

4. Health

4. Health

4.1 Outline of Health Sector in Iraq

4.1.1 Information Collection Activities

Data for the health sector was collected from the following 5 sources:

(1) United Nations Development Group (hereinafter UNDG)

A cluster meeting of health sector is held every two weeks. WHO is team leader of this cluster connection with UNICEF, WFA, IOM, and NGOs. The Study Team held a separate meeting with WHO and obtained information of Ministry of Health, including outline of health sector. The preliminary study team (hereinafter Team) kept in touch with these International Cooperation Agencies through the cluster meetings and individual communications.

(2) Coalition Provisional Authority (hereinafter CPA)

CPA is organized group from 4 regional groups: north, central, central south, and south areas. Each group is individually working on their own programs. Advisers are dispatched to all ministries. The Team could meet with CPA south and CPA adviser to Ministry of Health. CPA south covers 4 governorates in the southern area: namely, Basra, Muthana, Maysan, and Dhi Qar. CPA south is organized from United Kingdom and European countries mainly and Health sector is composed of Italian and British medical doctors. There are now 18 CPA staff in Ministry of Health (hereinafter MOH). Most of them are Americans and half of them are soldiers. Many of them have a lot of experience or knowledge in health sector development and management.

(3) Field survey by local consultant

Local consultant implemented field survey based on questionnaire, which was prepared by the Team. Questionnaires were prepared for MOH, district health office, and candidate hospital for project. However, local customs of Iraq do not allow disclosure of detail information on Iraqis, and this together with limited traveling due to security reasons were big hurdles to local consultant to complete the survey work. Quality of data were sufficient considering condition of Iraqi statistics. However, obtaining of photos was difficult.

(4) Distributors of medical equipment

There are many distributors of medical equipment in Amman. They are doing business with Iraq and have a strong partner or branch/subsidiary there. Oil for Food Program (hereinafter OFFP) procured a lot of medical equipment and these distributors have enough experience in this field. The Team is communicating with them and getting information on Iraq.

4.1.2 Outline of Health Sector

During the 1970s and early 80s, several critical health indicators on the Iraqi people improved substantially. Infant Mortality Rates decreased from 80 per 1,000 live births in 1979 to 40 in 1989. In the same period, Under-5 Mortality Rates fell from 120 to 60.¹ Trend of these indicators² with GPD³ and key historical events is shown in Figure 4.1.1.

Unfortunately, the regime, which ruled Iraq between 1979 and 2003, established priorities for the government health program, and budgetary allocation that did not reflect population health care costs. Patterns of resources distribution tended to favor specific political, ethnic and geographic groups. As a result, serious gaps developed when the regime started to deteriorate during the 1980s; the decline was exacerbated as a result of both wars and political and economical sanctions.

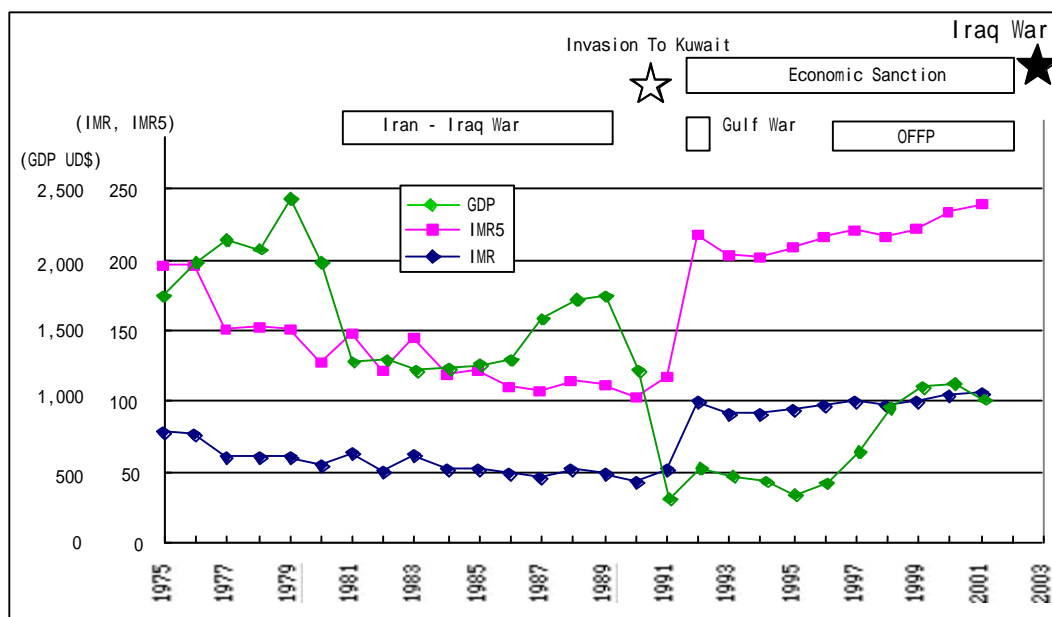
1 UNICEF and WHO: Iraq Watching Briefs, July 2003

2 Review of Potential Interventions to Reduce Child Mortality in Iraq, Nov. 2003, USAID, BASICSII

3 Republic of Iraq, 2004 Budget, Oct. 2003, Ministry of Finance, Ministry of Planning

Oil for Food Program was established under the UN in 1996. This program was planned to improve the serious health and economic situation. However, OFFP could not improve health situation of people by 2001. It is reported that after 2002, food and medicine by OFFP improved health situation⁴. Recent security conditions limited the activity of Primary Health Care activity. It also caused the collapse of the referral system.

MOH with CPA is attempting the reconstruction of health policy and system. Shift in Iraqi's traditional hospital care to Primary Health Care is the most important focus. More than this, there are many issues such as establishing training system for medical staff, organization of pharmaceutical supply, rehabilitation of health facilities, etc.



Source: Prepared by the Team based on data from Review of Potential Intervention to Reduce Child Mortality in Iraq and 2004 Budget

Figure 4.1.1 Trend of Infant Mortality Rate and GDP

(1) Organization of Health Administration

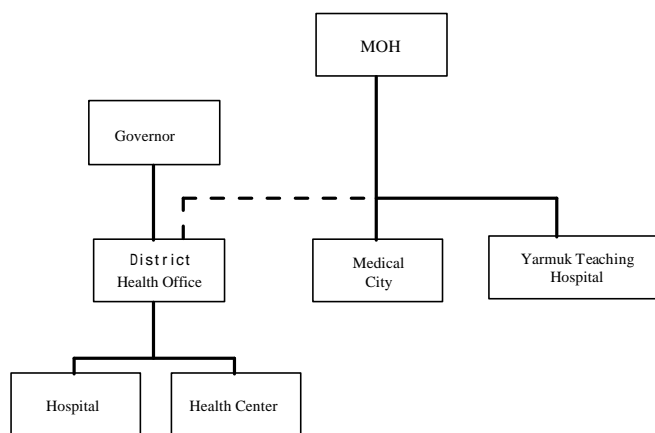
Iraq is divided into 18 governorates, each with a governor. Under the Ministry of Health, there are 19 district health offices: one for each governorate and 2 district health offices in Baghdad because it is divided east and west. All health facilities belong to the district health office except for Medial City Hospital and Yarmuk Teaching Hospital. These 2 hospitals are directly controlled by MOH. Each governorate and 2 hospitals have a Director General (DG). Details of this organization and flow of instructions is shown in Figure 4.1.2. MOH sets policy for the whole nation, and the district health office controls domestic policy and operation of it.

Tentative organization of MOH, as received to JICA Study Team, is shown in Figure 4.1.3.

(2) Health Policy

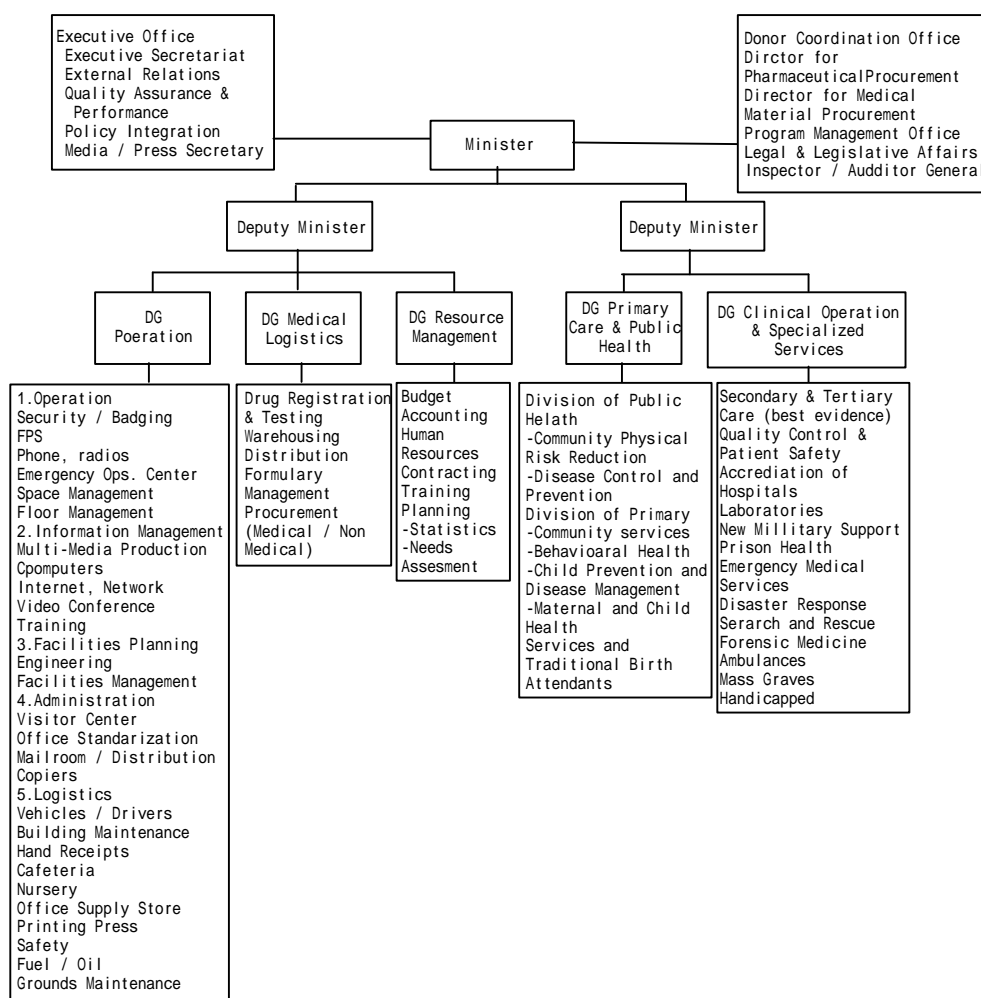
Health policy of Iraq is under preparation and not yet finalized. The health sector steering group was established in MOH. They will focus on policy issues that cut across the concerns of the individual working groups. There are 10 working groups: namely, "public health", "health information system", "information technology", "human resources", "education and training of health professionals", "establishing credentials of – and licensing – health professionals", "health care delivery system", "financing of health care in Iraq", and "pharmaceuticals, medical supplies and equipment".

MOH indicated that the priorities for the health sector are primary health care, prevention of communicable diseases, and mother and child health. WHO additionally noticed the importance of communication between ministry, district health office and health facilities.



Source: Prepared by the Team based on local consultant's survey

Figure 4.1.2 Health Administration Flow



Source: Prepared by the Team based on local consultant's survey

Figure 4.1.3 Tentative Organization of MOH

(3) Referral system and primary health care

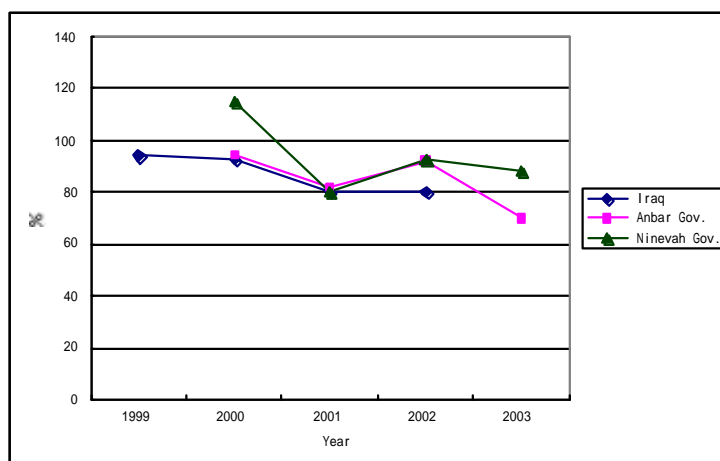
Iraqi health system was developed as a gateway to hospital care. Primary health care is operated by health centers. There is guideline that a health center is made available to every 20,000 population in principal. The total number of 1,579 health centers achieves this guideline. However, there are difference between governorate and also areas. Furthermore, the recent security situation prevents proper allocation of health staff and logistic problems prevent proper health service. Because of these situations, many patients go to hospitals directly. This situation is seriously identified by MOH and international donor agencies.

(4) Health condition and diseases patter

Reform of Diseases patter of Iraq from communicable diseases to chronic diseases started before 1990. However, this transition was slow and communicable diseases are still endemic. There are sporadic outbreaks of cholera, visceral leishmaniasis, and malaria. Preventative communicable diseases like measles and whooping cough are still spread due to decrease in immunization caused by the economic sanction.

Coverage of immunization was scrapped by the Iraqi war, which increased from the end of 1990's. Collapse of electricity destroyed functions using cold storage in almost all health centers. In July 2003, the immunization program succeeded to restart as part of EPI. Only 60% of health centers could reestablish cold supply and it affect quality of vaccine. 30,000,000 children were immunized in September 2003. However, achieving of this big result did not put priority on quality.⁵

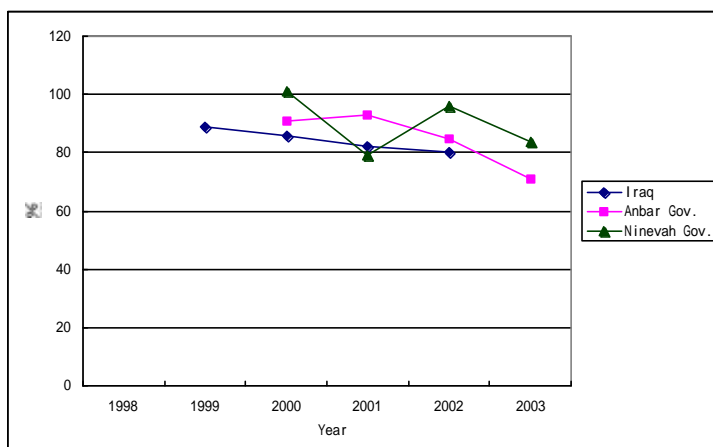
Recent trends of immunization coverage are shown in Figure 4.1.4 ~ 6. Also, recent trends of immunization of preventable diseases patterns are shown in Figures 4.1.7 and 4.1.8. The data indicates gradual decrease of immunization coverage. However, the number of diseases still decreased (except the unstable trend of whooping cough) in spite of the immunization trend.



Source: Review of Potential Intervention to Reduce Child Mortality in Iraq and questionnaire

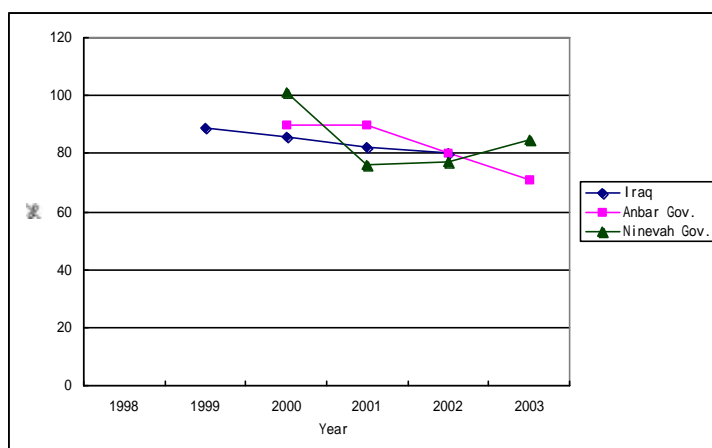
Figure 4.1.4 Immunization Coverage of Measles

5 Review of Potential Interventions to Reduce Child Mortality in Iraq, Nov. 2003, BASICSII, USAID



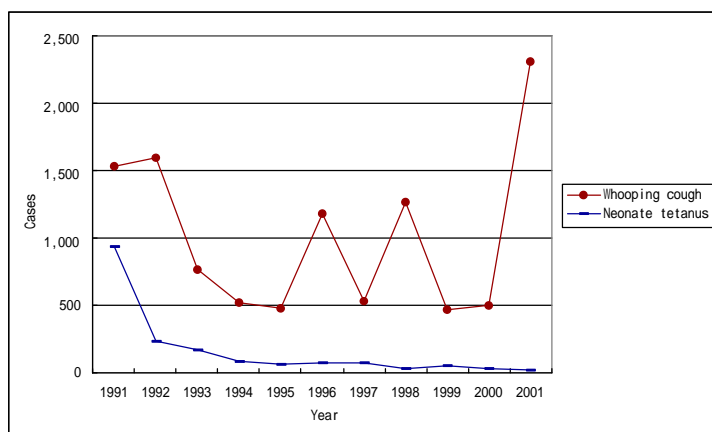
Source: Review of Potential Intervention to Reduce Child Mortality in Iraq and questionnaire

Figure 4.1.5 Immunization Coverage of Polio



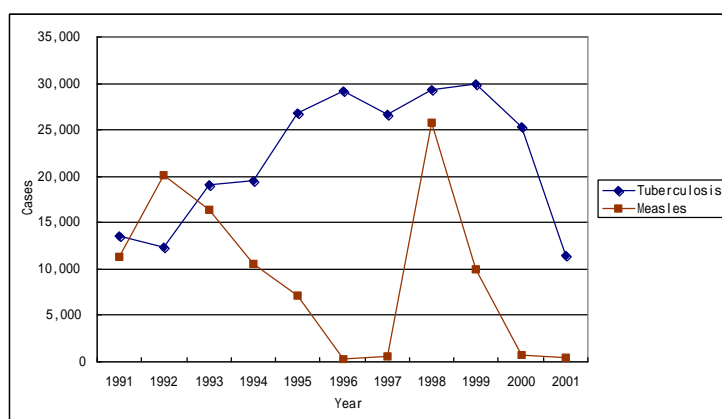
Source: Review of Potential Intervention to Reduce Child Mortality in Iraq and questionnaire

Figure 4.1.6 Immunization Coverage of DPT



Source: Review of Potential Intervention to Reduce Child Mortality in Iraq and questionnaire

**Figure 4.1.7 Cases of Immunization Preventative Diseases 1
(Whooping Cough and Neonatal Tetanus)**



Source: Review of Potential Intervention to Reduce Child Mortality in Iraq and questionnaire

Figure 4.1.8 Cases of Immunization Preventative Diseases 2 (TB and Measles)

(5) Mother and Child Health

It is reported that low weight of births (less than 2.5 kg) was 5% in 1984 and 9% on average between 1982 - 88.⁶ MOH reported that low weight births of Iraq were 2.5% for hospital births (60% of all births) in spite of the fact that the rate in Arab areas was 14% in 1990. However it increased to 12% in 2000.⁷

Maternal Mortality Rate of 100,000 live births (hereinafter MMR) was 294 between 1989 and 1998. It halved in 1989 (117). Maternal death occurred 61% for postnatal and in birth 24%. These deaths could be prevented by prenatal check, delivery with sufficiently trained birth assistants, and referral system. In 1998, 65% of delivery was in home and 79% of these deliveries were assisted by Traditional Birth Attendance (hereinafter TBA). Delivery with untrained birth assistance increased in 1990s. Rates are 30% in urban area and 40% in rural area. Almost 80% of pregnant woman receive prenatal checks. But only 60% receive postnatal checks. Even woman who deliver their baby in public or private health facility get limited care because of lack of medicine, lack of transportation method to higher grade health facility, and lack of training in emergency obstetric care. It is mainly referral institutions at a district level which have the capacity to attend to complicated births; risk of poor birth outcomes with high rates of anemia (51%- 70%), short birth intervals (41%) less than 2 years apart, total fertility (7.7) and early marriage (40% prior to age 18). About 15% - 20% of deliveries are at high risk and need advanced medical support. Efforts are needed to develop or strengthen the referral system to ensure referral of complicated cases to institutions that deliver emergency obstetric care.

Only one third of MOH facilities offer emergency obstetric care and only a third of Iraq's women give birth with a qualified health worker in attendance. 15% - 20% of them face high risks to their health and need advanced medical support, but referral systems have not yet been developed. This explains the high maternal mortality of 300 MMR: a much higher rate than in other countries of the region.

There are 502 obstetricians/gynecologists, about 2,000 traditional birth attendants (TBAs) and perhaps 3,000 untrained TBAs. Most of them have had in-service and refresher training. TBAs assist many women who do not have professionally supervised births. There have been some efforts to train and integrate TBAs into the health system. It is reported that this has been successful, resulting in increased referral of pregnant woman for prenatal care and delivery services. This effort should be greatly expanded as part of primary care.

⁶ The State of Children's Health in Pre-war Iraq, Hurwitz M., P. David, August 1992, Center o Population Studies, London School of Hygiene and Tropical Medicine

⁷ Multiple Indicator Cluster Survey, 2000, MOH, UNICEF

(6) Human resources of health sector

Iraq human resources rate of population in 2000 is shown on Table 4.1.1. The latest actual numbers of some governorates are shown Table 4.1.2.

The doctor to population ratio increased from 1977 to 1998, but was still low at 4.7 per 10,000 compared to most other countries in the region with ratios above 10 per 10,000. Nurses per population were always low, and fell off precipitously after foreign workers left in 1990. There are 5.2 nursing staff per 10,000 people, meaning that there is about one nurse per physician. In most countries there are 3 – 6 nursing personnel per physician. More than a third of the physicians are specialists, while less than a third of the nurses were trained in post-high school programs. Only a handful of those trained in other countries have any background in public health. A large number of well-trained nurses will be needed to retool the health system to primary care, health education and promotion, and targeted disease prevention programs.

Table 4.1.1 Nurses and Doctors per 100,000 Populations, 2000

Governorate	Specialist	G.P.	Dr. Total	BSc Nurse Intermedicate Nurse	Nurse Aid	Nurse Total
Baghdad	16.4	44.8	61.2	14.3	15.9	30.2
Ninevah	9.0	28.4	37.4	6.8	19.7	26.5
Basra	11.5	36.0	47.5	9.8	32.6	42.4
Dhi Qar	7.1	15.8	22.9	10.4	24.2	34.6
Babylon	13.9	36.7	50.6	13.5	24.6	38.1
Dhiyara	11.5	23.6	35.1	16.8	18.3	35.1
Anbar	13.5	32.3	45.8	9.1	22.1	31.2
Salahuddin	15.0	27.9	42.9	1.6	15.6	17.2
Najaf	14.8	33.0	47.8	8.3	23.4	31.7
Wasit	14.3	21.9	36.2	2.0	5.1	7.1
Qadisiyah	10.8	30.4	41.2	4.8	29.3	34.1
Tamn	17.8	31.4	49.2	6.7	20.2	26.9
Maisan	8.3	15.2	23.5	9.0	27.2	36.2
Karbala	14.6	35.4	50.0	10.9	48.2	59.1
Muthana	11.8	23.4	35.2	0.2	12.1	12.3
Sulaimaniya	27.7	44.2	71.9	62.2	141.8	204.0
Erbil	7.3	37.5	44.8	32.6	110.5	143.1
Duhok	5.8	48.6	54.4	7.6	88.2	95.8
Total	13.5	32.2	45.7	14.0	38.1	52.1

Source : Review of Potential Intervention to Reduce Child Mortality in Iraq

Table 4.1.2 Number of Health Personnel (some governorate only)

Category	Nain	Maisa	Wasit				Karbala				Average salary/month at Wasit (2003) (Iraqi Dinar)
	2003	2003	2000	2001	2002	2003	2000	2001	2002	2003	
Doctors											
General Practitioner	532	30	57	58	77	89	75	58	86	112	200.000
Specialised doctors	524		156	134	132	134	106	95	114	119	300.000
Internal	59	7	28	28	27	24	12	13	13	15	300.000
Surgical	53	14	20	20	21	23	11	13	13	14	300.000
Pediatrics	88	9	16	17	18	21	23	21	21	23	300.000
Obstetric and Gynecology	63	13	18	31	19	19	14	15	15	16	300.000
Others	198	22	72	38	38	47	116	138	148	171	
Dentist	329	82	48	45	52	60	58	45	66	92	300.000
Pharmacist	167	53	42	43	43	41	70	68	60	86	300.000
Paramedical Personnel											
Laboratory Technologists		3				1	131	133	133	197	300.000
Cytogenetics Technologists											
Radiographers	282	23	34	33	31	29	25	25	25	39	200.000
Physiotherapists	12	18	14	12	15	16	18	23	23	28	200.000
Dental Technologists		4									
Nurses		358									
BSc Nurse	11	3		2	2	3	9	10	10	17	200.000
Intermediate Nurse	1146	128	452	463	463	889	545	470	470	1060	200.000
Nurse Aid		631			9	9					200.000
Midwife	2	48					4	5	5	5	
Public Health		11	32	41	35	37					200.000
Administrative Officers		83					59	68	68	81	
Accountant	93		16	19	19	25	36	34	34	38	200.000
Secretary	55										
Engineer	103	21	12	13	13	42	17	19	19	34	300.000
Technician	76	8	17	25	22	55	16	19	17	29	200.000
Others		211	9	12	13	13					100.000

Source: Questionnaire

(7) Budget for health sector

Based on home page of CPA national income of 2004 was estimated as 19,258.8 billion ID and estimated expenditure was 20,145. This means an estimated deficit of 886.3 billion ID.

