition
	Suction bottle	1 piece	1 piece/year	1	piece	\$3,800		12	\$45,600	Addition
	Suction tube connecting hose	1 piece	1 piece/6 months * 12 months = 2 pieces	4	piece	\$1,000		12	\$48,000	Addition
	Suction tube (suction catheter)	50 pieces/box	1 box/4 months * 12 months = 3 boxes	3	box	\$3,600		12	\$129,600	Addition
D-60	Syringe pump (infant)									Addition
	Disposable syringe, 10ml	100 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set	\$3,700		10	\$185,000	Addition
	Disposable syringe, 20ml	50 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set	\$3,500		10	\$175,000	Addition
	Disposable syringe, 30ml	50 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set	\$6,000		10	\$300,000	Addition
	Disposable syringe, 50ml	20 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set	\$3,500		10	\$175,000	Addition
	Extension tube	50 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set	\$15,000		10	\$750,000	Addition
D-61	Syringe pump (adult)									Addition
	Disposable syringe, 10ml	100 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set	\$3,700		6	\$111,000	Addition
	Disposable syringe, 20ml	50 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set	\$3,500		6	\$105,000	Addition
	Disposable syringe, 30ml	50 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set	\$6,000		6	\$180,000	Addition
	Disposable syringe, 50ml	20 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set	\$3,500		6	\$105,000	Addition
	Extension tube	50 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set	\$15,000		6	\$450,000	Addition
D-62	Ultrasonic nebulizer									Addition

Appendix 9. Operation and Maintenance Cost for the Equipment (Dier-ez-Zor)

Plan No.	Planned equipment (English)	Package (Packing unit)	Basis of calculation	Quantity	Unit	Unit price USD	Unit price JPY	Planned Quantity	Total price	Type
	Bacteria filter	1 piece	1 piece/4 months * 12 months = 3 pieces	3	piece		¥15,000	10	¥450,000	Addition
	Diaphragm	5 pieces/box	1 box/4 months * 12 months = 3 boxes	3	box		¥1,000	10	¥30,000	Addition
	Aerosol tube set	1 piece	1 piece/4 months * 12 months = 3 pieces	3	piece		¥1,700	10	¥51,000	Addition
	Mask for children	5 pieces/box	1 box/4 months * 12 months = 3 boxes	3	box		¥440	10	¥13,200	Addition
	Mouth piece	5 pieces/box	1 box/4 months * 12 months = 3 boxes	3	box		¥200	10	¥6,000	Addition
D-63	Ultrasound (B/W, OB/GY)									Renew/Addition
	Gel	300 g /bottle	260 days * (5 persons/day) * (10 g/person) / (300 g/bottle) = 43 bottles	43	bottle		¥1,300	2	¥111,800	Renew/Addition
	Recording paper	18 m/roll	260 days * (5 persons/day) * (0.3 m/person) / (18 m/roll) = 21.6 rolls	22	roll		¥12,300	2	¥541,200	Renew/Addition
D-64	Ultrasound (color doppler, infant)									New
	Gel	300 g/bottle	260 days * (3 persons/day) * (10 g/person) / (300 g/bottle) = 26 bottles	26	bottle		¥1,300	1	¥33,800	New
	Recording paper	18 m/roll	260 days * (3 persons/day) * (0.3 m/person) / (18 m/roll) = 13 rolls	13	roll		¥12,300	1	¥159,900	New
D-65	Vacuum extractor									Addition
	Bottle	2000 ml/bottle * 2	1 set (total 3000 mL or more) / 6 months * 12 months = 2 sets	2	set		¥10,500	2	¥42,000	Addition
D-66	Ventilator (adult)									Addition
	ET tube set	1 piece for each/set	365 days * (1 piece/person) / (4 days/person) / (1 piece each for 7 types/set) = 13.03 sets	13	set		¥6,000	2	¥156,000	Addition
	Bacteria filter	1 piece	1 piece/year	1	piece		¥17,800	2	¥35,600	Addition
D-67	Ventilator (infant)									Addition
	ET tube set	1 piece for each/set	365 days * (1 piece/person) / (4 days/person) / (1 piece each for 7 types/set) = 13.03 sets	13	set		¥6,000	6	¥468,000	Addition
	Bacteria filter	1 piece	1 piece/year	1	piece		¥17,800	6	¥106,800	Addition
	Face mask	1 piece for each/set	1 set/year	1	set		¥5,000	6	¥30,000	Addition