MOH is allocated a budget of 7.3% of national income: 1,420.5 billion ID. 75.0 billion ID is investment and salary is 220.5 billion ID. The salary of Iraqi government officers has 4 levels now. It is going to be modified to 13 levels.

Operation budget of all hospital and health center is distributed from MOH. All health facilities receive a small participation fee (250 ID) from the patient at the time of their first visit.

(8) Procurement system of medicine and equipment

All procurement of medicine and equipment of MOH is monopoly managed by KIMADIA(State Company for Drug Marketing and Supply). Medicine and medical equipment, procured by OFFP was also handled by KIMADIA. It was a good organization with good and effective management. There are many good engineers who maintain and install medical equipment and hospital facilities. However, the monopoly problem gradually appeared and procurement is going to be divided under leadership of CPA. It may be divided based on function (procurement, contract, storage, delivery) or based on category of handling material (medicine, equipment, general goods). Details of the plan are under consideration.

(9) Current movement of other donors

1) United Nations Developing Group (hereinafter UNDG)

UNDG has offices in Baghdad. However, only local staff is working inside of Iraq now. All international staff is located in Amman, Cypress, or headquarters. Offices in Iraq are going to be consolidated to one building and construction is underway. The plan of international staff to return inside Iraq is under consideration based on the security situation.

Draft of assistance plan was released in donor meeting on 28 and 29 February 2004 in Abu

Dhabi. It is a work-in-progress document: A strategy of assistance to Iraq 2004⁸. In this strategy, all sectors are divided to 10 clusters. Cluster leader of health sector is WHO connecting with UNICEF, UNFPA, UNHCR, UNDP, UNIFEM, WFP, UNIDO, and IMO.

The Health Cluster Objective for 2004 is to support the MOH national health strategy⁹. The MOH direction for primary health care approach will result in substantially reduced mortality and morbidity among pregnant women and children in the shortest possible time. There are several activities/programs targeting such reductions with a focus on access to and quality of health services towards achieving the relevant MDGs. National and international NGOs are presently working in Iraq and the health cluster will strive to coordinate activities for the single integrated strategy of MOH. MOH will lead the implementation of the health cluster program and activities that are based on the government of Iraq strategy. Within this leadership role, the UN health cluster member will provide the following:

- Support the institutional development of the MOH and Governorate health offices to run a health system that offers priority services to population that are accessible, affordable, equitable, and of high quality; in ways that involve all the stakeholders including community groups, health professionals, other related sectors, and international agencies.

- Provision of technical and, where required, financial back-up for priority public health and primary health initiatives, especially those related to communicable disease control and those that respond to acute maternal and child health and reproductive health needs.

- Assistance with the development of human capacity among health professionals (allied health professionals nurses, health care managers, general practitioners, specialists, and ancillary staff) through support for basic education, continuing education and fellowships.

- Support to MOH for the delivery of an integrated primary health care package related to woman & child health, nutrition, water, sanitation, sexual and reproductive health, health & hygiene promotion, immunization, advanced referral system including medical evacuation (MEDEVAC).

- Enhancement of the capacity of the MOH to coordinate the implementation of activities that are implemented by all internal and external stakeholders and partners.

The UN areas of activity for 2004 will focus on:

- Support to the logistics system and the distribution of the country's essential medical supplies, including limited local procurement, as deemed possible, of essential pharmaceuticals, reproductive health commodities, and vaccines.

- Rehabilitation of blood laboratories and provision of technical assistance to ensure blood safety and decrease the spread of hepatitis and HIV/ AIDS.

- Targeted technical and financial assistance for the control of communicable and non-communicable diseases, including support for the continued development of the MOH disease surveillance system. Upgraded telecommunications equipment and technical assistance for a health information system within MOH.

- Logistical support and technical assistance to enhance maternal and child health services, emergency obstetric services including continuing education for existing staff and improving the referral system with adequate communication equipment, as well as ambulance capability.

8 'A Strategy for Assistance to Iraq 2004'

9 It is not yet fixed and published.

Provision of educational programs for health care professionals, including nurses, family physicians, and health care managers.

Provision of technical assistance for the development of mental health and psychosocial support services at the primary health care level.

Limited physical rehabilitation and construction of essential health infrastructures in the areas of poor access including Primary Health Care Centers, the Public Health Laboratory network, selected hospitals and specialty clinics, and local production facilities. This will also include provision of basic equipment required for these rehabilitated improved facilities.

Improving the nutritional status of the population by providing technical and logistical support to food safety laboratories supplementary feeding, and vitamin mineral and micronutrient supplementation to vulnerable groups. Provide technical and material support for micronutrient fortification nationwide. Continue to support the school feeding program.

Health promotion/ disease prevention programs and activities for health service providers and the community with emphasis on vulnerable groups.

Enhancement of reproductive health services, supplies, education and information for health providers and consumers.

Provide access to specialized health care inside and outside the country through MEDEVAC for cases that meet the criteria set.

Each UNDG made individual plan with coordination. Outcome of the plans is summarized for the following 6 categories:

50% reduction in Under-5 and infant mortality

15% reduction in maternal mortality

Increase access to quality health care services especially for vulnerable groups and groups not yet reached

Enhance disease prevention and control

Increased national capacity to prevent HIV another sexually transmitted infections

Enabling environment for healthy life styles

Detail of each plans are under preparation. So far the Team identified there is no duplication with Grant Aid.

2) World Bank

World Bank and UN group are preparing 2 trust funds: World Bank Iraq Trust Fund (ITF) and UNDG Iraq Trust Fund.

A facility donor committee, which will meet on a semi-annual bases, will endorse overall priorities, provide strategic guidance to the two trust funds, review progress, and ensure reporting to all donors.

A facility coordination committee, comprising representatives from the World Bank UNDG and the IMF as an observer, will meet at least monthly to review and coordinate the overall program of activities to be financed by both trust funds to ensure conformity with facility objectives. A joint secretariat staffed by World Bank UNDG representatives will be responsible for informational, administrative, and secretarial functions.

Under the Iraq Trust Fund, potential recipients submit project or program proposals for approval to the Ministry of Planning and Development Cooperation, which will work closely with the Ministry of Finance to ensure that proposals conform to Iraq's overall budget framework.

World Bank made interim work program represents a range of potential interventions that will build Iraqi institutional capacity, extent possible under the circumstances (generate employment / kickstart economic activity and restore essential infrastructure and services), and lay the groundwork for Iraq's medium-term reconstruction and development program.

In the health sector, World Bank organized a four-day high-level policy seminar in Amman for the Minister of Health and key advisors. The agenda includes: review of the National Health Plan prepared by the ministry and CPA, introduction to master planning, introduction to national health accounts, and discussion on health financing issues. In March, Work Bank organized a two-week training activity for senior Ministry of Health staff, to be conducted in Amman, on health policies, planning, management and financing. Health sector master plan (phase 1) will be completed by September 2004.

There is no duplication from Grant Aid.

3) USAID

USAID has an office in Baghdad and 3 district offices in Basra, Hilla, and Erbil. All offices have American staff. In the health sector, there are only 4 staff in Baghdad.

USAID put priority for strengthen primary health care and implementation activity on this area. Project of training to 2,200 doctors and 8,000 health voluntary workers, equipment supply to 600 health center, and assistance for immunization of 4,300,000 people are being implemented now.

There is no duplication from Grant Aid because USAID concentrated on primary health care.

4) DFID

DFID implemented assistance through UNDG and NGO. Furthermore, 'Recovery and Infrastructure Group' (RIG) project started July of 2003. RIG project is urgent and minimum rehabilitation project for infrastructure of ministries, universities, hospitals, and so on. Total amount is 870,000 pounds. This project will be completed March 2004. This project contains urgent rehabilitation of Samawah General Hospital. The Team confirmed that there is no duplicated part from Japanese plan. In fact, this assistance becomes reinforcement for the Japanese plan.

5) CPA

CPA has individual development budget based on the law, 'Emergency Supplemental Appropriations Act for Defense and for the Reconstruction of Iraq and Afghanistan', which was signed by President Bush on November 6, 2003. The fund to Iraq totals US\$18.649 billion. The plan for this fund is made by Section 2207 report. In the health sector, there are following 3 projects:

Nationwide Hospital and Clinic Improvement (US\$ 443 million)

Rehabilitation of 15 obstetric and children hospital and construction of a new health center.

Equipment Procurement and Modernization (US\$300 million)

US\$292 million is used for procurement of medical equipment and US\$47 million (US\$23 million will be allocated to USAID) will be used for training and capacity building.

Basra Pediatric Facility (Hospital, US\$50 million)

Construction part is under evaluation of bid. Medical equipment tender is expected. This project estimated to be US\$113 million and balance of US\$63 million is expected to be privately financed.

CPA or ministry under CPA supervision operates these projects. In case of the health sector,

KIMADIA is undertaking some part of this procurement now. After the dissolving of CPA in July, the project will be operated and supervised by Project Management Office (PMO), which will be attached to the American Embassy.

There is some duplication from candidate projects of Grant Aid. The Team coordinated with CPA and removed duplication from Grant Aid. However, procurement system of CPA is different from Japanese style. It is necessary to check duplication of equipment again at the detailed design stage.

(10) Distributor of medical equipment

While the period of economic sanctions, import was prohibited except OFFP and to establish distributors was prohibited. Accordingly, only few companies have been authorized as distributors in Iraq. This kind of restriction is removed now, but there is still the security problem.

For project implementation, it is essential to cooperate with local companies in Iraq because Japanese people are not allowed to enter Iraq on these project. We confirm that the listed companies in Table 4.1.3 exist in Iraq and are capable to handle medical equipment Installation. They also can handle equipment facilities by themselves or through their sister company, except Al Banna Scientific Drug Bureau. These companies were connected with OFFP business. Furthermore, they are members of Tiger, which was appointed by CPA. Tiger Team team consists of excellent medical equipment engineers. Tiger Team made the survey of hospitals for CPA.

Table 4.1.3 Distributor of Medical Equipment in Iraq

Company	Address	Estab-lishiment	Head	No. of engineer	Tiger Team	Activity
Al-Naseem Scientific Bureau (Al-Shammery Group)	Baghdad, Iraq	2001	Ismail K. Ibrahim	15	Certified	Sales, Installation, and maintenance of medical equipment and drug.
Al-Banna Scientific Drug Bureau	Baghdad, Iraq	-	-	6 (Full Time) 6 (Part Time)	Certified	Sales, Installation, and maintenance of medical equipment and drug.
CC Med Baghdad	Baghdad, Iraq	1997	-	52	Certified	Turn-key equipmet contracting (engineering, supply, erection, installation, operation, training, maintenance, and repair)
Medical Development & Supply Co., Ltd. (MDS) MDS Technical Center - Baghdad	Baghdad, Iraq	2003	Khaled Kanaan	9	Certified	Construction, facility work, maintenance. Installation of medical equipment, maintenance, and repair.
Almazd Group for Medical & Engineering Systems & Technologies	Baghdad, Iraq	1898	Hasanain S. Ja`afar	385	Certified	Construction, facility work, maintenance. Installation of medical equipment, maintenance, and repair.

(11) Oil for Food Program (OFFP)

An UN team visited Iraq from 10 to 17 March 1991 and reported that "the Iraqi people may soon face a further imminent catastrophe, which could include epidemic and famine, if massive

life-supporting needs are not rapidly met." Throughout 1991, with growing concern over the humanitarian situation in the country, the United Nations proposed measures to enable Iraq to sell limited quantities of oil to meet its people's needs.

OFFP was established in April 1995, and the implementation of the program started only in December 1996, after the signing of the Memorandum of Understanding (MOU) between the United Nations and the Government of Iraq on 20 May 1996.

The OFFP was expanded by the Security Council beyond its initial emphasis on food and medicines to include infrastructure rehabilitation and 24 sectors: food, food-handling, health, nutrition, electricity, agriculture and irrigation, education, transport and telecommunications, water and sanitation, housing, settlement rehabilitation (internally displaced persons), mine action, special allocation for especially vulnerable groups, and oil industry spare parts and equipment. The Government of Iraq introduced the following 10 new sectors in June 2002: construction, industry, labor and social affairs, Board of Youth and Sports, information, culture, religious affairs, justice, finance and Central Bank of Iraq. However, OFFP is strictly monitored by United Nations and materials used for military purpose were not approved. As example in health sector, spare parts for high pressure steam sterilizer and HEAP filter to operation room were not approved for purchase.

In the initial stages of the OFFP, Iraq was permitted to sell US\$2 billion worth of oil every six months, with two-thirds of that amount to be used to meet Iraq's humanitarian needs. In 1998, the limit on the level of Iraqi oil exports under the OFFP was raised to US\$5.26 billion every six months, again with two-thirds of the oil proceeds earmarked to meet the humanitarian needs of the Iraqi people. In December 1999, the Security Council removed the ceiling on Iraqi oil exports under the OFFP.

Seventy two percent of Iraqi oil export proceeds funded the humanitarian program, of which 59% was earmarked for the contracting of supplies and equipment by the Government of Iraq for the 15 central and southern governorates and 13% for the three northern governorates, where the United Nations implemented OFFP on behalf of the Government of Iraq. The balance included 25% for a compensation fund for war reparation payments, 2.2% for United Nations administrative and operational costs, and 0.8% for the weapons inspection program.

The Secretary General approved a total of 13 phases until 20 March 2003, when the war intervened and oil exports under the program ended. This program was handover to CPA on 21 November 2003. OFFP exported about 3.4 billion barrels of Iraqi oil valued at about US\$65 billion. (Source: Home Page of United Nations)

In the health sector, a lot of medical equipment was procured in 1998 (5th and 6th phase). This program was to deliver equipment at Jordan-Iraqi border and installation work was not included. However, in some contracts, under table agreement was made and some Iraqi companies made installation instead of the manufacturer. This activity emphasizes the role of private medical equipment companies in Iraq. However, some contracts that could not be included in this kind of arrangement left much equipment without installation.

OFFP contracts, which were controlled by Iraqi Government, required 10% kickback of the contract amount. It is reported that this money used for preparation of the Iraq War¹⁰. However, OFFP for Kurdish area was effectively excluded under UNDG advice.

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4.2 Selection of Candidate Project

4.2.1 Basic Policy of Project Formulation

Basic policy of project formulation is to strengthen secondary health care through reinforcement of district hospitals. In Iraq, primary health care should be considered as the highest priority. As mentioned in section 4.1.2 Outline of Health Sector, function of primary healthcare is essential to protect the health of people. Primary health care and preventive medicine should be emphasized in Iraq. CPA, WHO, and USAID are cooperating in these fields. For implementation of primary health care project, donor needs to visit project area frequently and work together with local people. However, this kind of cooperation is difficult due to the security policy of Japan. Accordingly, the Team set basic policy to strengthen district hospitals which support primary health care. Also, emergency, internal, surgical, pediatric, obstetric, radiology, laboratory (functional, biochemical, hematological, and general) departments are considered as target departments because they are mostly needed for secondary care, and also have important functions to support primary care. The Team included obstetric and children hospitals in the category of district hospital because some district hospital do not have obstetric and pediatric departments and these departments are essential to patients who are not served by primary care.

4.2.2 Analysis of Proposals

The Study Team obtained project proposals and a project list from Ministry of Foreign Affairs through Japan International Cooperation Agency. These project proposals were prepared by Japanese trading firms and general contractors. Total number of proposals was 8. Duplicated proposal elements were combined. Team received 3 additional proposals from Japanese trading firms. Also, through local consultant in Iraq, Iraqi Government and / or a health facility suggested 3 high need projects to Team. Ministry of Health & Social Affairs of Kurdistan Regional Government added to these projects. Thus, "All Projects proposed to the Reconstruction for Iraq on Grant Aid" (hereinafter Long List) become total 18.

These 18 proposals were classified to 3 categories: (1) Proposals for specific hospitals, (2) Proposals to cover wide area and/or unspecified many facilities, and (3) Others. Outline of these proposals are as follows:

- (1) Proposals for specific hospitals (H-1, 3, 6, 12, 13, 14, 15, 16, 17, and 18. Total 10 proposals)

Rehabilitation project for specific hospitals, which were constructed by Japanese company, third Country Company, or Iraqis. Some projects include water supply, drainage, air conditioning, and / or medical equipment. Other projects include only medical equipment. All proposals cover several hospitals. The Health sector's first priority in Iraq should be to strengthen primary health care facilities since it is an essential and urgent issue. However, due to safety reasons, it is difficult to implement grant aid projects which cover primary health care facilities. Furthermore, manpower in primary health care facilities is limited due to safety reasons. Iraq government failed to allocate qualified staff to some facilities. Accordingly, it is needed to implement grant aid project of specified hospitals.

- (2) Proposals to cover wide area and/or unspecified many facilities (H-2, 4, 7, and 11. Total 4 proposals)

It includes projects that cover a wide area and procure equipment for unspecified many facilities. Some proposals specify facilities, and some have unspecified facilities. Team is concerned about unspecified facility proposals because miss allocation or missing equipment is possible. This kind of project is not appropriate to include in the Shortlist. Furthermore, some projects are unclear about operational institutions that receive equipment and implementation activity. Even if facilities are specified, there is some difficulty for transportation and monitoring under current safety conditions. These points should be considered for this study.

- (3) Others (H-5, 8, 9, and 10. Total 4)

There are 2 proposals which propose equipment by itself without any consideration for practical usage. This kind of proposal is not appropriate to Shortlist. Two other proposals, which propose oxygen supply system and health information system, will be evaluated in the next step as candidate of projects to include in the shortlist.

4.2.3 Preparation of Selected Project List

Projects for the shortlist are selected from projects of long list by criteria described below. The evaluation process is shown on Tables 4.2.1 and 4.2.2 Data of these projects were collected through contracted local consultant, UNDG, NGO, distributor of medical equipment, and general information.

Criteria for shortlist selection:

- 1) The project can contribute to strengthen district hospitals.
- 2) There is emergency need and Iraqi Government has priority.
- 3) There is an operational institution and it has enough manpower. Furthermore facility and equipment are used for on going activity.
- 4) Existing medical staff and/or engineer can operate and maintain the facility or equipment with or without some training.
- 5) Iraqi engineer or third country engineer can make installation and handover with supervision of Japanese engineers from a distance.
- 6) There is no duplication from other donor's activity.

Table 4.2.1 Projects Included in the Short List

Long List No.	Project Name							Evaluation
H-1	Rehabilitation of General Hospital in Iraq 13 cities							It is confirmed that Ministry of Health strongly requests support from Japan. These projects include rehabilitation of building facility, which was constructed around 20 years before. It is favorable to implement as a group of 4 or 5 hospitals. It is depends on manufacturer delivery time and capacity of Iraqi company who installs this equipment. Accordingly, this project will be formulated for 3 phases.
H-3	Strengthen Medical Equipment for Teaching Hospitals in Baghdad, Basra, and Mosul							Teaching hospitals are tertiary facility. However, existing circumstances, they should cover secondary care also. Request from Iraqi side was equipment to strengthen their tertiary care. But before that, it is urgent and necessary to strengthen their capability of secondary and basic function. This project will be integrated with H-6 and H-13 on area bases because of implementation and operational reasons.
H-5	Strengthen Oxygen Gas Supply							Needs of medical oxygen gas is indicated form MOH and WHO. The project will be formulated to alleviate lack of oxygen supply.
H-6	Strengthen Medical Equipment for Main Hospitals in Baghdad and Basra City							This project strengthens secondary health facility in 2 big cities. It includes tertiary hospital. They will be included by the reason of same as H-3. And this project will be integrated with H-6 and H-13 on area because of implementation and operational reasons.
H-12	Strengthen Medical Equipment for Main Hospitals in Mosul City.							This is project to strengthen secondary health facility in Mosul city. It includes tertiary hospital. They will be included by the reason of same as H-3.
H-13	Strengthen Medical Equipment for Mother and Child Hospital in Governorate							Priority for mother and childcare is confirmed by MOH. However, it is confirmed that CPA is implementing some mother and child hospital rehabilitation project. To avoid duplication from CPA project, only Samawah and Karbarla were selected. Implementation and operational reasons, this project will be formulated with integration of H-6.
H-14	Strengthen Medical Equipment for District Hospital in Governorate							Secondary care has priority on MOH policy. And there is a high need for equipment supply.

Table 4.2.2 Dropped Projects from the Short List

Long List No.	Project Name							Evaluation
H-2	Strengthen Ambulance Network for Emergency Medical Services	-	-	-	-	-	-	This project is formulated and implemented by JICS. The Team does not work on this project.
H-4	Strengthen Medical Facilities in Iraq			×				This project is to procure bed for health facility all over Iraq. It covers large area and it is difficult to identify the facilities and numbers to provide bed. Furthermore, there is difficulty for transportation and monitoring.
H-7	Establishing Mobile Health System for Mother, children and emergency patient	×		×	×			The facilities that are planned to allocate mobile health unit are not doing outreach activity now. Accordingly, it is difficult to implement new activity on this point.
H-8	Establish Health Information Network			×	×	×		WHO indicates importance of communication and health information. However, proposed information system is comparatively large scale and complicated. This complicated system will be difficult to operate by Iraqi only. Furthermore, WHO is implementing information pilot project in Mosul Area.
H-9	Fuel Cell Power Plant		×	×	×			This is proposal of equipment, not as project. There is no specific plan for project. And Team can not formulate appropriate project based on this information.
H-10	Mobile Hospital Unit	×	×	×	×			This is proposal of equipment, not as project. There is no specific plan for project. And Team can not formulate appropriate project based on this information.
H-11	Strengthen Primary Health Care in Iraq	×		×	×			This is proposal of mobile health unit for X-ray and primary health care. An institution that receives this equipment and operates the activity is not confirmed. As long as Team knows, there is no information that this kind of activity is implemented in Iraq. Although, the Team confirmed that MOH eager to implement this kind of activity but detail of plan is not yet established.

4.2.4 Evaluation of Shortlisted Projects

Table 4.2.1 shows the 7 shortlisted projects. Because some are complex projects involving several phases (such as the 3 project phases for Rehabilitation of General Hospital in 13 cities), they have been repackaged into 8 revised shortlist projects as shown in Table 4.2.14. The final contents of the revised shortlist projects are described in detail below.

(1)~(3) H-1 ~ 3 Rehabilitation of General Hospital in Iraq 13 cities (First phase to third phase)

1) Background of project formulation

It is widely accepted that, when urgency is of great importance, cooperation towards health sector should, above all, be directed to primary health care including infectious diseases

and mother and child cares, in terms of cost-effectiveness. CPA, WHO and other international organizations set forth to have cooperation towards primary health centers but met with many difficulties, such as shortage of staff, pharmacy, medical supplies, lingering public unrest, etc. Iraqi people now visit General Hospital of governorate level, more often than Health Centers, situated at 1,570 sites nationwide, which are not functioning properly. Those General Hospitals remain unchanged and have had no major renovations for 20 years, due to inappropriate investment policy by Hussein administration and to the economic sanctions taken by the UN in 1990. The situations surrounding General Hospitals have not changed since the late 1970's, when Hussein administration started health sector reform with oil money capital. Today, renovation work of General Hospitals is most urgently needed.

13 General Hospitals were constructed and handed over in 1980's by a Japanese company. They were designed using Japanese standard (JIS) and almost all the equipment, drain pump, generator, medical equipment, bed, curtain, etc. are Japanese products, with exception of some medical products made in foreign countries. It is highly reputed by many medical staff that Japanese and Iraqi engineers worked together for hospital operation and maintenance for 6 years after handover.

Impact of economic sanction on Iraqi medical facilities was so enormous, causing shortage of medical supplies, consumables and forcing the Japanese engineers to leave Iraq. Some medical equipment were procured under OFFP by the UN but some spare parts for sterilizer, filter for reverse osmosis apparatus, HEPA filter used in operation theatre, etc were not allowed to be procured by OFFP's own regulations. Inappropriate health policy by Hussein administration has also deteriorated the quality of health services in General Hospitals, e.g. a hospital is equipped with MRI while its general x-ray machine is left not repaired.

Renovation of 13 General Hospitals shall be regarded as restoration of medical function and a short term measure, and, in a medium and long term, as construction of referral system between general hospital and primary health facilities, and then establishment of a position of general hospital as a secondary health facility.

2) Target sites

Situated in each governorate, 13 General Hospitals cover 13 out of 18 of governorates nationwide, as shown in Table 4.2.3. Ministry of Health, CPA and many other people expect renovation of 13 General Hospitals by Japan since they were built by a Japanese company, and Japanese engineers worked for operation and maintenance, and Japanese government officials already visited some of the General Hospitals and explained about possible assistance by Japan.

Table 4.2.3 13 Hospitals

	Name	Governorate	Population
1	Al-Nassiria General Hospital	Dhi Qar	1,519,490
2	Samawa General Hospital	Muthanna	549,259
3	Al-Diwaniya General Hospital	Qadisiyah	904,445
4	Al-Sader Teaching Hospital	Najaf	940,966
5	Al-Zahra General Hospital	Maisan	836,639
6	Al-Sader General Hospital	Wasit	927,166
7	Al-Kadhamiya Teaching Hospital	Baghdad	6,408,160
8	Al-Rumadi General Hospital	Anber	1,254,241
9	Al-Tikreet General Hospital	Salahuddin	961,577
10	Azadi General Hospital	Taamin	869,246
11	Rizgari Teaching Hospital	Erbil	1,316,162
12	Al-Salam General Hospital	Ninevah	2,486,466
13	Al-Azadi General Hospital	Dohuk	807,005
Total			19,780,822

Outline of the target sites

Design of 13 General Hospitals is the same, although area of the land varies from one to another. In the premises, there are: 1) main building, 2) central energy centre, 3) equipment maintenance ward, 4) mortuary, 5) doctor's residence, 6) parking lot, 7) pump room, 8) sewage treatment room, 9) reservoir tank, and 10) gate house.

Main building

Main building, made of reinforced concrete, with 7 floors plus 1 basement level, has a total floor space of 22,960 m². Purpose of each floor is as follows:

Basement: Kitchen, dining hall, laundry, storage for medicine/medical supplies, food storage, reverse osmosis water treatment facility, medical record storage, mechanical room 1 (boiler related equipment), mechanical room 2 (medical gas related equipment).

1st floor: Outpatient department (surgical, internal, ENT, ophthalmology, dental, obstetrics and gynecology, pediatrics, dermatology), radiology department, laboratory department, rehabilitation department, emergency department, and pharmacy, reception, director's room, locker room, etc.

2nd floor: 5 operation rooms, recovery room, central sterilization supply department, 8 ICUs, and inpatient wards.

3rd floor: 1 operation room, 4 delivery rooms, labor room, new-born infant room as a specialized section of Obstetrics and gynecology department and new-born treatment room.

4th to 7th floor: 75 inpatient wards.

Central energy centre

Central energy centre is one-story house, made of reinforced concrete, with a floor space of 1200 m². There are a central automatic control room, high voltage/low voltage distribution panels, 4 transformers, 3 emergency generator (680 KVA x 3), water softener, 3 boilers, 3 chillers and, at the rooftop, 3 cooling towers.

Maintenance wards

Within an area of 500 m² there is a storage for spare parts/consumables (200 m²) and engineer's office and repair room (300 m²).

Of 13 General Hospitals, the 5 Hospitals (Nasyria, Najaf, Kadhimiya, Tikrit and Erbil) were handed over in 1984 and the 8 Hospitals (Amara, Kut, Samawa, Diwaniya, Ramadi, Kirkuk, Mosul and Dohuk) in 1986.

Conditions of the target sites

20 years have passed since handing over of 13 General Hospitals and the conditions of each hospital has also changed. As shown in Table 4.2.4, which is based on the questionnaire presented to each site, some hospitals have more than 1000 staff and others 500 personnel working. Even though every part of the answer sheet is not reliable, it shows a great progress in public information compared to the situations in Saddam era when it was impossible to obtain such information.

Buildings

All the hospitals have had no major modifications since the handing over except Kadhimia Hospital. It became an attached hospital to Saddam Medical College serving some 2 million people in the area. It added 260 beds and 10 operation rooms in 1990 by the budget of the Ministry of Health. The enlarged radiology department was equipped with MRI and CT scanner.

Departments

Due to shortage of staff and for more effective use of facility, Nasyria, Samawa, Diwaniya, Najaf, Ramadi and Erbil closed the obstetrics and gynecology department and transferred its function to a specialized mother and child clinic nearby. Dohuk and Erbil also closed the emergency department.

General facilities

Water supply and sewage treatment: All the hospitals need sewage treatment system except Kadhimiya Hospital, for which discharge to a river is permitted. Yet, the system works only in 3 hospitals: Kut, Samawa and Duhok. Spare parts for pump systems are older than its service life and need to be renewed. Heat exchanger for hot water installed in the basement floor is not working at all of the target sites due to breakdown of boilers.

Air conditioning: Original chiller is not working in 13 hospitals. Only 1 unit out of 3 chillers procured by OFFP is functioning due to shortage of power (shortage of transformer capacity). No boiler units are working.

Electricity:

Approximately 50% of generator is working. As the frequency of blackout has increased since the last May. They are overworking and need to be replaced.

Medical facilities

Reverse osmosis water treatment apparatus: This water treatment device for operation room, central sterilization supply department, laboratory department, etc. is not functioning since spare parts and consumables are not available due to the economic sanctions in 1990.

Pipe system for medical gas: Pump and tank installed in the basement floor for making compressed air have become too old for use. Manifold for oxygen and nitrous oxide are also very old. As many as 80% of medical gas outlets at inpatient wards are old and out of order.

Medical equipment

OFFP procured some medical equipment but it was based on a wrong equipment plan made during Saddam era, e.g. priority in procurement of MRI or CT before renewal of basic equipment such as general x-ray machines, ECG, etc. Sterilizer and hand washing units, which are necessary to prevent infectious diseases, also stopped working.

3) Contents of the Project

Rehabilitation project for 13 General Hospitals aims at improvement of hospital function and its services for patients. For that purpose, renewal of general facility, medical facility and medical equipment shall be included in the Project. The Project content is shown in Table 4.2.4.

General facilities

Water supply and sewage treatment

Sewage treatment system shall be repaired. Water supply pump and drain pump shall be renewed. Heat exchanger for making hot water shall be rehabilitated, except for that of kitchen.

Air conditioning

3 chillers, 2 boilers, and 3 cooling towers shall be repaired to secure 65% to 70% of air conditioning capacity. Condition of operation room shall be secured to prevent infection.

Table 4.2.4 Activity in 13 Hospitals

Hospital	Al Nasirya GH	Samawa GH	Al Diwaniya GH	Sadar Educational Hospital	Zahara GH	Sadar GH	Al Kadhimya Educational Hospital	Al Ramadi GH	Tikrit GH	Azade GH	Rizagari Educational Hospital	Saram GH	Azade GH
City	Nasirya	Samawa	Diwaniya	Najaf	Amara	Kut	Baghdad	Ramadi	Tikrit	Kirkuk	Erbil	Mosul	Dohuk
Director	Dr.Saady Al-Majid	Dr.Rasul Aziz Maala	Dr.Hussein Hatif Yamer	Dr.Safaan Al-Amidy	Dr.Ridha Alwan Al-Hashimy	Dr.Qasim Hhassen Hameed	Dr.Kais Abdul Wehab	Dr.Qusai Najim Abdulla Al-Rawi	Dr.Nasseer Al-Rawai	Dr. Pakshan M.Baker	Dr. Mathaffaf Al-Rahman Habib	Dr.Baheej M. Al-Khaleel	Dr.Sabir M.Ameen
Chief engineer	Mr.Khalid Fakhr	Mr.Muhamed Abud Hussin	Mr.Suheal Hami	Mr. Haqey Ismaiel	Mr.Kareem Abdulla	Mr.Adnan Jaber	Mr.Khalid Matasher	Mr.Saeed Yahea Jasim	Mr.Naseem Tahar	Mr.Abbas Asi Rashid	Mr.Rupak G.Younis	Ms.Nawal Taha	Mr.Hameed Fattah
Number of bed	400	400	400	400	400	400	660	400	400	400	400	400	400
Number of staff	900	-	808	1001	499	700	-	-	479	790	920	1029	-
Doctor	47	35	49	89	36	61	149	53	55	84	44	107	36
Specialized	8	55	44	10	7	3	6	112	6	12	85	26	11
General	2	2	1	2	6	1	5	3	3	2	3	6	1
Dentist													
Nurse	302	154	41	299	72	43	97	4	9	31	150	52	95
Registered	36	11	159	82	22	207	183	126	19	12	92	4	9
Assistant	14	11	7	22	14	36	11	13	9	14	3	22	7
Pharmacist	26	23	41	104	29	49	54	18	4	12	132	37	21
Laboratory engineer	17	9	16	19	12	7	21	13	3	13	38	4	7
Radiology engineer	1120	890	285	560	940	485	499	810	288	285	385	1092	202
Avg. number of outpatient/day	87	165	147	90	99	86	83	43	47	79	63	117	177
Avg. number of inpatient admitted/day	240	260	80	150	75	136	140	250	-	-	20	319	Department closed
Avg. number of emergency patient/day	33	26	34	30	22	20	21	23	15	13	29	27	16
Avg. number of operation/day	360	233	850	230	160	611	184	212	104	155	215	710	600
Avg. number of lab test/day	-	72	115	142	140	60	224	162	85	210	202	246	112
Avg. number of radiological diagnosis/day	Department closed	Department closed	Department closed	Department closed	Department closed	Department closed	Department closed	Department closed	Department closed	Department closed	Department closed	Department closed	Department closed
Number of delivery/year													
Normal delivery					4440	2616	3005		4320	388		8773	2330
Caesarean section					780	1140	790		2880	288		2330	1420
Curettage					600	240	67		100			304	115

Electricity

2 outdoor transformers shall be installed to operate 3 chillers normally. Operation of 2 generators shall be secured to supply power to electrical equipment in the event of blackout excluding air conditioners. Operation of 2 passenger lifts and 2 bed lifts shall be secured.

Medical facilities

Medical gas

Medical gas and the outlet used in the 1st, 2nd, and 3rd floor of main building shall be rehabilitated to enable to use oxygen, nitrous oxide and compressed air in the room.

Reverse osmosis water treatment apparatus

The water treatment device used in the laboratory, operation and emergency department shall be repaired. Hand washing unit installed in front of operation room, including the operation room in obstetrics and gynecology department, if any) shall also be rehabilitated to prevent infection.

Medical equipment

Laboratory

Equipment shall be procured for biochemical and hematology sections and others. Microscope, water still, centrifuge, blood bank, etc. shall be planned, based on their activity and present conditions.

X-ray machine

Each hospital shall have at least 1 general x-ray machine, 1 fluoroscopy x-ray machine, 1 automatic film developer.

Operation room, Central sterilization supply department

Each hospital shall at least 3 operation rooms that function properly. 3 sterilizers shall be working. Number of operation at each hospital shall be examined in making the equipment plan.

Obstetrics and gynecology department

No equipment shall be planned for those hospitals that closed the Obstetrics and gynecology department. 1 operation room and 3 delivery rooms shall be planned.

ICU

ICU is heavily used at most of the 13 hospitals. Equipment plan shall be made to run 8 ICU room properly.

NICU

No equipment shall be planned for those hospitals that closed the NICU department. As many donors supplied equipment for this department, equipment planning shall be made carefully.

Outpatient department

This department is the most frequently used by patient. Equipment planning has been made according to the actual activities of each hospital.

4) Implementation method

Implementation plan for Rehabilitation project for 13 General Hospitals shall be made without Japanese supervisor, contractor and engineer entering Iraq; instead Iraqi supervisors, engineers, etc. shall be used.

- Phases

Considering the capability of Iraqi company that can handle installation work for the Project, installation work for 4 to 5 hospitals can be done simultaneously. It is already accepted by the Ministry of Health and CPA that Phase 1 shall cover the southern area, which is relatively safer and, in Saddam era, were not treated well. A period of 4 months shall be necessary for one phase including installation.

Phase 1 Nasyria, Samawa, Diwania, Najaf

Phase 2 Amara, Kut, Kadhimia, Ramad, Tikrit

Phase 3 Kirkuk, Erbil, Mosul, Duhok

- Detail Design

No assistance plan for 13 General Hospitals by other donors has been confirmed. As many donor countries like the United States usually plan the contents of assistance first and then decide the target sites later, reconfirmation of the equipment at the implementation stage of this Project shall be necessary.

- Confirmation of Tender Document

International cooperation needs to be approved by the Iraqi Ministry of Health. Approval on the tender documents is necessary by director of each hospital, director of health department at governorate level, chief of department in charge of facility management in the Ministry of Health and finally by the Minister of Health.

- Conditions of Tender

The Project includes procurement and installation of general facility, medical facility and medical equipment. Some of the equipment is the product of a specific manufacturer. Therefore, to secure competitiveness of the tender, the specific manufacturer shall promise to submit a quote to more than 2 tenders. There shall be no free contract by separate manufacturers. Successful contractor shall be required to sign a consignment contract with Iraqi company that can handle the installation work. Capability of the company in charge of installation work shall also be confirmed by pre-qualification stage before tender.

(4) H-4 Strengthen Medical Equipment for District Hospital in Governorate

1) Background

Function of district hospital is to receive patients that could not be cured at primary health care level. This function is very important for people and also primary health care. Currently, primary health care is not functioning and patients come to district hospitals directly. For a while these district hospitals should take care of all people who come to hospital until primary health care starts to function smoothly. Economic sanctions of longer than 10 years were a big obstacle to maintain facilities and equipment in good condition. This situation has become an obstacle to supply basic medical care to people. OFFP replaced and rehabilitated some of the obsolescent equipment and facilities. However, fundamental problems are not yet solved. Accordingly, this project will strengthen district hospital as secondary level health facilities.

2) Target facility

Iraq is divided to 18 governorates of which capital cities are the most populated ones in Iraq. Adding the two cities of Samara in Salahudin governorate and Falluja in Anbar governorate, as the populated cities, to the 18 cities, the most populated cities becomes 20. Here the rehabilitation of 13 general hospitals covers the 13 of 20 cities. Also Basura city is not a target of the medical equipment for district hospital in governorate because the city has the plan to mobilize the medical equipment. Therefore, the target facilities are general hospitals for Sulaimaniya, Baquba, Samarra, Falluja, Hilla and Karbara.

These hospitals do not have duplication from other donors. However, since CPA usually plans the contents of assistance first and then decides the target sites later, it is important to consider equipment or financial assistance.

Target facilities are General hospitals for Sulaimaniya, Baquba, Samarra, Falluja, Hilla and Karbara. Bed numbers are between 147 - 350, medium size hospitals. Populations of these towns are 200,000 to 640,000. They have internal, surgical, pediatric, obstetric, and emergency department except Baquba, Karbara, and Hilla. These towns have another obstetric hospital. Numbers of staff to these hospitals are sufficient and activity is typical. Outline of hospital conditions are shown in Table 4.2.5. However, our local consultant could not collect some of the data due to limited capability of hospital statistics system and Iraqi culture where such information is not disclosed by local people.

3) Equipment Plan

Requirement list, existing equipment list and result of repair work list were collected through local consultant. The Team assessed these lists and prepared equipment plan based on following criteria.

- Equipment needed for basic diagnostic and treatment

- Basic or closely related basic equipment to internal, surgical, pediatric and obstetric department.

- Equipment which can be maintained easily.

- Equipment for which consumables can be procured in Iraq.

- Equipment which does not require big operational cost.

All facilities requested some equipment which does not match Grant Aid system such as CT, MRI, Angiography, Lithotripter, etc. The Team did not include this equipment in the plan. Also, extension of buildings, rehabilitation of buildings and facilities were not included in the plan.

Operation and maintenance knowledge to latest medical equipment are limited in Iraq because of over 10 years of economic sanctions. Operational procedures can be trained by instruction of supplier at the time of installation and delivery. However, additional training is required to hospital maintenance staff. This training is planned as soft component of the project. Workshops for equipment maintenance management and periodical maintenance procedure will be held in Amman because of security reasons for Japanese consultants. The contents of this workshop should be carefully designed for continuous maintenance work by Iraqi engineers.

Table 4.2.5 Outline of District Hospitals

Hospital Name	Samarra General Hospital	Baquba General Hospital	Falluja General Hospital	Al-Hussein General Hospital	Hilla General Hospital	Sulaimaniya General Hospital
City Name	Samarra	Baquba	Falluja	Karbala	Hilla	Sulaimaniya
Governorate	Salahuddin	Diyala	Anbar	Karbala	Babil	Sulaimaniya
Coverage population						
City *1	201,000	280,000	256,000	549,000	524,000	
Whole governorate *2	976,120	1,271,310	1,270,952	741,744	1,408,730	1584638
Bed number	147	350	200	300	350	300
Doctor	48	212	59	173	177	
Nurse	145	243		437	313	
Pharmacist	8	12	17	63		
Engineer		2	2	9	11	
Total Staff	288	700	400	975	1052	550
Department	Internal, Surgical, Pediatric, Obstetric & Gynecology	Internal, Surgical, Pediatric, Obstetric & Gynecology, Ophthalmology, Urology, Rehabilitation, Dental	Internal, Surgical, Orthopedic, Pediatric, Obstetric & Gynecology, Dermatology, Ophthalmology, ENT, Rehabilitation, Anesthesia, Dental	Internal, Surgical, Pediatric, Obstetric & Gynecology, Ophthalmology, ENT, Rehabilitation, Dental	Internal, Surgical, Pediatric, Obstetric & Gynecology, Dermatology, Ophthalmology, ENT, Rehabilitation, Dental	Internal, Surgical, Pediatric, Obstetric & Gynecology, Ophthalmology, Urology, Rehabilitation, Dental
Number of outpatient per day (per day)	500	800	737	110	600-650	-
Number of inpatient per year	-	-	19,055	-	-	-
Average length of stay	-	-	2.3	3.3	-	-
Bed occupancy rate	-	-	62%	38%	-	-
Major diseases	-	-	Diabetes, High blood pressure, Cardiovascular diseases, Cardiac Failure, Heart failure	-	-	-

Table 4.2.5 Outline of District Hospitals (continued)

Hospital Name	Samarra General Hospital	Baquba General Hospital	Falluja General Hospital	Al-Hussein General Hospital	Hilla General Hospital	Sulaimaniya General Hospital
Major cause of death	-	-	Cancer, Cardiovascular diseases, Cardiac Failure, High blood pressure	, Cardiovascular diseases, Hear failure, Angina Pectoris, Renal Failure, Anemia	-	-
Number of operation (per month)	-	-	228	412	-	-
Obstetric activity	-	-		(No Obstetric & Gynecology)	-	-
No. of normal delivery			4,920			
No. of cesarean section			1,080			
X-ray	-	-	18,100		-	-
Ultrasound test	-	-	2,300		-	-
Endoscopy	-	-		1,143	-	-
Blood test	-	-	30,000		-	-
Bacterology test	-	-	420	2,400	-	-
General test	-	-	6,000	11,200	-	-
Year budget	-	-	Approx. US\$21,000	-	-	-

Source : Questionnaire

*1 : <http://www.library.uu.nl/wesp/populstat/Asia/iraqt.htm>

*2 : Communicable Diseases Profile Iraq, WHO, March 2003

(5) H-5 Strengthen medical Equipment for main hospitals in Southern Area

1) Background

Basra city is capital of Basra Governorate and population is 1.98 million. This is the third largest governorate in Iraq. There are 12 hospitals in this city, and Basra University that has a faculty of medicine and Al-Sadel hospital is the teaching hospital of this university. Currently, referral system of Iraq is not functioning and many patients come directly to hospitals to get treatment. It is a priority to reestablish referral system and get it functioning. Economic sanctions of longer than 10 years were a big obstacle to maintain facilities and equipment in good condition. This situation has become an obstacle to supply basic medical care to people. OFFP replaced and rehabilitated some of obsolescent equipment and facilities. However, fundamental problems are not yet solved. Accordingly, this project strengthens this hospital's function of secondary level health facility.

Karbala and Samawah are capital of governorate in south area. Population is 740,000 and 560,000 each. Their General hospitals do not have obstetric departments. Accordingly, obstetric and children hospitals of these area are to be strengthened by this project because obstetrics is an essential function for secondary level.

Outline of these hospitals are shown on Table 4.2.6. However, our local consultant could not collect some of the data due to limited capability of hospital statistics system and Iraqi culture where such information is not disclosed by local people.

Table 4.2.6 Outlines of Hospitals in Southern Area

Hospital Name	Al-Sadel Teaching Hospital	Basra Obstetric and Children Hospital	Karbala Obstetric and Children Hospital	Samawah Obstetric and Children Hospital
City Name	Basra		Karbala	Maisan
Governorate	Basra		Karbala	Samawah
Coverage population				
City 1987 *1	406,296		296,705	-
City 2002 *2	1,337,000		549,000	124,000
Whole governorate *3	1,954,698		741,744	549,259
Location *4	South East of Baghdad approx. 545 km. South part of Iraq.		South of Baghdad approx. 80 km. West of Hilla 45 km.	South of Baghdad approx. 210 km.
Bed number	471	400	142	260
Staff				
Doctor	190	66	34	24
Nurse	200	252	40	114
Pharmacist	-	-	8	10
X-ray technician	200	-	6	10
Labo. technician	-	13	30	30
Engineer	-	-	11	2
Total Staff	1,000	540	249	205
Department	Surgical, Orthopedic, ENT, Ophthalmology, Neurosurgery, Chest surgery	Obstetric, Pediatric, Hematology, Rehabilitation	Obstetric, Neonatal	Obstetric, Pediatric
Number of outpatient per day (per day)	487	188	192	391
Number of inpatient per year	17,575	47,298	4,320	21,038
Number of operation (per month)	495	95	300	258

Table 4.2.6 Outlines of Hospitals in Southern Area (continued)

Obstetric activity	(No Obstetric Dept.)			
No. of normal delivery		10,084	400 - 600	3,922
No. of cesarean section		2,784		2,491
No. of abortion		15,000		1,029
No of still birth		822		92
X-ray	-	1,894	-	353
Ultrasound test	10,937	16,850	-	4,357
Endoscopy	2,144	-	-	-
Blood test	298,085		84,000	
Hematology		192,000		2,155
Biochemistry		4,000		2,033
Blood gas		-		-
Electrolyte		720		-
Hospital Name	Al-Sadel Teaching Hospital	Basra Obstetric and Children Hospital	Karbala Obstetric and Children Hospital	Samawah Obstetric and Children Hospital
Bacterology test	-	17,000	24,000	903
General test	-	18,000	18,000	31,120
Budget (monthly)	US\$107,142	US\$10,714 - US\$17,857	-	-

Source : Questionnaire

*1 : <http://unstats.un.org/unsd/citydata/default.asp?contid=4&cid=368>

*2 : <http://www.library.uu.nl/wesp/populstat/Asia/iraqt.htm>

*3 : Communicable Diseases Profile Iraq, WHO, March 2003

*4 : <http://www.globalsecurity.org/military/world/iraq/city.htm>

2) Target facility

Facilities were selected based on size, background of establishment, and suggestions from CPA South. At first, Al-Sadel Teaching Hospital, Al-Mawani Hospital, Basra General Hospital, and Basra Obstetric and Children Hospital were candidates. Based on evaluation, Al-Sadel Teaching Hospital and Basra Obstetric and Children hospital were selected.

Table 4.2.7 Hospitals in Basra City

No.	Hospital Name	Bed Number
1	Saddam General Teaching Hospital (now Renamed Teaching Hospital)	449
2	Al-Basrah Maternity & Pediatric Hospital	400
3	Al-Basrah Hospital Ports Administration	400
4	Al-Saadoon Private Hospital	50
5	Ibn Al-Bitar Private Hospital	30
6	Al-Noor Private Hospital	15
7	Al-Basrah Military Hospital	Not Available
8	Al-Basrah Ibn Najed Naval Hospital Military Hospital	Not Available

Source : UN Health Facilities Overview Iraq

3) Equipment Plan

Requirement list, existing equipment list and result of repair work list were collected through local consultant. The Team assessed these list and prepared equipment plan based on the following criteria:

Equipment needed for basic diagnostic and treatment

Basic or closely related basic equipment to internal, surgical, pediatric and obstetric department.

Equipment which can be maintained easily.

Equipment for which consumables can be procured in Iraq.

Equipment which does not require big operational cost.

All facilities requested some equipment which does not match Grant Aid system such as CT, MRI, Angiography, Lithotripter, etc. The Team did not include this equipment in the plan. Also, extension of buildings, rehabilitation of buildings and facilities were not included in the plan.