D-70	X-ray unit (fluoroscope, analogue)									New
	Film	100sheets/box	365 days * (10 sheets/day) / (100 sheets/box) = 36.5 boxes	37	box		¥43,000	1	¥1,591,000	New
	Annual maintenance agreement	case	One-year contract	1	case	\$1,250		1		New
D-71	X-ray unit (mobile)									Renew
	Film	100 sheets/box	365 days * (20 sheets/day) / (100 sheets/box) = 73 boxes	73	box		¥43,000	1	¥3,139,000	Renew
	Annual maintenance agreement	case	One-year contract	1	case	\$1,250		1		Renew
Total									¥21,692,090	

Appendix 9. Operation and Maintenance Cost for the Equipment (Hasaka)

Plan No.	Planned equipment (English)	Package (Packing unit)	Basis of calculation	Quantity	Unit	Unit price USD	Unit price JPY	Planned quantity	Total price	Type
H-06	Biochemistry analyzer									New
	Reagent set	600 tests/set	600 tests/year	1	set	\$50,129.00		1	\$50,129	New
	Recording paper	4 rolls/box	4 rolls/year	1	box	\$500.00		1	\$500	New
H-07	Blood gas analyzer									New
	Reagent set	900 tests/set	900 tests/year	1	set	\$4,714.00		1	\$4,714	New
	Recording paper	5 rolls/box	5 rolls/year	1	box	\$70.00		1	\$70	New
H-11	Defibrillator									New
	ECG electrode	150 pieces/set	(50 cases/year) * (3 pieces/case) / (150 pieces/set) = 1 set	1	set		¥13,500	3	¥40,500	New
	Recording paper	20 m * 10 rolls/set	(50 cases/year) * (2 m/recording) / (20 m * 10 rolls/set) = 0.5 set	1	set		¥3,200	3	¥9,600	New
	Gel	100 g * 5/set	(50 cases/year) * (20 g/case) / (100 g * 5/set) = 2 sets	2	set		¥2,500	3	¥15,000	New
H-13	ECG (portable)									New
	Recording paper	20 m * 10 rolls/set	(700 times/year) * (0.5 m/recording) / (20 m * 10 roll/set) = 1.75 set	2	set		¥6,400	2	¥25,600	New
	Gel	100 g * 5/set	(700 times/year) * (10 g/case) / (100 g * 2/set) = 3.5 sets	4	set		¥1,000	2	¥8,000	New
H-15	Examination light									Renew
	Halogen lamp	1 piece	1 piece/4 months * 12 months = 3 pieces	3	piece		¥7,200	1	¥21,600	Renew
H-16	Film developer									Renew
	Developing solution	19 L/box	30 L/month * 12 months/19 L = 19 boxes	19	box		¥20,000	1	¥380,000	Renew
	Fixing solution	19 L/box	30 L/month * 12 months/19 L = 19 boxes	19	box		¥10,000	1	¥190,000	Renew
H-17	Film viewer (mobile)									New
	Lamp	6 pieces/set	1 set/2.5 months * 12 months = 5 sets	5	set		¥5,000	1	¥25,000	New
H-18	Film viewer (wall mount)									Renew
	Lamp	6 pieces/set	1 set/2.5 months * 12 months = 5 sets	5	set		¥5,000	1	¥25,000	Renew
H-20	Hematology analyzer A									New
	Reagent and recording paper set	1 set	3000 tests/year	1	set	\$3,510		1	\$3,510	New
H-23	Infant incubator									Renew/Addition
	Air microfilter	5 pieces/set	1 set/4 months * 12 months = 3 sets	3	set		¥11,500	10	¥345,000	Renew/Addition
	Pad for body temperature probe	30 pieces * 4 box = 1 set	1 set/4 months * 12 months = 3 sets	3	set		¥3,900	10	¥117,000	Renew/Addition
H-24	Neonatal treatment table									New
	Pad for body temperature probe	30 pieces * 4 box = 1 set	1 set/4 months * 12 months = 3 sets	3	set		¥3,900	2	¥23,400	New
H-25	Infusion pump									Renew
	Infusion line set	100 pieces/set	1 set/2 months * 12 months = 6 sets	6	set		¥15,000	4	¥360,000	Renew
H-28	Microscope									Renew/Addition
	Halogen lamp	1 piece	1 piece/year	1	piece		¥2,000	2	¥4,000	Renew/Addition
	Oil	50 cc/bottle	250 cc/year	5	bottle		¥3,000	2	¥30,000	Renew/Addition
H-29	Mobile incubator									New
	Air microfilter	10 pieces/set	1 set/6 months * 12 months = 2 sets	2	set		9200	1	¥18,400	New
	Humidifier sponge	5 pieces/set	1 set/3 months * 12 months = 4 sets	4	set		4000	1	¥16,000	New
	Access port cover	20 pieces/set	1 set/year	1	set		8600	1	¥8,600	New
	Pad for body temperature probe	30 pieces * 4 box = 1 set	1 set/4 months * 12 months = 3 sets	3	set		3900	1	¥11,700	New
H-30	Patient monitor (infant, standard)									Renew