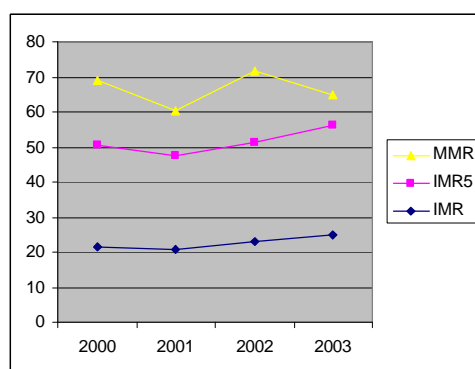
Operation and maintenance knowledge to latest medical equipment are limited in Iraq because of over 10 years economic sanctions. Operational procedures can be trained by instruction of supplier at the time of installation and delivery. However, additional training is required to hospital maintenance staff. This training is planned as soft component of the project. Workshops for equipment maintenance management and periodical maintenance procedure will be held in Amman because of security reasons for Japanese consultants. The contents of this workshop should be carefully designed for continuous maintenance work by Iraqi engineers.

(6) H-6 Strengthen Medical Equipment for Main Hospitals in Mosul City

1) Background

Health condition of Ninevah Governorate

Ninevah Governorate is second most populated area in Iraq. Its population is 2,468,884. Mosul city is capital of Ninevah Governorate, second most populated city in Iraq and its population is 1,739,000¹¹. Trend of major health indicators (MMR, IMR, and IMR5)¹² are shown in Fig 4.2.1.



Source: Questionnaire

Figure 4.2.1 Trend of Health Indicator of Ninevah

¹¹ www.globalsecurity.org/military/world/iraq/city.htm

¹² MMR: Maternal Mortality Rate per 100,000 live births, IMR / IMR5: Infant Mortality Rate per 1,000 live birth death. IMR is less than 1 year old and IMR5 is less than 5 years old.

The trend is decreasing for MMR but increasing for IMR and IMR5.

Statistics of diseases patterns is not complete. Outline of them are shown in Table 4.2.8. In the case of children, communicable diseases are major causes of death, but in the case of adults, chronic diseases are major causes of death.

Table 4.2.8 Major Diseases and Cause of Death in Ninevah Governorate

Age	Major Diseases	Major Cause of Death
Adult	High blood pressure, Diabetes, Tumor	Hear failure, Tumor, Kidney malfunction, Diabetes
Children	Respiratory infection, Diarrhea	Respiratory infection, Diarrhea

Source: Questionnaire

Health facilities in Mosul City

There are 8 public hospitals, 4 private hospitals, and 87 health centers. Hospitals are listed in Table 4.2.9.

Table 4.2.9 Hospitals in Mosul City

No.	Hospital Name	Bed No.
1	Ibn Al Athir Maternity and Children Hospital	529
2	Al Zahrawi for Surgical Teaching Hospital	520
3	Al Razi Hospital	476
4	Al Khansaa Maternity & Children Hospital	329
5	Ibn Sina Teaching Hospital	200
6	Al Batool for Gynecology & Obstetrics Hospital	177
7	Al Kamaliya for Infectious Diseases Hospital	100
8	Hazem Al Hafez (Oncology and Nuclear Medicine) Hospital	30
9	Mosul General Hospital	186
10	Al Rabi' Private Hospital	No Information
11	Al Rahmah Private Hospital	No Information
12	Ninawa Private Hospital	No Information
13	Al Zahrawi Private Hospital	No Information

Source: UN Health Facilities Overview Iraq

Human resources of Ninevah Governorate

Table 4.2.10 shows human resources of health sector of Nivevah Governorate. The number of nurse is a serious problem because it is almost same number as doctors, and most of them are trained in intermediate nursing school, 3 years after graduation of junior high school.

Table 4.2.10 Human Resources of Ninevah Governorate

Category	Number
(Doctor)	
GP	532
Specialist	524
Dentist	329
(Nurse)	
B.Sc. Nurse	11
Institute graduate and intermediate nurse	1,146
Midwife	2
Pharmacist	167
X-ray technician	282
Physiotherapist	12
Office worker	148
Engineer	103
Technician	76

Source: Questionnaire

2) Target facilities

Candidate facilities to this project were Al-Kansa Hospital, Mosul General Hospital, Ibn Sina Teaching Hospital, Al Zawei Hospital, Al-Batool Obstetric and Children Hospital, and Ibn Al Ather Obstetric and Children Hospital. Mosul General Hospital is a former military hospital. All hospitals except private hospitals have changed to public by new regulation.

Local consultants found that Al Zawei Hospital and Ibn Al Ather Obstetric and Children Hospital are going to be rehabilitated by CPA. Accordingly, the remaining 4 hospitals become target hospitals of this project. Economic sanctions of longer than 10 years were a big obstacle to maintain hospital facilities and equipment in good condition. This situation has become an obstacle to supply of basic medical care to people. OFFP replaced and rehabilitated some of obsolescent equipment and facilities. However, fundamental problems are not yet solved.

Al-Kansa Hospital and Ibn Sina Teaching Hospital are top referral hospital of Ninevah area. Currently, referral system of Iraq is not functioning and these hospitals are not functioning as top referral hospitals. Ibn Sina Hospital is located in northeast area of Mosul city. Al Kansa Hospital is located on southwest area. Both of them are functioning as district hospital of these areas and need to have secondary care capability (internal, surgical, pediatric, and obstetric) of these hospitals urgently strengthen.

Al-Batool Obstetric and Children Hospital is also functioning district hospital as cover the area. Because these not only function as the obstetric and children hospital but also the emergency hospital of this area.

Outline of target hospitals are shown on Table 4.2.11. However, our local consultant could not collect some of the data due to limited capability of hospital statistics system and Iraqi culture where such information is not disclosed by local people.

Table 4.2.11 Outline of Target Hospitals

Hospital Name	Al Kansa Obstetric & Children Hospital	Mosul General Hospital	Ibn Sina Teaching Hospital	Al Batool Obstetric & Children Hospital
City Name	Mosul			
Governorate	Ninevah			
Coverage Population (Population of City)				
1987 *1	664,221			
2002 *2	1,739,000			
Whole Governorate Population*3	2,486,466			
Location *4	North part of Iraq, 400km north from Baghdad			
Bud Number	329	186	200	177
Staff				
Doctor	93	121	65	78
Nurse	118	337	24	67
Pharmacist	-	6	11	3
X-ray Technician	-	19	20	4
Laboratory Technician	-	30	63	36
Technical Staff (engineer)	-	12 (2)	22 (6)	6 (2)
Total Staff	528	-	213	-
Department	Obstetric, Pediatric	Internal, Surgical, Pediatric, Orthopedic, Ophthalmology, ENT, Dermatology, Psychiatric, Dental	Internal, Pediatric, Neurosurgery, Hematology, Nephrology, Chest surgery, Psychiatric, Neurology, Rehabilitation	Obstetric and Gynecology, Neonatology
Number of Out Patients	821 per day	465 per day	751 per day	161 per day
Number of Inpatient	37,264	-	20,891	20,215
Average Length of Stay	2 days	-	-	2 days
Bed Occupancy Rate	62%	-	-	62.5%
Major Diseases	Acute respiratory infection,		Digestive system diseases, Respiratory	
Major Cause of Death	Neonatal sepsis, RDS, Heart		Neurological system diseases, Urinary	
Number of Operation (per month)	366		60	373
Obstetric Activity		(No obstetric department.)	(No obstetric department.)	
Number of Normal Delivery	17,539			12,445
Number of Cesarean Section	1,210			2,125
Abortion	1,380			614
Still Birth	312			
Number of X-ray	8,080	Approx. 15,600	22,715	1,001
Number of Ultrasound Diagnostic	7,410	-	8,799	13,341
Number of Endoscopy	98	-	2,298	-
Blood Test		Approx. 11,250		36,343
Hematology	62,241		140,500	
Biochemistry	1,565		81,351	
Blood Gas	25		-	
Electrolyte	180		19,398	
Bacteriology	12,300		11,219	
Pathology Test	1,018		-	
General Test	3,780		19,573	
Budget	580 thousand dollar	105 thousand dollar	587 thousand dollar	102 thousand dollar

Source: Questionnaire

*1: <http://unstats.un.org/unsd/citydata/default.asp?Contid=4&cid=368>

*2: <http://www.library.uu.nl/wesp/populstat/Asia/iraqt.htm>

*3: Communicable Diseases Profile Iraq, WHO, March 2003

*4: <http://www.globalsecurity.org/military/world/iraq/city.htm>

3) Equipment Plan

Requirement list, existing equipment list and result of repair work list were collected through local consultant. The Team assessed these lists and prepared equipment plan based on following criteria:

Equipment needed for basic diagnostic and treatment

Basic or closely related basic equipment to internal, surgical, pediatric and obstetric department.

Equipment which can be maintained easily.

Equipment for which consumables can be procured in Iraq.

Equipment which does not require big operational cost.

Operation and maintenance knowledge of latest medical equipment are limited in Iraq because of over 10 years economic sanctions. Operation procedures can be trained by instruction of supplier at the time of installation and delivery.

(7) H-7 Strengthen Medical Equipment for Main Hospitals in Baghdad City

1) Background

Baghdad city is capital of Iraq with population of 6,408,160 people (source: communicable Disease Profile Iraq, WHO, March 2003). There are 80 hospitals in this city. Baghdad city is divided into east and west side by Tigris River.

East side is expanding to east and called Rusafa. Due to the increase of the population, it is expanding to northeast area and it is called Saddle city (former Saddam City). There is a medical complex that is called Medical City beside the Tigris River. This is the top referral hospital of East Side.

On the west side, it expanded to the southwest. Due to the increase of the population, it is further expanding to the north. This area is called Kadhmiya city. Top referral hospital in west side is Yarmuk Teaching Hospital. Due to new regulation, this hospital belongs to MOH now.

In Baghdad also, the economic sanctions of longer than 10 years were a big obstacle to maintain facilities and equipment in good condition. This situation has become an obstacle to supply basic medical care to people. OFFP replaced and rehabilitated some of obsolescent equipment and facilities. However, fundamental problems are not yet solved.

2) Target facilities

Target hospitals, which suitable for secondary function in Baghdad city were selected. In east side, they are Medical city, Al-Kindy Hospital, and Thawara Hospital. In west side, they are Yarmuk Teaching Hospital and Al-Kalama Hospital.

Medical City is a health facility complex. It is consist of 5 hospitals, and faculty of medicine and dentistry of Baghdad University. In this project, Baghdad Teaching Hospital, Al Zirahert Hospital, and Al Mansur Hospital are selected. Emergency, Surgical, Internal, Pediatric, obstetric departments are to be strengthened. Other hospitals are general hospitals, so that some departments are to be strengthened.

Outline of these hospitals are shown in Table 4.2.12. However, our local consultant could not collect some of the data due to limited capability of hospital statistics system and Iraqi culture where information is not disclosed by local people.

3) Equipment Plan

Medical City and Yarmuk Teaching Hospital should be the top referral hospitals in Iraq, not only Baghdad since these hospitals contain a lot of high level equipment. However, Iraqi health policy is not yet decided and it is difficult to strengthen them as top referral hospitals in this project. Also, primary and secondary care has priority in Iraq in this stage. Accordingly, in this project, these hospitals will be strengthening by equipment for secondary level because it is established that this kind of equipment can be used in any referral system and are necessary at this moment.

Requirement list, existing equipment list and result of repair work list were collected through local consultant. The Team assesses these lists and prepared equipment plan based on following criteria:

- Equipment needed for basic diagnostic and treatment

- Basic or closely related basic equipment to internal, surgical, pediatric and obstetric department.

- Equipment which can be maintained easily.

- Equipment for which consumables can be procured in Iraq.

- Equipment which does not require big operational cost.

All facilities requested equipment which does not match Grant Aid system such as CT, MRI, Angiography, Lithotripter, etc. The Team did not include this equipment in the plan. Also, extension of buildings, rehabilitation of buildings and facilities were not included in the plan.

Operation and maintenance knowledge of latest medical equipment are limited in Iraq because of over 10 years economic sanction. Operation procedures can be trained by instruction of supplier at the time of installation and delivery.

Table 4.2.12 Outlines of Target Hospitals

Hospital Name	Al zirahert Hospital	Al Mansur Pediatric	Baghdad Teaching	Al Kindy Hospital	Tahwara Hospital	Yarmuk Teaching	Al Karama Hospital
City	Baghdad						
Governorate	Baghdad						
1987 *1	3,841,268						
2002 *2	5,605,000						
Population of Governorate *3	6,408,160						
Location *4	Central part of Iraq						
Place	East side	East side	East side	East side	East side	West side	West side
Bed number	622	318	801	223	306	666	393
Doctor	284	103	877	152	90	172	348
Nurse	197	92	-	81	220	159	198
Pharmacist	27	19	-	-	-	72	63
X-ray technician	22	10	-	-	-	33	42
Laboratory technician	46	32	-	-	-	140	88
Technician			15	37	3	40	57
Total staff	990	410	931	600	508	792	105
Department	Surgery (Cardiac, Plastic, Chest, Orthopedic, General), Ophthalmology, Urology, Dental	Pediatric, Circulatory, Digestive, Urology, Nephrology, Tumor	Internal, Surgical, Obstetric & Gynecology, Psychiatric, Nephrology, Circulatory, Premature, Hematology, Respiratory	Internal, Surgical, Obstetric & Gynecology, Pediatric, Urology, Ophthalmology, ENT, Rehabilitation	Internal, Surgical, Gynecology, Pediatric, Dental, Burn unit, Neonatal unit	Internal, Surgical, Obstetric & Gynecology	Internal, Surgical, Obstetric & Gynecology, Pediatric, Urology, Ophthalmology, ENT, Rehabilitation
Number of outpatient (per	3,298 *5	3,529 *5	-	70	60	100	100
Number of inpatient	1,259 *5	1,023 *5	21,828	-	-	-	-
Number of operation (per	660 *5	64 *5	-	-	-	-	-
Bed occupancy rate	-	-	39.80%	-	-	-	-
Budget per month	-	-	-	US\$27,140	US\$15,000	-	-

Source: Questionnaire

*1: <http://unstats.un.org/unsd/citydata/default.asp?contid=4&cid=368>

*2: <http://www.library.uu.nl/wesp/populstat/Asia/iraqt.htm>

*3: Communicable Diseases Profile Iraq, WHO, March 2003

*4: <http://www.globalsecurity.org/military/world/iraq/city.htm>

*5: Record of August 2003

(8) H-8 Strengthen Oxygen Gas Supply

1) Background

In Iraq, State Company of Samarra Drug Industry and some private companies produce oxygen gas. The major supplier in Iraq is this State Company. Oxygen that is produced by this company was 100% procured by MOH. MOH's procurement company KIMADIA handled this work and distributed products to each hospital. Hospitals in the north are procuring oxygen from a private company in Mosul City.

Production plan of Samarra Drug Industry is located in Mansul area of Baghdad. Japanese company installed this plant in 1980. Capability of this plant has decreased due to many years of operation. WHO reported production capability fallen to 150 Nm³/hr. (original

was 200 Nm³/hr.) and it cover 25% of all demand of Iraq. However, it is achieving good quality and purity of more than 99.5%.

Supply from private company does not cover lack of this supply. Low supply of medical oxygen causes rise of price from private company and/or use of industry grade oxygen.

Transportation resources, vehicles, and oxygen cylinders are lacking now since economic sanctions prevented their maintenance or replacement.

2) Estimation of gross demand in Iraq

Estimated gross demand Iraq is shown on Table 4.2.13. This value is based on actual consumption at some hospitals where data was collected by local consultant.

In conclusion, central and south area has demand of medical oxygen 16,775,190 L/day. This project does not cover the north area because a private company has already established supply network. Accordingly, 1 unit of 300 Nm³/hr. capacity will be installed to cover the lack of supply in other areas.

Table 4.2.13 Estimation for Needs of Oxygen in Iraq (except north area)

Governorate	Capital	Bed No.	Estimated needs of oxygen (L/day)
Salahuddin	Tikrit	1,381	918,365
Diyala	Baquba	1,071	712,215
Anbar	Ramadi	1,368	909,720
Baghdad	Baghdad	10,288	6,841,520
Babil	Hilla	1,129	750,785
Karbala	Karbala	641	426,265
Wasit	Kut	1,179	784,035
Najaf	Najaf	1,012	672,980
Qadisiyah	Diwanayah	1,042	692,930
Dhi Qar	Nasiriyah	1,056	702,240
Maisan	Amarah	901	599,165
Muthanna	Samawah	879	584,535
Basra	Basra	3,279	2,180,535
Total		25,226	16,775,290
Required No. of oxygen cylinder			2,396
Change to Nm ³ (Nm ³)			16,775
Consider to market share 70% (Nm ³)			11,743
Required production volume (Nm ³ /hr.)			489

Subject to 273,000 L/day/400 beds

Source: Questionnaire

3) Plan of production plant

Existing obsolete plant was installed in 1980 by Japanese company. Capacity of this plant was damaged by long operation after installation, hard cooling water, and high temperature. Existing plant can be overhauled in a factory. But before that, assessment is necessary by Japanese engineer. However, it is difficult for the Japanese side because of security reasons. Furthermore, overhaul will require replacement of lot of parts and the cost may be higher than a new plant. Accordingly, this project targets to additionally install a new plant.

This plan contains following items:

Air separation unit

The treated air by means of aforementioned process feeds into cold box and is separated into liquid oxygen. Only this system can produce medical grade oxygen of higher than 99.5% purity. Existing equipment is the same system as exists and Iraqi technician has experience of this type of system. Cold box and ambient temperature parts are made per unit which does not require building.

Liquid oxygen storage and pressurized transfer unit

Liquid oxygen tank can store approx. 1-week consumption and pressurized transfer system to tank truck is equipped.

Oxygen filling station to cylinder

This is station to fill oxygen cylinder.

Transportation system

Based on the above needs, large type tank truck and small type tank truck are to be included. Also, oxygen cylinders should be included to replace old cylinders.

Table 4.2.14 Shortlisted Projects

Serial No.	Sector No.	Sector	Project Name	Project Site	Executing Agency	Project Profile	Project Costs (x100 mil. Yen)	Implementation Period (month)	Priority
1	H-1	Health	Rehabilitation of 400 beds General Hospital in Iraq 13 cities (Phase I)	Nasiriyah, Samawah, Diwaniyah, Najaf	Ministry of Health and Health office of Governorate	<p>This is rehabilitation project for general hospital which was constructed by Japanese company. Hospitals of Nassiriyah and Najaf were opened 1984. And hospitals of Samawah and Diwaniyah were opened 1986. After opening, Japanese engineers and local engineers were maintain facilities and medical equipments together. After 1990, Japanese engineers left Iraq due to economic sanction. And this condition accelerate decrepit of equipment because consumables and spare parts were could not import. OFFP budget replaced some medical equipment and facilities. However, it could not solve principle problem. On this project, departments of target are outpatient, emergency, radiology, laboratory, operation room, obstetric and gynecology. Electrical, water supply, drainage, air conditioning, medical gas supply and medical equipment of these departments are rehabilitated to strengthen medical patient service.</p> <p>First phase covers 4 hospitals in southern area. This area is well populated by Shiah and they were ill-treated under Saddam regime. It is urgent matter to rehabilitate hospital.</p>	55.1	<p>Production : 5</p> <p>Transportation : 2</p> <p>Installation, Delivery and Training: 5</p>	
2	H-2	Health	Rehabilitation of 400 beds General Hospital in Iraq 13 cities (Phase II)	Amarah, Kut, Kadmiya, Ramadi, Tikrit	Ministry of Health and Health office of Governorate	<p>This is rehabilitation project for general hospital which was constructed by Japanese company. Hospitals of Kadmiya and Tikrit were opened 1984. And hospitals of Amara, Kut, and Ramadi were opened 1986. After opening, Japanese engineers and local engineers were maintain facilities and medical equipments together. After 1990, Japanese engineers left Iraq due to economic sanction. And this condition accelerate decrepit of equipment because consumables and spare parts were could not import. OFFP budget replaced some medical equipment and facilities. However, it could not solve principle problem. On this project, departments of target are outpatient, emergency, radiology, laboratory, operation room, obstetric and gynecology. Electrical, water supply, drainage, air conditioning, medical gas supply and medical equipment of these departments are rehabilitated to strengthen medical patient service.</p> <p>Second phase covers 5 hospitals in central and southern area. Hospitals of these area which including Baghdad, populated 6.5 million people, are need to be rehabilitated urgently.</p>	72.2	<p>Production : 5</p> <p>Transportation : 2</p> <p>Installation, Delivery and Training: 5</p>	

Serial No.	Sector No.	Sector	Project Name	Project Site	Executing Agency	Project Profile	Project Costs (x100 mil. Yen)	Implementation Period (month)	Priority
3	H-3	Health	Rehabilitation of 400 beds General Hospital in Iraq 13 cities (Phase III)	Kirkuk, Erbil, Mosul, Dohuk	Ministry of Health and Health office of Governorate	<p>This is rehabilitation project for general hospital which was constructed by Japanese company. Hospitals of Erbil was opened 1984. And hospitals of Dohuk, Mosul, and Kirkuk were opened 1986. After opening, Japanese engineers and local engineers were maintain facilities and medical equipments together. After 1990, Japanese engineers left Iraq due to economic sanction. And this condition accelerate decrepit of equipment because consumables and spare parts were could not import. OFFP budget replaced some medical equipment and facilities. However, it could not solve principle problem.</p> <p>On this project, departments of target are outpatient, emergency, radiology, laboratory, operation room, obstetric and gynecology. Electrical, water supply, drainage, air conditioning, medical gas supply and medical equipment of these departments are rehabilitated to strengthen medical patient service.</p> <p>Third phase covers 4 hospitals in northern area. Hospitals of Erbil and Dohuk were better condition because OFFP was controlled by WHO properly. Accordingly, these hospitals were choose to last phase.</p>	74.5	<p>Production : 5</p> <p>Transportation : 2</p> <p>Installation, Delivery and Training: 5</p>	
4	H-4	Health	Strengthen Medical Equipment for District Hospital in Governorate	Suleymanlia, Hilla, Karbala, Baquba, Samarra, Falluja	Ministry of Health and Health office of Governorate	<p>Referral system in Iraq is not functioning now. All patient go to hospital to get treatment. On of this reason is traditional health system in Iraq biased to hospital. It is necessary to shift the system from hospital care to primary care. On this project, 6 district hospitals which will function as secondary level are strengthened.</p>	14.5	<p>Production : 4</p> <p>Transportation : 2</p> <p>Installation : 1.5</p> <p>Training : 1</p>	
5	H-5	Health	Strengthen Medical Equipment for Main Hospitals in Basra City	Basra	Ministry of Health and Health office of Governorate	<p>This project focus on third populated city of Iraq, Basra Top referral hospital in Southern area are target project site. However, project strengthen only second level function only which can be utilised as any future referral system. Al-Sadal Teaching Hospital, Basra General Hospital, and Mother and Child Hospital are project site.</p>	9.1	<p>Production : 4</p> <p>Transportation : 2</p> <p>Installation : 1.5</p> <p>Training : 1</p>	
6	H-6	Health	Strengthen Medical Equipment for Main Hospitals in Southern Area	Mosul	Ministry of Health and Health office of Governorate	<p>This project is strengthe medical equipment of 2 hospitals in Basra city and Obstetric & Children hospital in Samawah & Karbala. It is aim to strengthen secondary level function. 2 hospitals in Basra is top referral hospital. However, this project do not strengthen tertiary care but secondary care. Obstetric and Children hospital in Samawah and Karbala is secondary level hospital on each governorate.</p>	8.9	<p>Production : 4</p> <p>Transportation : 2</p> <p>Installation : 1.5</p> <p>Training : 1</p>	

Serial No.	Sector No.	Sector	Project Name	Project Site	Executing Agency	Project Profile	Project Costs (x100 mil. Yen)	Implementation Period (month)	Priority
7	H-7	Health	Strengthen Medical Equipment for Main Hospitals in Baghdad	Baghdad	Ministry of Health and Health office of Governorate	Baghdad is most populated area in Iraq. This project is strengthen main hospitals in Baghdad. Target hospital is top referral level. However, it is not designed to upgrade top referral level but secondary hospital level.	16.1	Production : 4 Transportation : 2 Installation : 1.5 Training : 1	
8	H-8	Health	Strengthen Oxygen Gas Supply	Baghdad	Ministry of Health, Ministry of Industry	In Iraq, supply of Oxygen is limited compare from demand. There are only one state owned oxygen factory in Baghdad. This factory was constructed in 1980 by Japanese company. The Oxygen which produced by this factory cover only 25% of needs in Iraq. This project install new plan in Baghdad . This factory can satisfy demand of overall Iraq. Furthermore, facility of recharging station, transportation vehicle and charging cylinder are rehabilitated.	15.7	Production : 8 Transportation : 3 Installation and Delivery : 3 Training : 3	

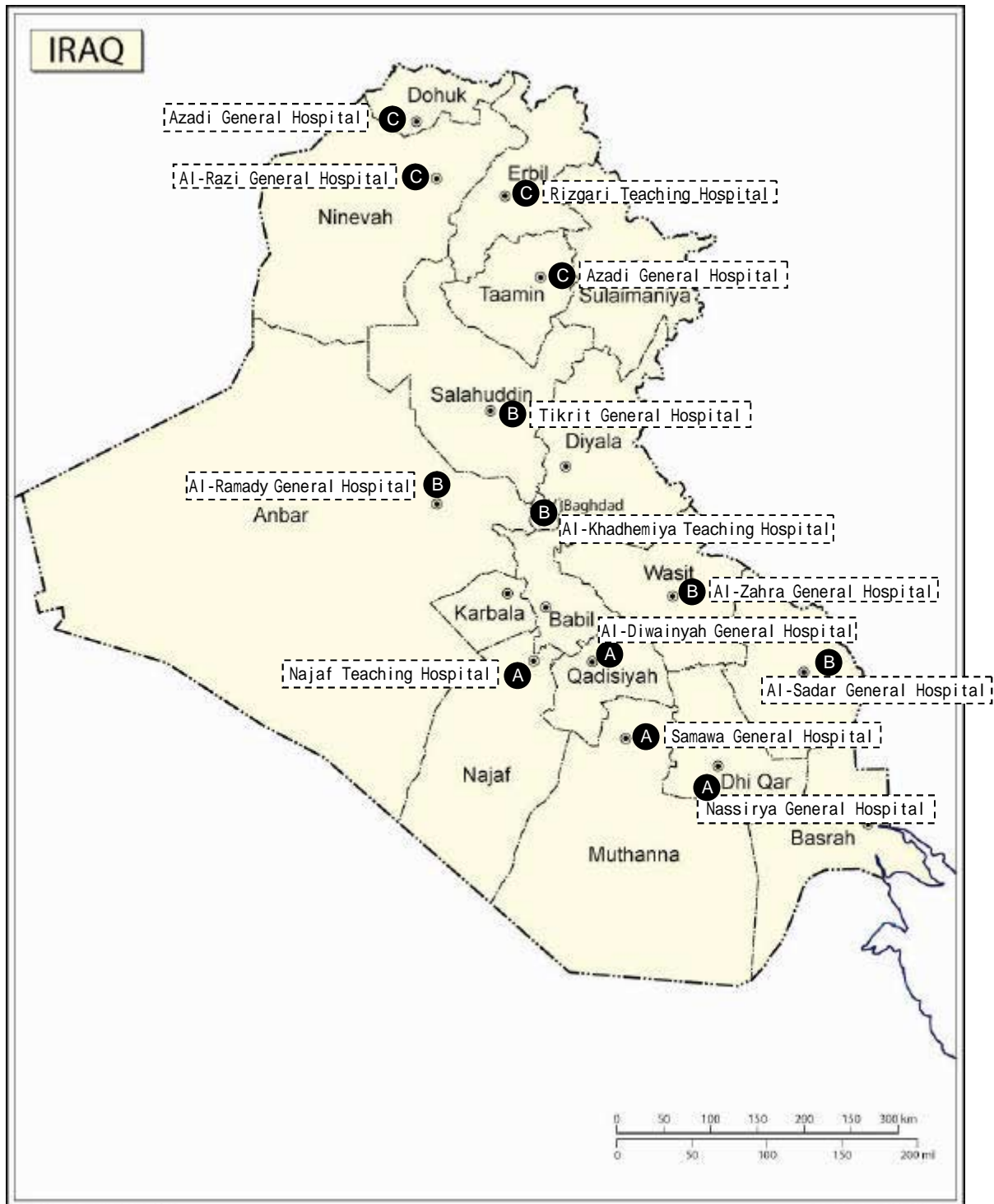
4.3 Project Profile

Project Profile (Project Summary)

Sector	Health
Project Name	13 city general hospital rehabilitation, Phase I Nassiryah General Hospital, Samawah General Hospital, Diwainyah General Hospital, Najaf Teaching Hospital
Background (current state, necessity of immediate action & the needs)	<p>These general hospitals were constructed by Japanese company. Hospitals of Nassiryah and Najaf were opened in 1984, and hospitals of Samawah and Diwaniyah were opened 1986. For a while Japanese engineers were maintaining facilities and medical equipment with Iraqi engineers. However, due to economic sanction which started in 1990, Japanese engineer were returned to Japan and all facilities and medical equipment were maintained by Iraqi engineers/technicians only. And prohibition of for consumable and spare parts accelerated decrepitude of equipment. Some equipment and facilities were replaced by OFFP. But it did not solve fundamental problem. Air conditioner, steam and hot water supply are not functioning now. Energy supply to medical equipment is suspended and steam sterilizer cannot operate now. Surgical operation is making under contaminated fresh air condition. Decrepitude of medical equipment is serious now. And this condition prevents to provide basic medical care.</p> <p>These hospitals are only general district hospital of each governorate. Normal function of these hospitals is important to local people because primary health care is not functioning well due to security and logistic reasons.</p> <p>This project focuses on rehabilitation of these hospitals. This is first phase of 13 hospitals because southern area has better condition of security.</p>
Counterpart and Executing Agencies	Ministry of Health, Governorate Health Office, Nasiriyah General Hospital, Samawah General Hospital, Diwaniyah General Hospital, Najaf Teaching Hospital
Description of the Assistance	Facility of electricity, steam, water supply, drainage, air conditioning, medical gas, water treatment, and medical equipment of out patient, emergency, radiology, laboratory, operation room, and obstetric & gynecology department.
Project Site	Nasiriya General Hospital (Dhi Qar Governorate, Nasiriyah) Samawah General Hospital (Muthana Governorate, Samawah) Diwaniyah General Hospital (Qadisiyah Governorate, Diwaniyah) Najaf Teaching Hospital (Najaf Governorate, Najaf)
Effectiveness/Benefit (beneficiary)	Dhi Qar Governorate (1.53 million), Muthana Governorate (560 thousand), Qadisiyah Governorate (910 thousand), and Najaf Governorate (950 thousand). Total 3.95 million is population of beneficiary. 3% of Iraqi population is covered.
Presumed Project Period	Production: 4.5 months Transportation: 2 months Installation: 4 months Operation training: 1 month
Presumed Contract Manner (competitive bid, nominated contract)	General competitive bidding

Name of Nominated Contractor	-
Expected Transit Method	Container and bulk transport are expected. The common routes from Japan to the project sites are Jordan route, Kuwait route, and Umm Qasr route via Dubai. The cargo insurance should cover all risks. Moreover, the cargoes should be escorted by armed security escorts to mitigate risks inside Iraq.
Necessity of the Installation of Machinery	Necessary
Profile of Engineer responsible for the installation (nationality & capability)	Facility of electricity, water supply, drainage, air conditioning, medical gas, water treatment, and medical equipment can be installed by Iraqi engineers. There are some engineering companies for installation and maintenance of facility and medical equipment. They have enough experience to carry out this kind of work. Training under responsibility of main contractor is necessary because they are not familiarized with Japanese facility and medical equipment.
Operation and Maintenance (O&M) Structure	5 - 8 engineers and around 10 technicians are working on each project site (hospital). They make maintenance for facilities and equipment. It will be necessary to subcontract with company of private sector for complicated technical matter.
Necessity of O&M Training	Necessary
Contents of Training	<p>(Contents)</p> <p>Facility equipment: Daily maintenance, Periodical maintenance, Trouble shooting, Repair technique</p> <p>Medical equipment: Daily maintenance, Trouble shooting, Repair technique</p> <p>(Place)</p> <p>Facility equipment: Factory of manufacturer in Japan.</p> <p>Medical equipment: Training center or factory of manufacturer in Japan or third country.</p>
Other remarks regarding O&M	
Involvement of Other Donors	Nil
Other Considerations (environment, gender, etc)	Nil

Location of Project Sites



Map No. 5555 Rev. 3 - UNITED NATIONS
December 2002

Department of Public Information
Cartographic Section

Rough Estimates of Project Cost

(Unit : Thousands Yen)

Classification			Cost
Equipment Cost (including Transport and Installation)			5,214,382
	1.Procurement cost		4,027,044
	Nassirya General Hospital	General facilities	615,657
		Medical facilities	173,203
		Medical equipment	277,912
		Sub-total	1,066,772
	Samawah General Hospital	General facilities	503,545
		Medical facilities	144,365
		Medical equipment	170,654
		Sub-total	818,564
	Dihawniya General Hospital	General facilities	830,045
		Medical facilities	147,411
		Medical equipment	141,919
		Sub-total	1,119,375
	Najaf Teaching Hospital	General facilities	692,781
		Medical facilities	153,986
		Medical equipment	175,877
		Sub-total	1,022,333
2.Transport fee		265,786	
3.Installation cost		921,553	
Design and Supervision Cost			291,078
Total of Project Cost			5,505,460

Equipment List

Phaze-I		Nasirya General Hospital (Nasirya)	Samawa General Hospital (Samawa)	Diwainyah General Hospital (Diwaniya)	Najaf Teaching Hospital (Najaf)
General Facilities					
1. Electrical Equipment					
1-01	High voltage pannel (replacement of breaker, relay, meter)			1	1
	Other relevant materials				
1-02	HV Transformer			1	
	Other relevant materials			1	
1-03	Low voltage pannel (replacement of breaker, relay, meter)			1	1
	Other relevant materials				
1-04	Generator			2	2
	Other relevant materials			2	2
1-05	Synchronizer panel			1	1
	Other relevant materials			1	1
1-06	DC battery panel			1	1
	Other relevant materials			1	1
1-07	Lift for patients		2	2	
	Other relevant materials		2	2	
1-08	Lift for beds	2	2	2	2
	Other relevant materials	2	2	2	2
1-09	Transformer for outside use	2	2	2	2
	Other relevant materials	2	2	2	2
2. Water supply and sewage					
2-01	Water supply and sewage system	1	1	1	1
	Other relevant materials	1	1	1	1
2-02	Pump for sanitary	1	1	1	1
	Other relevant materials	1	1		1
3. Air Conditioning Equipment					
3-01	Spare parts for air handling unit system (6 months)	1	1	1	1
	Other relevant materials	1	1	1	1
3-02	Heat source equipment system	1	1	1	1
	Other relevant materials	1	1	1	1
3-03	Pump system	1	1	1	1
	Other relevant materials	1	1	1	1
3-04	Fans system	1	1	1	1
	Other relevant materials	1	1	1	1
Medical Facilities					
1. Medical Gas					
1-01	Medical Vacuum Pump Plant	1	1	1	1
	Other materials	1	1	1	1
1-02	Medical Air Pump Plant	1	1	1	1
	Other materials	1	1	1	1
1-03	Entonox Automatic Changeover Manifold	1	1	1	1
	Other materials	1	1	1	1
1-04	Replacement of Outlet	1	1	1	1
	Other materials	1	1	1	1
1-05	Replacement Of Oxygen, Nitrous oxide & Air	1	1	1	1
	Other materials	1	1	1	1
2. RO Apparatus					
2-01	Primary water pump	1	1	1	1

2-02	Primary water filter	1	1	1	1
2-03	Softener	1	1	1	1
	Other materials, Spare parts	3	3	3	3
4.Hand washing unit					
4-01	Hand washing unit	14	12	10	14
4-02	Sink	22	6	5	7
	Other materials	14	12	10	14
5.Walk-in refrigerator					
5-01	Walk-in refrigerator	2	2	2	2
	Other materials	2	2	2	2

Medical Equipment

1. Laboratory					
1-01	Automatic analyzer	1		1	1
	Consumables, Spare parts, other relevant parts	1		1	1
1-02	Spectrophotometer	2	1	2	1
	Consumables, Spare parts, other relevant parts	2	1	2	1
1-03	Elcetrollyte analyzer	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1
1-04	Centrifuge	2		1	
	Consumables, Spare parts, other relevant parts	2		1	
1-05	Haematology analyzer	2	1	1	
	Consumables, Spare parts, other relevant parts	2	1	1	
1-06	Microscope	2	2	1	4
	Consumables, Spare parts, other relevant parts	2	2	1	4
1-07	Blood bank refugerilator	2		1	2
	Consumables, Spare parts, other relevant parts	2		1	2
1-08	Hematocrit centrifuge			1	1
	Consumables, Spare parts, other relevant parts			1	1
1-09	Blood gas analyzer	2	1	1	1
	Consumables, Spare parts, other relevant parts	2	1	1	1
1-10	Incubater	2	1		
	Consumables, Spare parts, other relevant parts	2	1		
1-11	Sterilizer for Lab (Vertical type)	1			1
	Consumables, Spare parts, other relevant parts	1			1
1-12	Water distiller	1	2	1	1
	Consumables, Spare parts, other relevant parts	1	2	1	1
1-13	Blood Coagulation analyzer	2	1		
	Consumables, Spare parts, other relevant parts	2	1		
2. Radiology					
2-01	X-ray unit, general	2	2		2
	Consumables, Spare parts, other relevant parts	2	2		2
2-02	X-ray unit, fluorograghy	1	1		
	Consumables, Spare parts, other relevant parts	1	1		
2-03	Ultrasonic, general collar	2			
	Consumables, Spare parts, other relevant parts	2			
2-04	Dental, Pantmography				1
	Consumables, Spare parts, other relevant parts				1
2-05	Automatic film developper	2	2	2	2
	Consumables, Spare parts, other relevant parts	2	2	2	2
3. Operation theatre / CSSD					
3-01	Operation table	5	2	7	3
	Consumables, Spare parts, other relevant parts	5	2	7	3
3-02	Halogen lamp for Shadowless lamp	5	5	5	3
	Consumables, Spare parts, other relevant parts	5	5	5	3
3-03	Anaesthesia apparatus with ventilator	4		1	5
	Consumables, Spare parts, other relevant parts	4		1	5

3-04	Patient monitor	3	3	1	5
	Consumables, Spare parts, other relevant parts	3	3	1	5
3-05	Ventilator	3	1	1	1
	Consumables, Spare parts, other relevant parts	3	1	1	1
3-06	Electric cautery unit		2	1	5
	Consumables, Spare parts, other relevant parts		2	1	5
3-07	X-ray unit, C-arm	1			1
	Consumables, Spare parts, other relevant parts	1			1
3-08	Shadowless lamp, mobile	2	1	2	2
	Consumables, Spare parts, other relevant parts	2	1	2	2
3-09	Defibrillator	3	1	2	2
	Consumables, Spare parts, other relevant parts	3	1	2	2
3-10	Suction unit	2	1	2	2
	Consumables, Spare parts, other relevant parts	2	1	2	2
3-11	Halogen lamp for Shadowless lamp	2	2	2	
	Consumables, Spare parts, other relevant parts	2	2	2	
3-12	Emergency trolley	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1
3-13	Spare parts for Autoclave Sterilizer (F1-30) and repair	3	4	4	2
	Consumables, Spare parts, other relevant parts	3	4	4	2
3-14	Spare parts for Autoclave Sterilizer (F1-08) and repair	1	1	1	
	Consumables, Spare parts, other relevant parts	1	1		
5. ICU					
5-01	Patient monitor, Bedside	8	8	8	8
	Consumables, Spare parts, other relevant parts	8	8	8	8
5-02	Central monitor	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1
5-03	E.C.G	1	3	1	1
	Consumables, Spare parts, other relevant parts	1	3	1	1
5-04	Defibrillator	3	2	2	1
	Consumables, Spare parts, other relevant parts	3	2	2	1
5-05	Ventilator		2		2
	Consumables, Spare parts, other relevant parts		2		2
5-06	Infusion pump	5	2	3	2
	Consumables, Spare parts, other relevant parts	5	2	3	2
5-07	Syringe pump	1	6	2	1
	Consumables, Spare parts, other relevant parts	1	6	2	1
5-08	Blood Gas Analyzer	1	1	1	
	Consumables, Spare parts, other relevant parts	1	1	1	
5-09	Mobile X-ray unit	1		1	
	Consumables, Spare parts, other relevant parts	1		1	
5-10	ICU bed	8	8	4	4
	Consumables, Spare parts, other relevant parts	8	8	4	4
7. Outpatients					
7-01	E.C.G	2	1	1	2
	Consumables, Spare parts, other relevant parts	2	1	1	2
7-04	Slit lamp	1	2	2	
	Consumables, Spare parts, other relevant parts	1	2	2	
7-05	Refract meter	1		1	
	Consumables, Spare parts, other relevant parts	1		1	
7-06	Perimeter		2		
	Consumables, Spare parts, other relevant parts		2		
7-07	ENT Treatment unit	2	2	3	2
	Consumables, Spare parts, other relevant parts	2	2	3	2
7-08	Nebulizer	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1

7-09	Otorhinoscope	4	4	4	2
	Consumables, Spare parts, other relevant parts	4	4	4	2
7-10	Laryngoscope	4	4	4	2
	Consumables, Spare parts, other relevant parts	4	4	4	2
7-11	Head mirror, fiber with light source	4	4	4	2
	Consumables, Spare parts, other relevant parts	4	4	4	2
7-12	Wax treatment set	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1
7-13	Dental unit	3		1	1
	Consumables, Spare parts, other relevant parts	3		1	1
7-14	X-ray unit, dental	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1
7-15	Infrared lump	1			
	Consumables, Spare parts, other relevant parts	1			
7-16	Ultraviolet lump	1			
	Consumables, Spare parts, other relevant parts	1			

Project Implementation Schedule for All Phase

Project month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Phase 1																									
Preparation of tender documents																									
Tender, Supply contract																									
Production of equipment																									
Transportation																									
Installation, Handing-over of equipment																									
Phase 2																									
Preparation of tender documents																									
Tender, Supply contract																									
Production of equipment																									
Transportation																									
Installation, Handing-over of equipment																									
Phase 3																									
Preparation of tender documents																									
Tender, Supply contract																									
Production of equipment																									
Transportation																									
Installation, Handing-over of equipment																									

Work Schedule for All Phase

Construction phase	Project month	1	2	3	4	5	6	7	8	9	10	11	12	13
1 st phase														
Removal of existing facilities, clearance of installation site														
Unpacking, unloading, temporary installation														
Installation, plumbing, electricity work														
Test running														
Inspection for handing-over														
Instruction for operation														
2 nd phase														
Removal of existing facilities, clearance of installation site														
Unpacking, unloading, temporary installation														
Installation, plumbing, electricity work														
Test running														
Inspection for handing-over														
Instruction for operation														
3 rd phase														
Removal of existing facilities, clearance of installation site														
Unpacking, unloading, temporary installation														
Installation, plumbing, electricity work														
Test running														
Inspection for handing-over														
Instruction for operation														

Installation Schedule

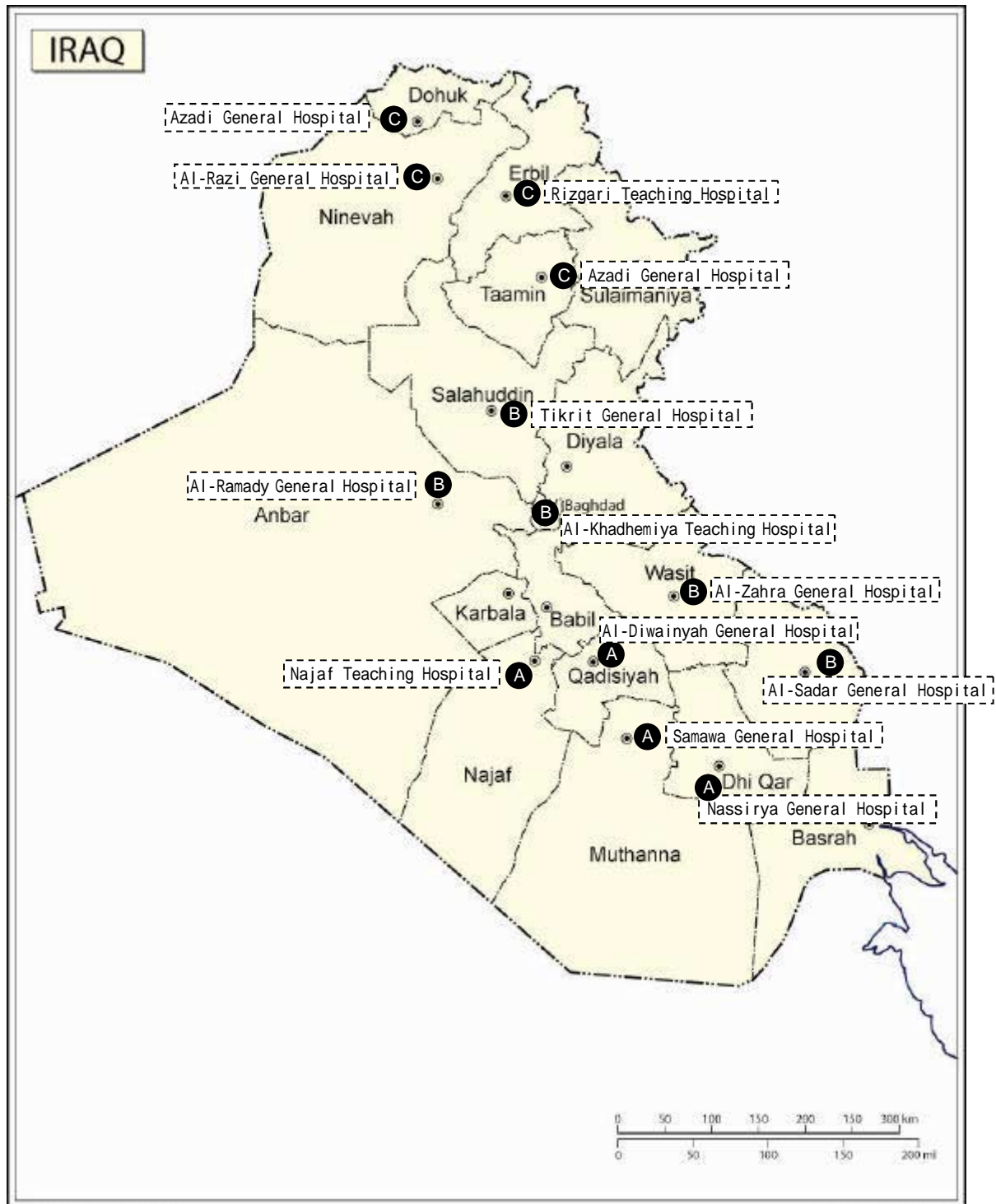
Construction phase	Project month	0	1	2	3	4
Removal of existing facilities, clearance of installation site						
General Facilities						
Unpacking, unloading, temporary installation						
Installation, plumbing, electricity work						
Test running						
Inspection for handing-over						
Instruction for operation						
Medical Facilities						
Unpacking, unloading, temporary installation						
Installation, plumbing, electricity work						
Test running						
Inspection for handing-over						
Instruction for operation						
Medical Equipment						
Unpacking, unloading, temporary installation						
Installation, plumbing, electricity work						
Test running						
Inspection for handing-over						
Instruction for operation						

Project Profile (Project Summary)

Sector	Health
Project Name	13 city general hospital rehabilitation, Phase II Al-Sadar General Hospital, Al-Zahra General Hospital, Al-Khadhemia Teaching Hospital, Al-Ramady General Hospital, Tikrit General Hospital
Background (current state, necessity of immediate action & the needs)	<p>These general hospitals were constructed by Japanese company. Hospitals of Al-Khadhemia and Tikrit were opened in 1984, and hospitals of Al-Sadar, Al-Zahra and Al-Ramady were opened 1986. For a while Japanese engineers were maintaining facilities and medical equipment with Iraqi engineers. However, due to economic sanction which started in 1990, Japanese engineer were returned to Japan and all facilities and medical equipment were maintained by Iraqi engineers/technicians only. And prohibition of for consumable and spare parts accelerated decrepitude of equipment. Some equipment and facilities were replaced by OFFP. But it did not solve fundamental problem. Air conditioner, steam and hot water supply are not functioning now. Energy supply to medical equipment is suspended and steam sterilizer cannot operate now. Surgical operation is making under contaminated fresh air condition. Decrepitude of medical equipment is serious now. And this condition prevents to provide basic medical care.</p> <p>These hospitals except Al-Khadhemia are only general district hospital of each governorate. Normal function of these hospitals is important to local people because primary health care is not functioning well due to security and logistic reasons.</p> <p>Al-Khadhemia Teaching Hospital is located in Khadhemia area of northwest part of west Baghdad. Baghdad is divided east and west by Tigris river. Population of this area is rapidly growing from end of 1980 as housing area. It is estimated that 650 thousand people are living now. There are 12 hospitals and 74 health centers in west Baghdad. Many of these hospitals are located in South area of west Baghdad. There are only one pediatric hospital in Khadhemia area. To strengthen this hospital is urgent issue to these 650 thousand people.</p> <p>This project focuses on rehabilitation of these hospitals. This is first phase of 13 hospitals because southern area has better condition of security.</p>
Counterpart and Executing Agencies	Ministry of Health, Governorate Health Office, Al-Sadar General Hospital, Al-Zahra General Hospital, Al-Khadhemia Teaching Hospital, Al-Ramady General Hospital, Tikrit General Hospital
Description of the Assistance	Facility of electricity, steam, water supply, drainage, air conditioning, medical gas, water treatment, and medical equipment of out patient, emergency, radiology, laboratory, operation room, and obstetric & gynecology department.
Project Site	<p>Al-Sadar General Hospital (Maison Governorate, Amara)</p> <p>Al-Zahra General Hospital (Wasit Governorate, Kut)</p> <p>Al-Khadhemia Teaching Hospital (Baghdad Governorate, Khadhemia)</p> <p>Al-Ramady General Hospital (Anbar Governorate, Ramadi)</p> <p>Tikrit General Hospital (Salahuddin Governorate, Tikrit)</p>
Effectiveness/Benefit (beneficiary)	Maison Governorate (840 thousand), Wasit Governorate (930 thousand), Baghdad Governorate (649 million), Anbar Governorate (1.27 million), and Salahuddin Governorate (970 thousand). Total 10.5 million is population of beneficiary. 39% of Iraqi population is covered.