	ECG electrode	150 pieces/set	365 days * (1 person/3 days) * (3 pieces/person) / (150 pieces/set) = 2.4 sets	3	set		¥10,950	4	¥131,400	Renew
	Recording paper	20 m * 10 rolls/set	365 days * (once/day) * (200 mm/recording) / ((20 m * 10 rolls/set) = 0.365 set	1	set		¥4,700	4	¥18,800	Renew
H-31	Phototherapy unit									Addition
	Lamp	5 pieces/set	1 set/4 months * 12 months = 3 sets	3	set		¥7,500	4	¥90,000	Addition
	Eye mask	10 pieces each for 2 sizes/set	1 set/6 months * 12 months = 2 sets	2	set		¥1,000	4	¥8,000	Addition
H-32	Pulse oxymeter (portable)									New
	Finger probe		1 set/year	1	set		¥16,500	13	¥214,500	New
H-33	Resuscitator (Ambu, infant)									Renew
	Face mask (for newborn babies)	1 piece each for 2 sizes/set	1 set/4 months * 12 months = 3 sets	3	set		¥4,500	3	¥40,500	Renew
	Face mask (for children)	1 piece each for 2 sizes/set	1 set/4 months * 12 months = 3 sets	3	set		¥5,500	3	¥49,500	Renew
H-34	Spectrophotometer									Renew
	Tungsten halogen lamp	1 piece	1 piece/year	1	piece	\$1,110		1	\$1,110	Renew
	Deuterium lamp	1 piece	1 piece/year	1	piece	\$100		1	\$100	Renew
	Recording paper	500/box	3 rolls/year	3	box	\$50		1	\$150	Renew
H-37	Suction pump (portable)									Renew
	Suction bottle	1 piece	Replace 1 piece/year	1	piece		¥3,800	5	¥19,000	Renew
	Suction tube connecting hose	1 piece	1 piece/6 months * 12 months = 2 pieces	4	piece		¥1,000	5	¥20,000	Renew
	Suction tube (suction catheter)	50 pieces/box	1 box/4 months * 12 months = 3 boxes	3	box		¥3,600	5	¥54,000	Renew
H-38	Syringe pump									Renew
	Disposable syringe, 10ml	100 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set		¥3,700	19	¥351,500	Renew
	Disposable syringe, 20ml	50 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set		¥3,500	19	¥332,500	Renew
	Disposable syringe, 30ml	50 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set		¥6,000	19	¥570,000	Renew
	Disposable syringe, 50ml	20 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set		¥3,500	19	¥332,500	Renew
	Extension tube	50 pieces/set	1 set (minimum sales volume) / 2.5 months * 12 months = 5 sets	5	set		¥15,000	19	¥1,425,000	Renew
H-39	Ultrasonic nebulizer									New
	Bacteria filter	1 piece	1 piece/4 months * 12 months = 3 pieces	3	piece		¥15,000	6	¥270,000	New
	Diaphragm	5 pieces/box	1 box/4 months * 12 months = 3 boxes	3	box		¥1,000	6	¥18,000	New
	Aerosol tube set	1 piece	1 piece/4 months * 12 months = 3 pieces	3	piece		¥1,700	6	¥30,600	New
	Mask for children	5 pieces/box	1 box/4 months * 12 months = 3 boxes	3	box		¥440	6	¥7,920	New
	Mouth piece	5 pieces/box	1 box/4 months * 12 months = 3 boxes	3	box		¥200	6	¥3,600	New
H-40	Ultrasound (color doppler, infant)									Renew
	Gel	300 g/bottle	260 days * (3 persons/day) * (10 g/person) / (300 g/bottle) = 26 bottles	26	bottle		¥1,300	1	¥33,800	Renew
	Recording paper	18 m/roll	260 days * (3 persons/day) * (0.3 m/person) / (18 m/roll) = 13 rolls	13	roll		¥12,900	1	¥159,900	Renew
H-41	Ventilator (infant)									Addition
	ET tube set	1 piece each/set	365 days * (1 piece/person) / (4 days/person) / (1 piece each for 7 types/set) = 13.03 sets	13	set		¥4,800	3	¥187,200	Addition
	Bacteria filter	1 piece	1 piece/year	1	piece		¥18,950	3	¥56,850	Addition
	Face mask	1 piece each/set	1 set/year	1	set		¥5,000	3	¥15,000	Addition
H-43	X-ray unit (fluoroscope, digital)									New
	Film	100 sheets/box	365 days * (10 sheets/day) / (100 sheets/box) = 36.5 boxes	37	box		¥43,000	1	¥1,591,000	New
	Annual maintenance agreement	case	One-year contract	1	case	\$1,250		1		New
H-44	X-ray unit (mobile)									Renew
	Film	100 sheets/box	365 days * (20 sheets/day) / (100 sheets/box) = 73 boxes	73	box		¥43,000	1	¥3,139,000	Renew
	Annual maintenance agreement	case	One-year contract	1	case	\$1,250		1		Renew
								Total	¥16,494,940	