Presumed Project Period	Production: 4.5 months Transportation: 2 months Installation: 4 months Operation training: 1 month
Presumed Contract Manner (competitive bid, nominated contract)	General competitive bidding
Name of Nominated Contractor	
Expected Transit Method	Container and bulk transport are expected. The common routes from Japan to the project sites are Jordan route, Kuwait route, and Umm Qasr route via Dubai. The cargo insurance should cover all risks. Moreover, the cargoes should be escorted by armed security escorts to mitigate risks inside Iraq.
Necessity of the Installation of Machinery	Necessary
Profile of Engineer responsible for the installation (nationality & capability)	Facility of electricity, water supply, drainage, air conditioning, medical gas, water treatment, and medical equipment can be installed by Iraqi engineers. There are some engineering companies for installation and maintenance of facility and medical equipment. They have enough experience to carry out this kind of work. Training under responsibility of main contractor is necessary because they are not familiarized with Japanese facility and medical equipment.
Operation and Maintenance (O&M) Structure	5 - 8 engineers and around 10 technicians are working on each project site (hospital). They make maintenance for facilities and equipment. It will be necessary to subcontract with company of private sector for complicated technical matter.
Necessity of O&M Training	Necessary
Contents of Training	(Contents) Facility equipment: Daily maintenance, Periodical maintenance, Trouble shooting, Repair technique Medical equipment: Daily maintenance, Trouble shooting, Repair technique (Place) Facility equipment: Factory of manufacturer in Japan. Medical equipment: Training center or factory of manufacturer in Japan or third country.
Other remarks regarding O&M	
Involvement of Other Donors	Nil
Other Considerations (environment, gender, etc)	Nil

Location of Project Sites



Map No. 3535 Rev. 5 UNITED NATIONS
December 2002

Department of Public Information
Cartographic Section

Rough Estimates of Project Cost

(Unit : Thousands Yen)

Classification			Cost
Equipment Cost (including Transport and Installation)			6,905,733
	1.Procurement cost		4,586,834
	Al-Sadar General Hospital	General facilities	625,269
		Medical facilities	167,110
		Medical equipment	307,856
		Sub-total	1,100,235
	Al-Zahra General Hospital	General facilities	401,825
		Medical facilities	166,334
		Medical equipment	220,304
		Sub-total	788,463
	Al-Khadhemiya Teaching Hospital	General facilities	538,331
		Medical facilities	0
		Medical equipment	193,506
		Sub-total	731,837
	Al-Ramady General Hospital	General facilities	482,933
		Medical facilities	142,519
		Medical equipment	161,938
		Sub-total	787,390
	Tikrit General Hospital	General facilities	817,487
		Medical facilities	155,667
		Medical equipment	205,755
		Sub-total	1,178,909
	2.Transport fee		1,249,347
	3.Installation cost		1,069,552
Design and Supervision			316,339
Total of Project Cost			7,222,072

Equipment List

Phase-II		Al-Sadar General Hospital (Amara)	Al-Zahra General Hospital (Kut)	Al-Khadhemia Teaching Hospital (Kadhimya)	Al-Ramady General Hospital (Ramadi)	Tikrit General Hospital (Tikrit)
General Facilities						
1. Electrical Equipment						
1-01	High voltage pannel (replacement of breaker, relay, meter)	1				1
	Other relevant materials					
1-02	HV Transformer	2	1			1
	Other relevant materials	2	1			1
1-03	Low voltage pannel (replacement of breaker, relay, meter)	1				1
	Other relevant materials					
1-04	Generator	2				1
	Other relevant materials	2				1
1-05	Synchronizer panel	1	1	1	1	1
	Other relevant materials	1	1	1	1	1
1-06	DC battery panel	1	1	1	1	1
	Other relevant materials	1	1	1	1	1
1-07	Lift for patients			2	2	2
	Other relevant materials			2	2	2
1-08	Lift for beds					2
	Other relevant materials					2
1-09	Transformer for outside use	2	2	2	2	2
	Other relevant materials	2	2	2	2	2
2. Water supply and sewage						
2-01	Water supply and sewage system	1	1	1	1	1
	Other relevant materials	1	1	1	1	1
2-02	Pump for sanitary	1	1	1	1	1
	Other relevant materials	1	1	1	1	1
3. Air Conditioning Equipment						
3-01	Spare parts for air handling unit system (6 months)	1	1	1	1	1
	Other relevant materials	1	1	1	1	1
3-02	Heat source equipment system	1	1	1	1	1
	Other relevant materials	1	1	1	1	1
3-03	Pump system	1	1	1	1	1
	Other relevant materials	1	1	1	1	1
3-04	Fans system	1	1	1	1	1
	Other relevant materials	1	1	1	1	1
Medical Facilities						
1	Medical Gas					
1-01	Medical Vacuum Pump Plant	1	1		1	1
	Other materials	1	1		1	1
1-02	Medical Air Pump Plant	1	1		1	1
	Other materials	1	1		1	1
1-03	Entonox Automatic Changeover Manifold	1	1		1	1
	Other materials	1	1		1	1
1-04	Replacement of Outlet	1	1		1	1
	Other materials	1	1		1	1
1-05	Replacement Of Oxygen,Nitrous oxide & Air	1	1		1	1
	Other materials	1	1		1	1
2	RO Apparatus					
2-01	Primary water pump	1	1		1	1
2-02	Primary water filter	1	1		1	1

2-03	Softener	1	1		1	1
	Other materials, Spare parts	3	3		2	2
4	Hand washing unit					
4-01	Hand washing unit	22	22		14	22
4-02	Sink	11	11		7	11
	Other materials	22	22		14	22
5	Walk-in refrigerator					
5-01	Walk-in refrigerator	2	1		2	2
	Other materials	2	1		2	2
Medical Equipment						
1. Laboratory						
1-01	Automatic analyzer	2	1	1	1	1
	Consumables, Spare parts, other relevant parts	2	1	1	1	1
1-02	Spectrophotometer	2	2	1		1
	Consumables, Spare parts, other relevant parts	2	2	1		1
1-03	Elcetrolite analyzer	2	1	2	1	1
	Consumables, Spare parts, other relevant parts	2	1	2	1	1
1-04	Centrifuge	2	2			2
	Consumables, Spare parts, other relevant parts	2	2			2
1-05	Haematology analyzer	2	1	1	1	1
	Consumables, Spare parts, other relevant parts	2	1	1	1	1
1-06	Microscope	4			1	3
	Consumables, Spare parts, other relevant parts	4			1	3
1-07	Blood bank refugerilator	3	2	1		1
	Consumables, Spare parts, other relevant parts	3	2	1		1
1-08	Hematocrit centrifuge	1			3	1
	Consumables, Spare parts, other relevant parts	1			3	1
1-09	Blood gas analyzer	1		1	1	1
	Consumables, Spare parts, other relevant parts	1		1	1	1
1-10	Incubater	2				
	Consumables, Spare parts, other relevant parts	2				
1-11	Sterilizer for Lab (Vertical type)	1	1	1		
	Consumables, Spare parts, other relevant parts	1	1	1		
1-12	Water distiller	1	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1	1
1-13	Blood Coagulation analyzer	2				
	Consumables, Spare parts, other relevant parts	2				
2. Radiology						
2-01	X-ray unit, general	1	2	2	2	1
	Consumables, Spare parts, other relevant parts	1	2	2	2	1
2-02	X-ray unit, fluorograghy	1	1		1	1
	Consumables, Spare parts, other relevant parts	1	1		1	1
2-03	Ultrasonic, general collor	1	1			
	Consumables, Spare parts, other relevant parts	1	1			
2-04	Dental, Pantmography			1	1	
	Consumables, Spare parts, other relevant parts			1	1	
2-05	Automatic film developper	2	2	2		1
	Consumables, Spare parts, other relevant parts	2	2	2		1
3. Operation theatre / CSSD						
3-01	Operation table	4	3	9	6	4
	Consumables, Spare parts, other relevant parts	4	3	9	6	4
3-02	Halogen lamp for Shadowless lamp	5	5	5	5	4
	Consumables, Spare parts, other relevant parts	5	5	5	5	4
3-03	Anaesthesia apparatus with ventilator	4	3	1	1	1
	Consumables, Spare parts, other relevant parts	4	3	1	1	1
3-04	Patient monitor	4	1	4	1	1
	Consumables, Spare parts, other relevant parts	4	1	4	1	1

3-05	Ventilator	1	2	1	1	1
	Consumables, Spare parts, other relevant parts	1	2	1	1	1
3-06	Electric cautery unit	3	1	5	1	1
	Consumables, Spare parts, other relevant parts	3	1	5	1	1
3-07	X-ray unit, C-arm				1	
	Consumables, Spare parts, other relevant parts				1	
3-08	Shadowless lamp, mobile	2	2	2	2	2
	Consumables, Spare parts, other relevant parts	2	2	2	2	2
3-09	Defibrillator	2	2	2	2	2
	Consumables, Spare parts, other relevant parts	2	2	2	2	2
3-10	Suction unit	2	2	2	2	2
	Consumables, Spare parts, other relevant parts	2	2	2	2	2
3-11	Halogen lamp for Shadowless lamp				1	
	Consumables, Spare parts, other relevant parts				1	
3-12	Emergency trolley	1	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1	
3-13	Spare parts for Autoclave Sterilizer (F1-30) and repair	3	3	3	4	4
	Consumables, Spare parts, other relevant parts	3	3	3	4	4
3-14	Spare parts for Autoclave Sterilizer (F1-08) and repair	1			1	1
	Consumables, Spare parts, other relevant parts	1			1	1
4. OB/GN						
4-01	Faetal monitor	2	1	1		1
	Consumables, Spare parts, other relevant parts	2	1	1		1
4-02	Ultrasound apparatus, B/W	1	1	1		1
	Consumables, Spare parts, other relevant parts	1	1	1		1
4-03	Suction unit	1	1	1		1
	Consumables, Spare parts, other relevant parts	1	1	1		1
4-04	New born treatment table	2	1	2		1
	Consumables, Spare parts, other relevant parts	2	1	2		1
4-05	Operation table	1	1	2		1
	Consumables, Spare parts, other relevant parts	1	1	2		1
4-06	Delivery table	4	1	4		1
	Consumables, Spare parts, other relevant parts	4	1	4		1
4-07	Halogen lamp for Shadowless lamp	5	3	5		3
	Consumables, Spare parts, other relevant parts	5	3	5		3
4-08	Electrolyte analyzer	1	1	1		1
	Consumables, Spare parts, other relevant parts	1	1	1		1
4-09	Shadowless lamp, mobile	1	1	1		1
	Consumables, Spare parts, other relevant parts	1	1	1		1
5. ICU						
5-01	Patient monitor, Bedside	8	8			8
	Consumables, Spare parts, other relevant parts	8	8			8
5-02	Central monitor	1	1			1
	Consumables, Spare parts, other relevant parts	1	1			1
5-03	E.C.G	1	3	1	1	1
	Consumables, Spare parts, other relevant parts	1	3	1	1	1
5-04	Defibrillator	2	2	4	1	1
	Consumables, Spare parts, other relevant parts	2	2	4	1	1
5-05	Ventilator	2				2
	Consumables, Spare parts, other relevant parts	2				2
5-06	Infusion pump	2	2	2	2	2
	Consumables, Spare parts, other relevant parts	2	2	2	2	2
5-07	Syringe pump	5	1	1	1	1
	Consumables, Spare parts, other relevant parts	5	1	1	1	1
5-08	Blood Gas Analyzer	1		1		
	Consumables, Spare parts, other relevant parts	1		1		

5-09	Mobile X-ray unit	1				
	Consumables, Spare parts, other relevant parts	1				
5-10	ICU bed	8	4	8	4	4
	Consumables, Spare parts, other relevant parts	8	4	8	4	4
6. NICU						
6-01	Baby incubator	10	4	4		4
	Consumables, Spare parts, other relevant parts	10	4	4		4
6-02	Infant warmer	4	4	4		4
	Consumables, Spare parts, other relevant parts	4	4	4		4
6-03	Infant ventilator	1		4		
	Consumables, Spare parts, other relevant parts	1		4		
6-04	Syringe pump	3	2	2		2
	Consumables, Spare parts, other relevant parts	3	2	2		2
6-05	Infusion pump	3	2	2		2
	Consumables, Spare parts, other relevant parts	3	2	2		2
7. Outpatients						
7-01	E.C.G	4	2	2	2	2
	Consumables, Spare parts, other relevant parts	4	2	2	2	2
7-02	Ultrasound apparatus, B/W	1	1	1		1
	Consumables, Spare parts, other relevant parts	1	1	1		1
7-03	Faetal doppler	2	1	1		1
	Consumables, Spare parts, other relevant parts	2	1	1		1
7-04	Slit lamp	1	2	1	1	2
	Consumables, Spare parts, other relevant parts	1	2	1	1	2
7-05	Refract meter	1		1		2
	Consumables, Spare parts, other relevant parts	1		1		2
7-06	Perimeter	1				
	Consumables, Spare parts, other relevant parts	1				
7-07	ENT Treatment unit	2	2	2	2	2
	Consumables, Spare parts, other relevant parts	2	2	2	2	2
7-08	Nebulizer	1	1	1	1	3
	Consumables, Spare parts, other relevant parts	1	1	1	1	3
7-09	Otorhinoscope	4	4	6	5	3
	Consumables, Spare parts, other relevant parts	4	4	6	5	3
7-10	Laryngoscope	4	4	6	5	3
	Consumables, Spare parts, other relevant parts	4	4	6	5	3
7-11	Head mirror, fiber with light source	4	4	6	5	3
	Consumables, Spare parts, other relevant parts	4	4	6	5	3
7-12	Wax treatment set	1	1	2	1	1
	Consumables, Spare parts, other relevant parts	1	1	2	1	1
7-13	Dental unit	3	1	1	3	3
	Consumables, Spare parts, other relevant parts	3	1	1	3	3
7-14	X-ray unit, dental	1	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1	1
7-15	Infrared lump	1				1
	Consumables, Spare parts, other relevant parts	1				1
7-16	Ultraviolet lump	1				1
	Consumables, Spare parts, other relevant parts	1				1
7-17	Electric cautery unit					1
	Consumables, Spare parts, other relevant parts					1

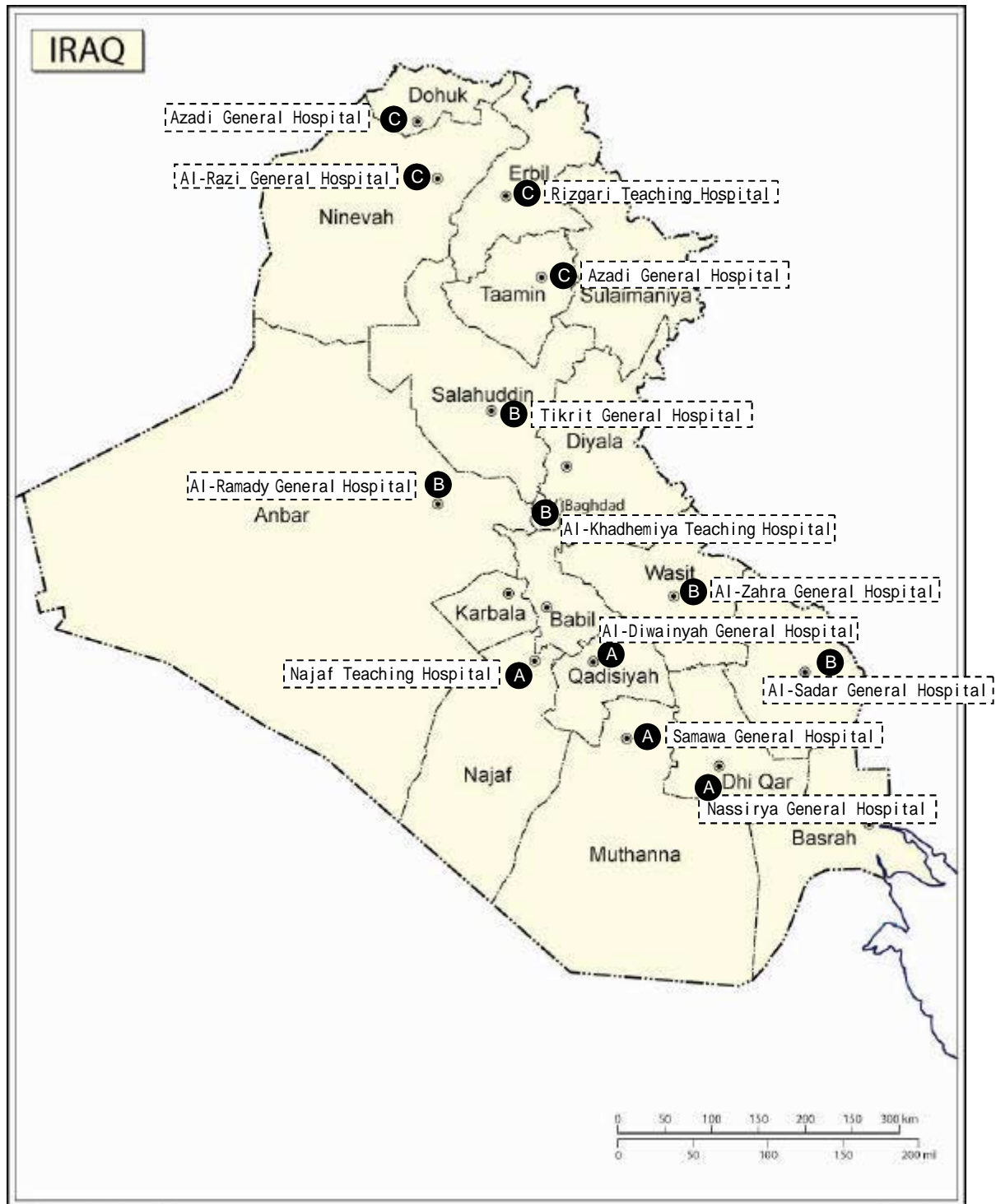
For the working schedules they are refer to Phase-1 of 13 cities general hospitals.

Project Profile (Project Summary)

Sector	Health
Project Name	13 city general hospital rehabilitation, Phase III Azadi General Hospital, Rizgary Teaching Hospital, Al-Razi General Hospital, Azadi General Hospital
Background (current state, necessity of immediate action & the needs)	<p>These general hospitals were constructed by Japanese company. Hospitals of Rizgary was opened in 1984, and hospitals of Azadi, Al-Razi and Azadi were opened 1986. For a while Japanese engineers were maintaining facilities and medical equipment with Iraqi engineers. However, due to economic sanction which started in 1990, Japanese engineer were returned to Japan and all facilities and medical equipment were maintained by Iraqi engineers/technicians only. And prohibition of for consumable and spare parts accelerated decrepitude of equipment. Some equipment and facilities were replaced by OFFP. But it did not solve fundamental problem. Air conditioner, steam and hot water supply are not functioning now. Energy supply to medical equipment is suspended and steam sterilizer cannot operate now. Surgical operation is making under contaminated fresh air condition. Decrepitude of medical equipment is serious now. And this condition prevents to provide basic medical care.</p> <p>These hospitals except Al-Razi are only general district hospital of each governorate. Normal function of these hospitals is important to local people because primary health care is not functioning well due to security and logistic reasons.</p> <p>Al-Razi General Hospital is only general hospital in Mosul city and located in south area. There are 14 hospitals in Mosul. But all of them are located in north area. This area is new housing area and population is increasing. However, there is no hospital around there. To strengthen this hospital is urgent issue to inhabitants.</p> <p>This project focus on rehabilitation of these hospitals. This is last phase of 13 hospitals because some of these hospitals are better condition now.</p>
Counterpart and Executing Agencies	Ministry of Health, Governorate Health Office, Azadi General Hospital, Rizgary Teaching Hospital, Al-Razi General Hospital, Azadi General Hospital
Description of the Assistance	Facility of electricity, steam, water supply, drainage, air conditioning, medical gas, water treatment, and medical equipment of out patient, emergency, radiology, laboratory, operation room, and obstetric & gynecology department.
Project Site	<p>Azadi General Hospital (Dohuk Governorate, Dohuk)</p> <p>Rizgary Teaching Hospital (Erbil Governorate, Erbil)</p> <p>Al-Razi General Hospital (Ninevah Governorate, Mosul)</p> <p>Azadi General Hospital (Taamin Governorate, Kirkuk)</p>
Effectiveness/Benefit (beneficiary)	Dohuk Governorate (880 thousand), Erbil Governorate (1.33 million), Ninevah Governorate (2.52 million), and Taamin Governorate (810 thousand). Total 5.54 million is population of beneficiary. 20% of Iraqi population is covered
Presumed Project Period	<p>Production: 4.5 months</p> <p>Transportation: 2 months</p> <p>Installation: 4 months</p> <p>Operation training: 1 month</p>

Presumed Contract Manner (competitive bid, nominated contract)	General competitive bidding
Name of Nominated Contractor	
Expected Transit Method	Container and bulk transport are expected. The common routes from Japan to the project sites are Jordan route, Kuwait route, and Umm Qasr route via Dubai. The cargo insurance should cover all risks. Moreover, the cargoes should be escorted by armed security escorts to mitigate risks inside Iraq.
Necessity of the Installation of Machinery	Necessary
Profile of Engineer responsible for the installation (nationality & capability)	Facility of electricity, water supply, drainage, air conditioning, medical gas, water treatment, and medical equipment can be installed by Iraqi engineers. There are some engineering companies for installation and maintenance of facility and medical equipment. They have enough experience to carry out this kind of work. Training under responsibility of main contractor is necessary because they are not familiarized with Japanese facility and medical equipment.
Operation and Maintenance (O&M) Structure	5 - 8 engineers and around 10 technicians are working on each project site (hospital). They make maintenance for facilities and equipment. It will be necessary to subcontract with company of private sector for complicated technical matter.
Necessity of O&M Training	Necessary
Contents of Training	<p>(Contents)</p> <p>Facility equipment: Daily maintenance, Periodical maintenance, Trouble shooting, Repair technique</p> <p>Medical equipment: Daily maintenance, Trouble shooting, Repair technique</p> <p>(Place)</p> <p>Facility equipment: Factory of manufacturer in Japan.</p> <p>Medical equipment: Training center or factory of manufacturer in Japan or third country.</p>
Other remarks regarding O&M	
Involvement of Other Donors	Nil
Other Considerations (environment, gender, etc)	Nil

Location of Project Sites



Map No. 3535 Rev. 5 UNITED NATIONS
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Department of Public Information
Cartographic Section

Rough Estimates of Project Cost

(Unit : Thousands Yen)

Classification			Cost
Equipment Cost (including Transport and Installation)			7,020,228
	1.Procurement cost		4,586,055
	Azadi General Hospital	General facilities	918,159
		Medical facilities	155,651
		Medical equipment	165,507
		Sub-total	1,239,317
	Rizgari Teaching Hospital	General facilities	984,675
		Medical facilities	131,062
		Medical equipment	196,822
		Sub-total	1,312,559
	Al-Razi General Hospital	General facilities	906,105
		Medical facilities	144,211
		Medical equipment	282,301
		Sub-total	1,332,617
	Azadi General Hospital	General facilities	360,678
		Medical facilities	137,637
		Medical equipment	203,247
		Sub-total	701,562
	2.Transport fee		1,312,604
	3.Installation cost		1,121,569
Design and Supervision			433,305
Total of Project Cost			7,453,533

Equipment List

Phase-III		Azadi General Hospital (Kirkuk)	Rizgary Teaching Hospital (Erbil)	Al Razi General Hospital (Mosul)	Azadi General Hospital (Dohuk)
General Facilities					
1. Electrical Equipment					
1-01	High voltage pannel (replacement of breaker, relay, meter)	1		1	1
	Other relevant materials				
1-02	HV Transformer	2		2	
	Other relevant materials	2		2	
1-03	Low voltage pannel (replacement of breaker, relay, meter)	1		1	1
	Other relevant materials				
1-04	Generator	2	2	2	1
	Other relevant materials	2	2	2	1
1-05	Synchronizer panel	1	1	1	
	Other relevant materials	1	1	1	
1-06	DC battery panel	1	1	1	
	Other relevant materials	1	1	1	
1-07	Lift for patients	2	2	2	
	Other relevant materials	2	2	2	
1-08	Lift for beds	2	2	2	2
	Other relevant materials	2	2	2	2
1-09	Transformer for outside use	2		2	
	Other relevant materials	2		2	
2. Water supply and sewage					
2-01	Water supply and sewage system	1	1	1	1
	Other relevant materials	1	1	1	1
2-02	Pump for sanitary	1	1	1	1
	Other relevant materials	1	1	1	1
3. Air Conditioning Equipment					
3-01	Spare parts for air handling unit system (6 months)	1	1	1	1
	Other relevant materials	1	1	1	1
3-02	Heat source equipment system	1	1	1	
	Other relevant materials	1	1	1	
3-03	Pump system	1	1	1	1
	Other relevant materials	1	1	1	1
3-04	Fans system	1	1	1	1
	Other relevant materials	1	1	1	1
Medical Facilities					
1. Medical Gas					
1-01	Medical Vacuum Pump Plant	1	1	1	1
	Other materials	1	1	1	1
1-02	Medical Air Pump Plant	1	1	1	1
	Other materials	1	1	1	1
1-03	Entonox Automatic Changeover Manifold	1	1	1	1
	Other materials	1	1	1	1
1-04	Replacement of Outlet	1	1	1	1
	Other materials	1	1	1	1
1-05	Replacement Of Oxygen,Nitrous oxide & Air	1	1	1	1
	Other materials	1	1	1	1
2. RO Apparatus					
2-01	Primary water pump	1	1	1	1
2-02	Primary water filter	1	1	1	1

2-03	Softener	1	1	1	1
	Other materials, Spare parts	2	1	1	1
4. Hand washing unit					
4-01	Hand washing unit	22	14	22	18
4-02	Sink	11	7	11	9
	Other materials	22	14	22	18
5. Walk-in refrigerator					
5-01	Walk-in refrigerator	2	2	2	2
	Other materials	2	2	2	2
Medical Equipment					
1. Laboratory					
1-01	Automatic analyzer	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1
1-02	Spectrophotometer	2	1	2	1
	Consumables, Spare parts, other relevant parts	2	1	2	1
1-03	Elcetolyte analyzer	1		1	1
	Consumables, Spare parts, other relevant parts	1		1	1
1-04	Centrifuge	1			2
	Consumables, Spare parts, other relevant parts	1			2
1-05	Haematology analyzer	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1
1-06	Microscope		3		
	Consumables, Spare parts, other relevant parts		3		
1-07	Blood bank refugerilator	1	1		1
	Consumables, Spare parts, other relevant parts	1	1		1
1-08	Hematocrit centrifuge				
	Consumables, Spare parts, other relevant parts				
1-09	Blood gas anlyzer	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1
1-10	Incubater		1		2
	Consumables, Spare parts, other relevant parts		1		2
1-11	Sterilizer for Lab (Vertical type)	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1
1-12	Water distiller	1	1		1
	Consumables, Spare parts, other relevant parts	1			1
1-13	Blood Coagulation anlyzer				
	Consumables, Spare parts, other relevant parts				
2. Radiology					
2-01	X-ray unit, general	1	1	2	2
	Consumables, Spare parts, other relevant parts	1	1	2	2
2-02	X-ray unit, fluorograghy	1	1	1	
	Consumables, Spare parts, other relevant parts	1	1	1	
2-03	Ultrasonic, general collar	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1
2-04	Dental, Pantmography		1		1
	Consumables, Spare parts, other relevant parts		1		1
2-05	Automatic film developper	1	2	2	2
	Consumables, Spare parts, other relevant parts	1	2	2	2
3. Operation theatre / CSSD					
3-01	Operation table	4	7	5	6
	Consumables, Spare parts, other relevant parts	4	7	5	6
3-02	Halogen lamp for Shadowless lamp	5	5	3	5
	Consumables, Spare parts, other relevant parts	5	5	3	5
3-03	Anaesthesia apparatus with ventilator		1	1	
	Consumables, Spare parts, other relevant parts		1	1	
3-04	Patient monitor	1	1	1	
	Consumables, Spare parts, other relevant parts	1	1	1	

3-05	Ventilator		1	1	
	Consumables, Spare parts, other relevant parts		1	1	
3-06	Electric cautery unit		2	1	
	Consumables, Spare parts, other relevant parts		2	1	
3-07	X-ray unit, C-arm			1	
	Consumables, Spare parts, other relevant parts			1	
3-08	Shadowless lamp, mobile	2	1	2	1
	Consumables, Spare parts, other relevant parts	2	1	2	1
3-09	Defibrillator	2	1	2	1
	Consumables, Spare parts, other relevant parts	2	1	2	1
3-10	Suction unit	2	2	2	2
	Consumables, Spare parts, other relevant parts	2	2	2	2
3-11	Halogen lamp for Shadowless lamp		2		1
	Consumables, Spare parts, other relevant parts		2		1
3-12	Emergency trolley	1		1	
	Consumables, Spare parts, other relevant parts	1		1	
3-13	Spare parts for Autoclave Sterilizer (F1-30) and repair	3	3	3	3
	Consumables, Spare parts, other relevant parts	3	3	3	3
3-14	Spare parts for Autoclave Sterilizer (F1-08) and repair	1			1
	Consumables, Spare parts, other relevant parts	1			1
4. OB/GN					
4-01	Faetal monitor	1		1	1
	Consumables, Spare parts, other relevant parts	1		1	1
4-02	Ultrasound apparatus, B/W	1		1	1
	Consumables, Spare parts, other relevant parts	1		1	1
4-03	Suction unit	1		1	1
	Consumables, Spare parts, other relevant parts	1		1	1
4-04	New born treatment table	1		1	1
	Consumables, Spare parts, other relevant parts	1		1	1
4-05	Operation table	1		3	2
	Consumables, Spare parts, other relevant parts	1		3	2
4-06	Delivery table	4		1	2
	Consumables, Spare parts, other relevant parts	4		1	2
4-07	Halogen lamp for Shadowless lamp	3		3	3
	Consumables, Spare parts, other relevant parts	3		3	3
4-08	Electrolyte analyzer	1		1	1
	Consumables, Spare parts, other relevant parts	1		1	1
4-09	Shadowless lamp, mobile	1		1	1
	Consumables, Spare parts, other relevant parts	1		1	1
5. ICU					
5-01	Patient monitor, Bedside		8	8	8
	Consumables, Spare parts, other relevant parts		8	8	8
5-02	Central monitor		1	1	1
	Consumables, Spare parts, other relevant parts		1	1	1
5-03	E.C.G	1	1	2	1
	Consumables, Spare parts, other relevant parts	1	1	2	1
5-04	Defibrillator	1	3	2	1
	Consumables, Spare parts, other relevant parts	1	3	2	1
5-05	Ventilator		1	3	
	Consumables, Spare parts, other relevant parts		1	3	
5-06	Infusion pump	3	5	4	2
	Consumables, Spare parts, other relevant parts	3	5	4	2
5-07	Syringe pump	1	5	4	2
	Consumables, Spare parts, other relevant parts	1	5	4	2
5-08	Blood Gas Analyzer			1	
	Consumables, Spare parts, other relevant parts			1	

5-09	Mobile X-ray unit		1	1	1
	Consumables, Spare parts, other relevant parts		1	1	1
5-10	ICU bed	4	4	4	4
	Consumables, Spare parts, other relevant parts	4	4	4	4
6. NICU					
6-01	Baby incubator	4		5	5
	Consumables, Spare parts, other relevant parts	4		5	5
6-02	Infant warmer	4		4	4
	Consumables, Spare parts, other relevant parts	4		4	4
6-03	Infant ventilator			2	
	Consumables, Spare parts, other relevant parts			2	
6-04	Syringe pump	2		4	2
	Consumables, Spare parts, other relevant parts	2		4	2
6-05	Infusion pump	2		4	2
	Consumables, Spare parts, other relevant parts	2		4	2
7. Outpatients					
7-01	E.C.G	1	1	2	2
	Consumables, Spare parts, other relevant parts	1	1	2	2
7-02	Ultrasound apparatus, B/W	1		2	2
	Consumables, Spare parts, other relevant parts	1		2	2
7-03	Faetal doppler	1		2	2
	Consumables, Spare parts, other relevant parts	1		2	2
7-04	Slit lamp		1	1	1
	Consumables, Spare parts, other relevant parts		1	1	1
7-05	Refract meter	1	1	1	
	Consumables, Spare parts, other relevant parts	1	1	1	
7-06	Perimeter		1	1	1
	Consumables, Spare parts, other relevant parts		1	1	1
7-07	ENT Treatment unit	2	3	3	2
	Consumables, Spare parts, other relevant parts	2	3	3	2
7-08	Nebulizer	1	3	3	1
	Consumables, Spare parts, other relevant parts	1	3	3	1
7-09	Otorhinoscope	3	5	2	3
	Consumables, Spare parts, other relevant parts	3	5	2	3
7-10	Laryngoscope	3	5	2	3
	Consumables, Spare parts, other relevant parts	3	5	2	3
7-11	Head mirror, fiber with light source	3	5	2	3
	Consumables, Spare parts, other relevant parts	3	5	2	3
7-12	Wax treatment set	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1
7-13	Dental unit	1	3	3	3
	Consumables, Spare parts, other relevant parts	1	3	3	3
7-14	X-ray unit, dental	1	1	1	1
	Consumables, Spare parts, other relevant parts	1	1	1	1
7-15	Infrared lump			1	1
	Consumables, Spare parts, other relevant parts			1	1
7-16	Ultraviolet lump			1	1
	Consumables, Spare parts, other relevant parts			1	1
7-17	Electric cautery unit		1		1
	Consumables, Spare parts, other relevant parts		1		1

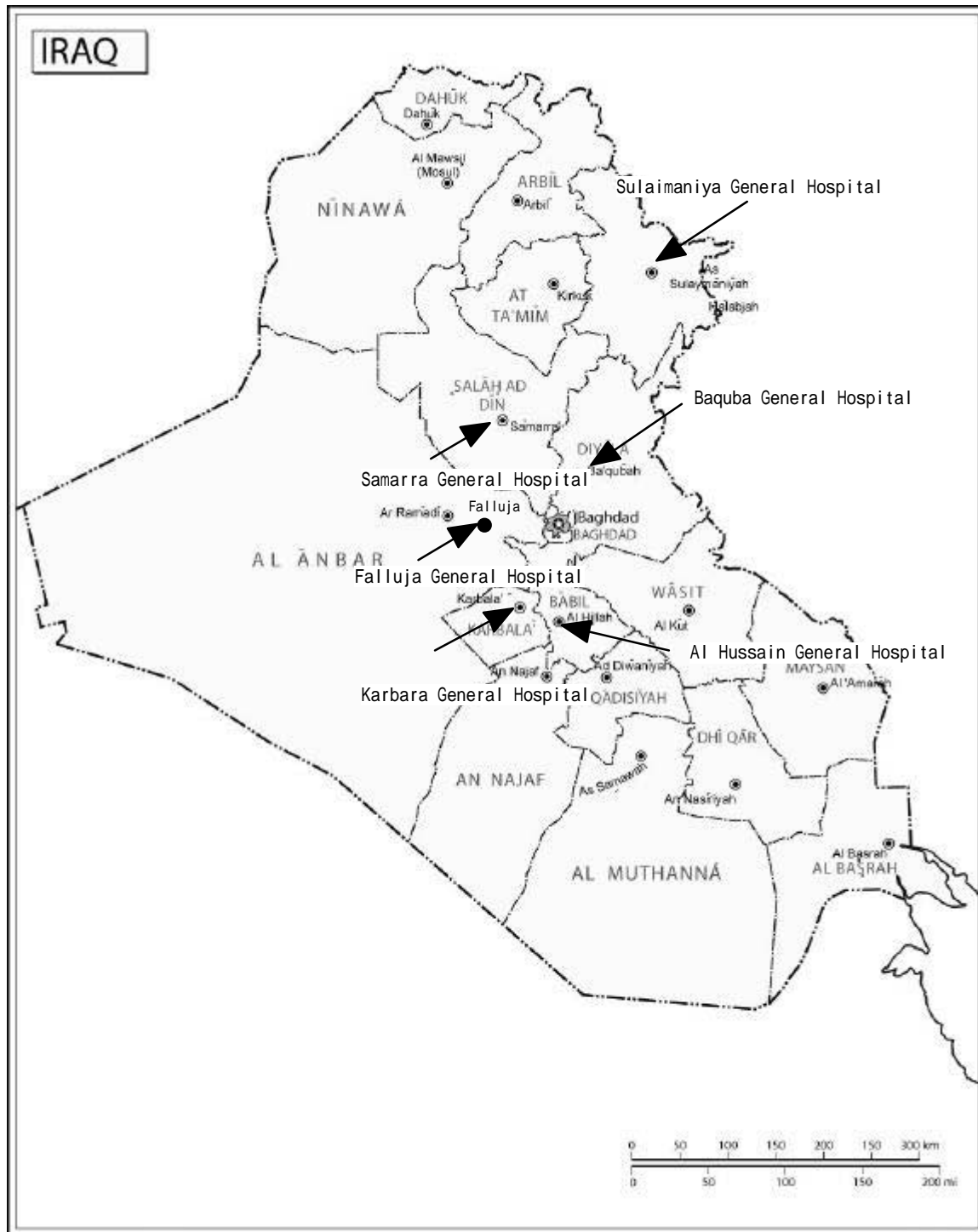
For the working schedules they are refer to Phase-1 of 13 cities general hospitals.

Project Profile (Project Summary)

Sector	Health
Project Name	Strengthen Medical Equipment for District Hospital in Governorate
Background (current state, necessity of immediate action & the needs)	<p>Iraq started structure change of diseases patten from communicable to chronicle diseases before 1990. However, speed of this change was slow and still communicable diseases prevail and chronicle diseases increased. Otherwise, causes of death of adult has changed from communicable diseases to chronicle diseases. Prevention of chronicle diseases is necessary for improvment of environment and life style. Strengthen primary health care and health education is important.</p> <p>Referral system is not well functioning now. All people come to hospital to get medical services. It reflected Iraq health system that was biased to hospital care. It is necessary to maintain proper referral system and function primary health care facility i.e. health center. Except emergency cases, all patients should be screened in health center and transfer secondary facility that can not be treated in health center.</p> <p>Secondary health facility, namely district hospital, could not maintain medical equipment due to over 10 years economic sanction. It was big obstacle to maintain facility and equipment in good condition. This situation becomes obstacle to supply basic medical care to people. OFFP replaced or rehabilitate some of obsolescent equipment and / or facility. However, fundamental problem is not yet solved. Accordingly this project focuses to strengthen secondary care of these hospitals. Department for emergency, internal, surgical, obstetric, pediatric, X-ray, laboratory, operation and ICU are to be strengthen.</p>
Counterpart and Executing Agencies	Ministry of Health
Description of the Assistance	Medical equipment for department of emergency, internal, surgical, operation, ICU, physical examination and laboratory.
Project Site	<p>Sulaimaniya General Hospital (Sulaimaniya Governorate)</p> <p>Baquba General Hospital (Diyala Governorate)</p> <p>Samarra General Hospital (Salahuddin Governorate)</p> <p>Falluja General Hospital (Anbar Governorate)</p> <p>Karbala General Hosspital (Karbala Governoratte)</p> <p>Al Hussein General Hospital (Babil Governorate)</p>
Effectiveness/Benefit (beneficiary)	<p>(1) Population of beneficiary</p> <p>Sulaimaniya Governorate (1.6 million), Diyala Governorate (1.27 million), Salahuddin Governorate (970 thousand), Anbar Governorate (1.27 million), Karbala Governorate (740 thousand), Babil Governorate (1.4 million), Total 7.27 million</p> <p>(2) Indicator of project effect</p> <ul style="list-style-type: none"> • Increase number of test (Laboratory, Functional, X-ray) • Increase number of operation • Increase number of patient
Presumed Project Period	<p>Production period : 4 months after contract</p> <p>Transportation : 2 months</p> <p>Installation : 1.5 months</p> <p>Training for operation : 0.5 months</p>
Presumed Contract Manner (competitive bid, nominated contract)	Competitive bidding

Name of Nominated Contractor	
•Reason for Adopting Nominated Contractor	
Expected Transit Method	Container transport is expected. The common routes from Japan to the project sites are Jordan route, Kuwait route, and Umm Qasr route via Dubai. The cargo insurance should cover war risks. Moreover, the cargoes should be escorted by armed security escorts to mitigate risks inside Iraq.
Necessity of the Installation of Machinery	Necessary.
•Profile of Engineer responsible for the installation (nationality & capability)	Installation and adjustment by Iraqi engineers. There are some engineering companies for installation and maintenance of medical equipment. They have enough experience to carry out this kind of work. Training under responsibility of main contractor is necessary because they are not familiarized with Japanese medical equipment.
Operation and Maintenance (O&M) Structure	3 - 5 engineers and around 5 technicians are working on each project site (hospital). They make maintenance for facilities and equipment. It will be necessary to subcontract with company of private sector for complicated technical matter.
Necessity of O&M Training	Necessary.
•Contents of Training	Training of periodical checking, repair work, and management of maintenance is necessary for medical equipment.
•Other remarks regarding O&M	
Involvement of Other Donors	Nothing.
Other Considerations (environment, gender, etc)	Nothing.

Location of Project Site



Map No. 3825 Rev. 2 UNITED NATIONS
December 2002

Department of Public Information
Cartographic Section

Rough Estimate of Project Cost

(Unit: Thousand Yen)

Classification / Hospital			Cost
Equipment Cost (including Transport and Installation)			1,334,768
	1.Procurement cost		1,202,879
	Sulaimania General Hospital	Medical equipment	11,484
		Medical facilities	0
		Sub-total	11,484
	Samarra General Hospital	Medical equipment	218,811
		Medical facilities	25,077
		Sub-total	238,907
	Baquba General Hospital	Medical equipment	248,362
		Medical facilities	25,078
		Sub-total	268,459
	Faluja General Hospital	Medical equipment	78,718
		Medical facilities	25,078
		Sub-total	98,815
	Karbara General Hospital	Medical equipment	259,253
		Medical facilities	25,078
		Sub-total	279,350
	Karbara General Hospital	Medical equipment	260,862
		Medical facilities	25,078
		Sub-total	280,959
	2.Transport fee		64,539
	3.Installation cost		67,350
Design and Supervision			116,367
Total of Project Cost			1,451,145

Equipment List

No	Equipment	Sulaimania General Hospital	Samarra General Hospital	Baquba General Hospital	Faluja General Hospital	Karbala General Hospital	Karbala General Hospital
OP	Operation Dept.						
1	Operation table		3	3	4	3	4
2	Operation table, orthopedic					1	
3	Operation light		3	3		4	4
4	Anesthesia		3	3	4	4	4
5	Electrosurgical unit		1	1	1	1	1
6	Defibrillator		1	1		1	1
7	Bed side monitor		3	3		4	4
8	Suction unit, surgical		3	3	4	4	4
9	Instruments set, abdomen		3	3		3	5
10	Stretcher		2	2	2	2	2
11	Plaster cutter		1	1		1	1
12	Instrument cabinet		2	2		2	2
ST	Sterilization Dept.						
1	High pressure steam sterilizer, with boiler		2	2		3	2
2	Drying oven		1	1		1	1
3	Cast, diameter 40cm				10		
OB	Obstetric and Gynecology Dept.						
1	Examination table		2		2		
2	Cardio tocograph		2				
3	Doppler detector		2				
4	Examination light		2		2		
5	Delivery table		2				
6	Vaginal speculum		1				
7	Suction unit, mobile		2		2		
8	Vacuum extractor		1				
9	Instruments set, delivery		3		3		
10	Infant care unit		2		2		
11	Resuscitation set, adult		1				
12	Resuscitation set, neonate		1				
13	Bed side monitor		1				
14	Instruments set, cesarian section		2				
15	Colposcope		1				
16	Weighing scale, neonate		2				

PE	New born, pediatric						
1	Infant incubator		3				
2	Infant care unit		2				
3	Phototherapy unit		2		2		
4	Suction unit, mobile		2		2		
5	Resuscitation set, neonate		1		1		
6	Resuscitation set, pediatric		1		1		
7	Ultrasonic nebulizer		1				
8	Bed side monitor		1				
9	Puls oximeter		2				
10	Weighing scale, neonate		1				
11	Bilirubin meter		1				
12	Syringe pump		2				
13	Baby cot		4				
IU	ICU						
1	ICU bed		6	6	6	6	6
2	Monitoring system, 6 beds	1	1	1	1	1	1
3	Bed side monitor		2	2		2	2
4	Puls oximeter		2	2		2	2
5	Defibrillator		1	1	1	1	1
6	Syringe pump		2	3		3	3
7	Infusion pump		2	3	3	3	3
8	Suction unit, mobile		1	1	1	1	1
9	Resuscitation set, adult		2	2	2	2	2
10	Laryngoscope set		1	1	1	1	1
11	Ventilator, adult		2	2		2	2
12	Ventilator, neonate		1				
PH	Functional Test						
1	ECG		1	3		3	3
2	Spirometer		1	1		1	1
3	Ultrasound diagnostic unit, B/W		1	1	1	1	1
4	Ultrasound diagnostic unit, color		1	1		1	1
PH							
1	Medical refrigerator		2	2		2	2
2	Electrical balance		1	1		1	1
Laboratory							
CL	Biochemistry						
1	Biochemical analyser		1	1		1	1
2	Spectrophotometer		1	1		1	1
3	Blood gas analyser		1	1		1	1
4	Flame photometer		1	1		1	1

5	Water bath		1	1		1	1
6	Centrifuge		1	1		1	1
7	Micropipette set, adjustable		2	2	2	2	2
8	Shaker		1	1		1	1
HE	Hemaatology						
1	Blood cell counter, 12 segment		1	1		1	1
2	Bilirubin meter		1	1		1	1
3	Hematocrit centrifuge		1	1		1	1
4	Microscope		4	6		6	6
5	Leukocyte counter		2	2		2	2
GE	General Examination						
1	Drying oven				2		
2	Medical refrigerator				1		
3	Blood refrigerator		1	1		1	1
4	Water distillation unit, burn-sted type, with dionizer		1	1	1	1	1
5	Refractometer		1	1		1	1
RA	X-ray						
1	X-ray unit		1	1	1	1	1
2	Fluoroscopy		1	1		1	1
3	Mobile X-ray		1	1	2	1	2
4	Surgical X-ray , C-arm		1	1	1	1	1
5	X-ray film developer, table top		1	1	1	1	1
6	Apron		2	2	2	2	2
7	Film viwer		6	4		4	4
ED	Endoscopy dept.						
1	Gastrofiber scope		1	1	1	1	1
2	Colonfiber scope		1	1	1	1	1
3	Bronchofiber scope		1	1		1	1
4	Bronchoscope, rigid		1	1		1	1
5	Electrosurgical unit		1	1		1	1
6	Endoscope cabinet		1	1		1	1
7	Endoscpy table		1	1	1	1	1
OH	Ophthalmology						
1	Slit lamp		1	1		1	1
2	Ophthalmoscope		1	2		2	2
3	Trial lens set		1	1		1	1
EN	ENT						
1	Instruments table		2	2		2	2
2	Ultrasonic nebulizer		1	1		1	1
3	Suction unit, mobile		2	2		2	2

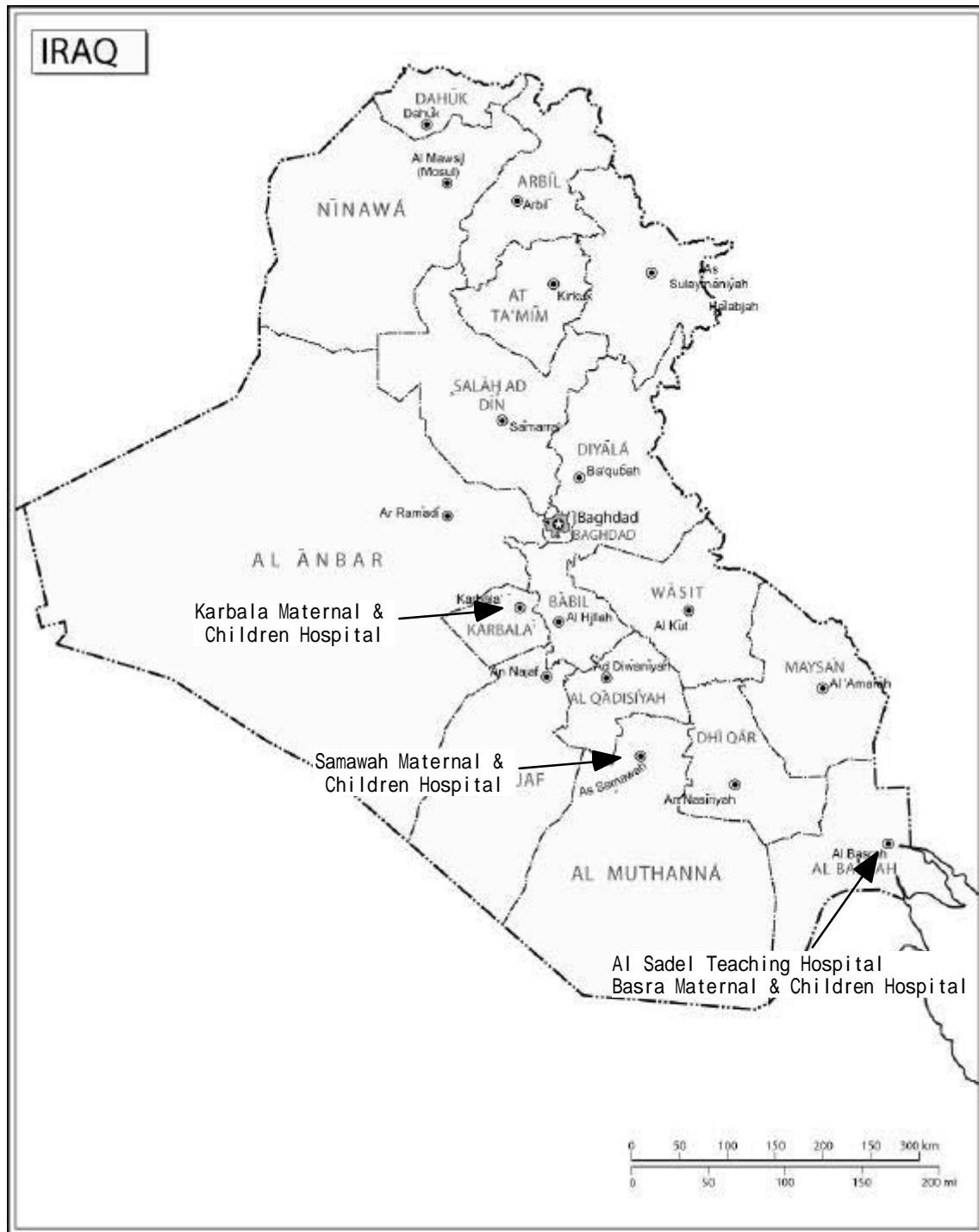
4	Examintion light		1	1		1	1
WA	Patient ward						
1	Stretcher		3	6		6	6
2	Wheel chair		3	6		6	6
3	Suction unit, mobile		2	2		2	2
4	Instruments table		5	5		5	5
5	Ultrasonic nebulizer		2	2		2	2
6	Thermometer		10	10		10	10
7	Instrumetns cabinet		3	6		6	6
8	Sphygmomanometer		10	10	10	10	10
9	Stethoscope		10	10	10	10	10
10	Weighing scale, adult		3	3		3	3
11	Walker		5	5		5	5
12	Examintion light		3	3		3	3
13	Patient bed with table		7	172		147	172
14	Infusion stand		30	70		60	70
OT	Others						
1	Medical gas system A		1	1	1	1	1
2	Scrub station with RO unit		1	1	1	1	1

Project Profile (Project Summary)

Sector	Health
Project Name	Strengthen Medical Equipment for Main Hospitals in South area
Background (current state, necessity of immediate action & the needs)	<p>Basra city is capital of Basra Governorate. It is third populated governorate (1.98 million) in Iraq. There are 10 hospitals in this city. Target hospital of this project is Al-Sadel Teaching Hospital and Basra Obstetric & Children Hospital in Basra City, Samawah Obstetric and Children Hospital in Samawah city, and Karbara Obstetric and Children Hospital in Karbara city.</p> <p>Al Sadel Teaching Hospital is teaching hospital of medical faculty of Basra university. This hospital is top referral hospital of Basra. However, referral system of Iraq is not functioning now. All patients come to hospital directly to get medial services. It is essential to strengthen primary health care and function referral system as soon as possible. Economic sanction of longer than 10 years big obstacle to maintain facility and equipment in good condition. This situation becomes obstacle to supply basic medical care to people. OFFP replaced or rehabilitate some of obsolescent equipment and / or facility. However, fundamental problem is not yet solved.</p> <p>This project focuses to strengthen secondary care of these hospitals. Obsolescent equipment will be replaced by this project. Target departments are emergency, medical, surgical, pediatric, obstetric, X-ray, laboratory, operation, and ICU. These departments are essential for any type of referral system that will be established in near future.</p> <p>At the same time, Obstetric and Children hospitals in Samawah and Karbara are included to this project. District hospitals of these cities have no Obstetric department that is necessary on secondary medical care.</p>
Counterpart and Executing Agencies	Ministry of Health
Description of the Assistance	Equipment for emergency, medical, surgical, pediatric, obstetric, X-ray, laboratory, operation room, and ICU are considered.
Project Site	<p>Basra City (Al-Sadel Teaching Hospital and Basra Obstetric & Children Hospital)</p> <p>Samawah city (Samawah Obstetric and Children Hospital)</p> <p>Karbara (Karbara Obstetric and Children Hospital)</p>
Effectiveness/Benefit (beneficiary)	<ol style="list-style-type: none"> Population of beneficiary <ul style="list-style-type: none"> • Basra Governorate (1.98 million) • Samawah Governorate (0.56 million) • Karbara Governorate (0.74 million) Indicator of project effect <ul style="list-style-type: none"> • Increase number of test (Laboratory, Functional, X-ray) • Increase number of operation • Increase number of patient • Increase the number of delivery in health facility
Presumed Project Period	<p>Production period : 4 months after contract</p> <p>Transportation : 2 months</p> <p>Installation : 1.5 months</p> <p>Training for operation : 0.5 months</p>
Presumed Contract Manner (competitive bid, nominated)	Competitive bidding

contract)	
Name of Nominated Contractor	
• Reason for Adopting Nominated Contractor	
Expected Transit Method	Container transport is expected. The common routes from Japan to the project sites are Jordan route, Kuwait route, and Umm Qasr route via Dubai. The cargo insurance should cover war risks. Moreover, the cargoes should be escorted by armed security escorts to mitigate risks inside Iraq.
Necessity of the Installation of Machinery	Necessary.
• Profile of Engineer responsible for the installation (nationality & capability)	Installation and adjustment by Iraqi engineers. There are some engineering companies for installation and maintenance of medical equipment. They have enough experience to carry out this kind of work. Training under responsibility of main contractor is necessary because they are not familiarized with Japanese medical equipment.
Operation and Maintenance (O&M) Structure	3 - 8 engineers and around 10 technicians are working on each project site (hospital). They make maintenance for facilities and equipment. It will be necessary to subcontract with company of private sector for complicated technical matter.
Necessity of O&M Training	Necessary.
• Contents of Training	Training of periodical checking, repair work, and management of maintenance is necessary for medical equipment.
• Other remarks regarding O&M	
Involvement of Other Donors	Nothing.
Other Considerations (environment, gender, etc)	Nothing.

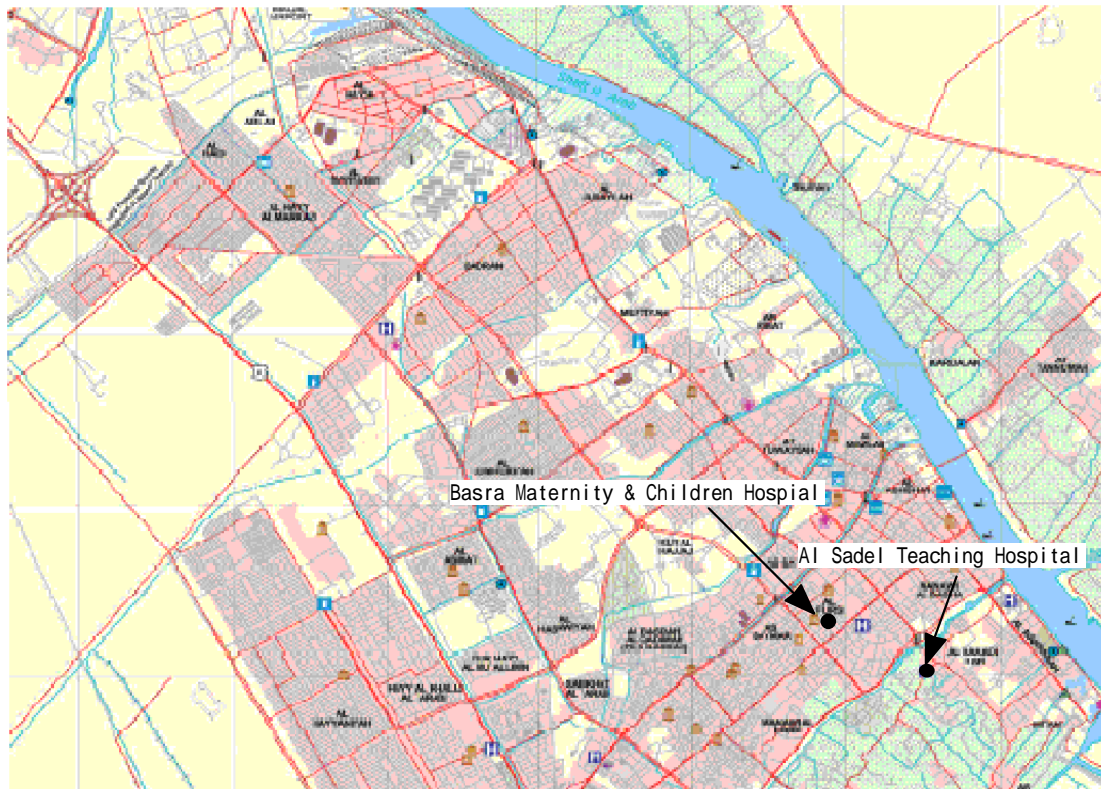
Location of Project Site



Map No. 1625 Rev. 3 UNITED NATIONS
December 2002

Department of Public Information
Cartographic Section

Location of Project Site (Basra City)



Rough Estimate for Project Cost

(Unit: Thousand Yen)

Classification			Cost
Equipment Cost (including Transport and Installation)			829,158
	1.Equipment cost		735,041
	Al Sadel Teaching Hospital	Medical Equipment	141,572
		Medical facility	17,888
		Sub-total	159,462
	Basra Obstetric & Children Hospital	Medical Equipment	242,023
		Medical facility	34,123
		Sub-total	276,146
	Samawah Obstetric & Children Hospital	Medical Equipment	109,756
		Medical facility	26,161
		Sub-total	136,917
	Karbara Obstetric & Children Hospital	Medical Equipment	141,330
		Medical facility	21,186
		Sub-total	162,516
2.Transport fee		34,590	
3.Installation cost		59,527	
Design and Supervision			83,528
Total of Project Cost			912,686

Equipment List

No.	Equipment	Al Sadel Teaching Hospital	Basra Obstetric & Children Hospital	Samawah Obstetric & Children Hospital	Karbara Obstetric & Children Hospital
OP	Operation Dept.				
1	Operation table		5	2	2
2	Operation light		5	2	2
3	Anesthesia		4	2	2
4	Electrosurgical unit		2	2	2
5	Defibrillator		2	1	1
6	Bed side monitor		4	2	2
8	Suction unit, surgical		2	2	2
7	Instruments set, abdomen		6	4	4
8	Stretcher			1	1
9	Instruments cabinet			1	1
10	Laryngoscope set			1	2
ST	Sterilization Dept.				
1	High pressure steam sterilizer, with filter	2	2		2
2	Drying oven	1		1	1
3	Cast, diameter 40cm	10	10	10	10
OB	Obstetric and Gynecology Dept.				
1	Cardio tocograph			2	2
2	Doppler detector			1	1
3	Examination light			1	1
4	Delivery table			1	2
5	Suction unit, mobile				3
6	Vacuum extractor			1	1
7	Instruments set, delivery			5	5
8	Infant care unit				2
9	Resuscitation set, neonate			1	1
10	Instruments set, cesarean section			3	3
11	Weighing scale, neonate			1	1
PE	New born, pediatric				
1	Infant incubator				5
2	Infant care unit				1
3	Phototherapy unit				3

4	Suction unit, mobile				3
5	Ultrasonic nebulizer			2	2
6	Bed side monitor				2
7	Pulse oximeter			2	2
8	Syringe pump			2	2
9	Baby cot			4	4
IU	ICU				
1	ICU bed	8	8	3	3
2	Bed side monitor	8	8	3	3
3	Defibrillator	1	2	1	1
4	Syringe pump	3	5	2	2
5	Infusion pump	3	1	2	2
6	Suction unit, mobile	3	1	1	1
7	Resuscitation set, adult		1	1	1
8	Laryngoscope set	2			1
9	Ventilator, adult		3		
10	Ventilator, neonate				
PH	Functional Test				
1	ECG	2	2		1
2	Spirometer	1			
3	Ultrasound diagnostic unit, B/W	1	1	1	1
4	Ultrasound diagnostic unit, color	1	1		
	Laboratory				
CL	(Biochemistry)				
1	Biochemical analyzer	1	1	1	1
2	Spectrophotometer	1	2	1	1
3	Blood gas analyzer	1	1		
4	Flame photometer		1	1	1
5	Water bath	1			
6	Centrifuge	2	2	2	1
7	Micropipette set, adjustable	3	3	3	3
HE	(Hematology)				
1	Blood cell counter, 12 segment	1	1		
2	Bilirubin meter			1	1
3	Hematocrit centrifuge			1	1
4	Microscope	2	1	1	1
GE	(General examination)				
1	Drying oven	1	1		
2	Medical refrigerator	2		1	1
3	Blood refrigerator	2	2	1	1
4	Water distillation unit, burn-sted type, th deionizer	1	1	1	1

5	Refractometer	1		1	1
6	Steam sterilizer, vertical	1	1		
RA	X-ray				
1	X-ray unit	1	1	1	1
2	X-ray TV	1	1		
3	Mobile X-ray	1	1		
4	Surgical X-ray , C-arm	1	1		
5	X-ray film developer, table top	1	1	1	1
6	Apron	4	2	2	2
WA	Patient ward				
1	Stretcher		2	2	2
2	Wheel chair		2	2	2
3	Bed with table		150	100	70
4	Ophthalmoscope	2			
5	Oxygen inhalation set, cylinder		30	20	20
OT	Others				
1	Medical gas system A			1	1
2	Medical gas system B	1	1		
3	Scrub station with RO unit		2	2	2

Project Profile (Project Summary)

Sector	Health
Project Name	Strengthen Medical Equipment for Main Hospitals in Mosul City
Background (current state, necessity of immediate action & the needs)	<p>Mosul city is capital of Ninevah Governorate and the second populated area in Iraq. There are 13 hospitals. Target hospitals of this project are Al Kansa Teaching Hospital (Obstetric and Children), Mosul General Hospital, Ibn Sina Teaching Hospital (Internal), and Al Batool Obstetric & Children Hospital (Emergency, Obstetric and Children). Al Kansa Teaching Hospital and Ibn Sina Teaching Hospital are top referral hospital of north area. However, referral system of Iraq is not functioning now. All patients come to hospital directly to get medial services. It is essential to strengthen primary health care and function referral system as soon as possible. Economic sanction of longer than 10 years big obstacle to maintain facility and equipment in good condition. This situation becomes obstacle to supply basic medical care to people. OFFP replaced or rehabilitate some of obsolescent equipment and / or facility. However, fundamental problem is not yet solved.</p> <p>This project focuses to strengthen secondary care of these hospitals. Obsolescent equipment will be replaced by this project. Target departments are emergency, medical, surgical, pediatric, obstetric, X-ray, laboratory, operation, and ICU. These departments are essential for any type of referral system what will be established in near future.</p>
Counterpart and Executing Agencies	Ministry of Health, Ministry of Industry
Description of the Assistance	Equipment for emergency, medical, surgical, pediatric, obstetric & gynecology, X-ray, laboratory, operation room, and ICU are considered.
Project Site	Mosul City (Al Kansa Hospital, Ibn Sina Teaching Hospital, Al Batool Obstetric & Children Hospital, and Mosul General Hospital)
Effectiveness/Benefit (beneficiary)	<ol style="list-style-type: none"> Population of beneficiary <ul style="list-style-type: none"> Ninevah Governorate (2.52 million) Indicator of project effect <ul style="list-style-type: none"> Increase number of test (Laboratory, Functional, X-ray) Increase number of operation Increase number of patient Increase the number of delivery in health facility
Presumed Project Period	<p>Production period : 4 months after contract</p> <p>Transportation : 2 months</p> <p>Installation : 1.5 months</p> <p>Training for operation : 0.5 months</p>
Presumed Contract Manner (competitive bid, nominated contract)	Competitive bidding
Name of Nominated Contractor	
Reason for Adopting Nominated Contractor	
Expected Transit Method	Container transport is expected. The common routes from Japan to the project sites are Jordan route, Kuwait route, and Umm Qasr route via Dubai. The cargo insurance should cover war risks. Moreover, the cargoes should be escorted by armed security escorts to mitigate risks inside Iraq.
Necessity of the Installation of Machinery	Necessary.

Profile of Engineer responsible for the installation (nationality & capability)	Installation and adjustment by Iraqi engineers. There are some engineering companies for installation and maintenance of medical equipment. They have enough experience to carry out this kind of work. Training under responsibility of main contractor is necessary because they are not familiarized with Japanese medical equipment.
Operation and Maintenance (O&M) Structure	5 - 8 engineers and around 10 technicians are working on each project site (hospital). They make maintenance for facilities and equipment. It will be necessary to subcontract with company of private sector for complicated technical matter.
Necessity of O&M Training	Necessary.
Contents of Training	Training of periodical checking, repair work, and management of maintenance is necessary for medical equipment.
Other remarks regarding O&M	
Involvement of Other Donors	Nothing.
Other Considerations (environment, gender, etc)	Nothing.

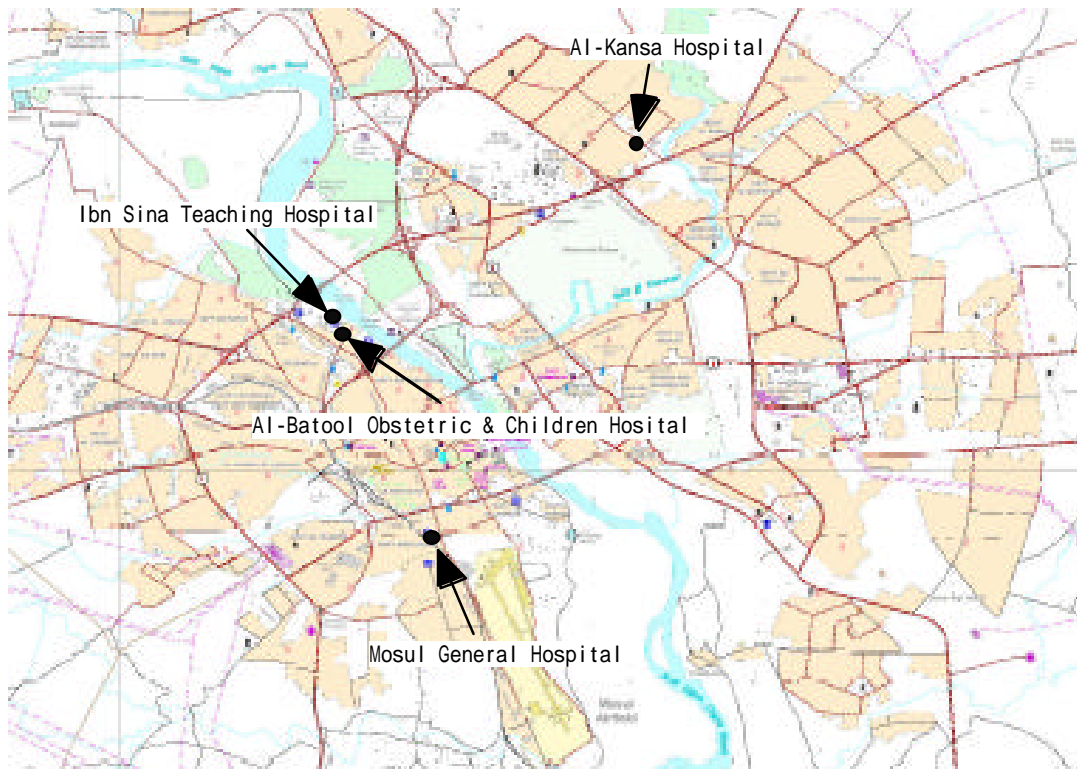
Location of Project Site



Map No. 3845 Rev. 3 UNITED NATIONS
December 2002

Department of Public Information
Cartographic Section

Location of Project Site (Mosul City)



Rough Estimate of Project Cost

(Unit: Thousand Yen)

Classification			Cost
Equipment Cost (including Transport and Installation)			807,028
	1.Procurement cost		706,979
	Al-Kansa Hospital	Medical Equipment	186,215
		Medical facilities	29,425
		Sub-total	215,640
	Ibn Sina Teaching Hospital	Medical Equipment	119,356
		Medical facilities	20,548
		Sub-total	139,904
	Al-Batool Maternity & Children Hospital	Medical Equipment	126,590
		Medical facilities	20,408
		Sub-total	146,998
	Mosul General Hospital	Medical Equipment	183,166
		Medical facilities	21,271
		Sub-total	204,437
2.Transport fee		39,960	
3.Installation cost		60,089	
Design and Supervision			81,210
Total of Project Cost			888,238

Equipment List

No.	Equipment	Al-Kansa Hospital	Ibn Sina Teaching Hospital	Al-Batool Maternity & Children Hospital	Mosul General Hospital
EM	Emergency				
1	Stretcher	5			
2	Wheel chair		1	3	10
3	Suction unit, mobile	5		3	3
4	Oxygen inhalation set, cylinder	10	5	10	10
5	Bed side monitor	3		1	3
6	Defibrillator				1
7	Resuscitation set, adult	1		3	3
8	Resuscitation set, neonate	1		2	3
9	Laryngoscope set		2		2
10	Treatment table				5
11	Operation table	1		1	1
12	Instruments set for suturing			5	5
OP	Operation Dept.				
1	Operation table	6	1		1
2	Operation table, orthopedic				1
3	Operation light		1		2
4	Anesthesia	6			2
5	Electrosurgical unit	2	3		2
6	Defibrillator				1
7	Bed side monitor	6	5		2
8	Suction unit, surgical	4	2	3	2
9	Instruments set, abdomen	3	4		3
10	Laryngoscope set	5		3	2
11	Instruments table	6		3	4
ST	Sterilization Dept.				
1	High pressure steam sterilizer, with boiler	2		2	2
2	Sterilizer, vertical	1		2	2
3	Steam sterilizer, table top		1	2	1
4	Drying oven	1		2	1
5	Cast, diameter 40cm	10	5	5	5
OB	Obstetric and Gynecology Dept.				
1	Examination table	2		3	
2	Cardio tocograph	1		3	
3	Doppler detector	2		5	
4	Examination light	2		5	
5	Delivery table	3		3	
6	Vaginal speculum	3		6	

7	Suction unit, mobile	3		6	
8	Vacuum extractor	1		1	
9	Instruments set, delivery			5	
10	Infant care unit			3	
11	Resuscitation set, adult			3	
12	Resuscitation set, neonate			5	
13	Operation light, mobile	3		3	
14	Instruments table			6	
PE	New born, pediatric				
1	Infant incubator	10		10	
2	Infant care unit			3	
3	Phototherapy unit	2			
4	Suction unit, mobile	5		3	
5	Resuscitation set, neonate	2		3	
6	Resuscitation set, pediatric	2		3	
7	Ultrasonic nebulizer				2
8	Weighing scale, neonate				1
IU	ICU				
1	ICU bed	10	8	3	10
2	Monitoring system, 8 beds		1		1
3	Bed side monitor	5		3	
4	Suction unit, mobile	3	4	5	4
5	Resuscitation set, adult	2	2		3
6	Laryngoscope set	2	1		3
7	Ventilator, adult	1	4	3	3
8	Ventilator, neonate	2			
PH	Functional Test				
1	ECG		1		2
2	Spirometer				1
3	Ultrasound diagnostic unit, mobile	2	1		
4	Ultrasound diagnostic unit, B/W	1	1	1	1
5	Ultrasound diagnostic unit, color	1	1		1
	Laboratory				
CL	(Biochemistry)				
1	Biochemical analyzer	1	1	1	1
2	Spectrophotometer	1	1	1	1
4	Flame photometer		1		
5	Water bath	1			1
6	Centrifuge	2	2	2	2
7	Micropipette set, adjustable	3	3	3	3
HE	(Hematology)				
1	Blood cell counter, 12 segment		1	1	1
3	Hematocrit centrifuge	1	1	1	1
4	Microscope	5	2	3	2
5	Leukocyte counter		2	2	2
GE	(General examination)				
1	Drying oven		1	1	1

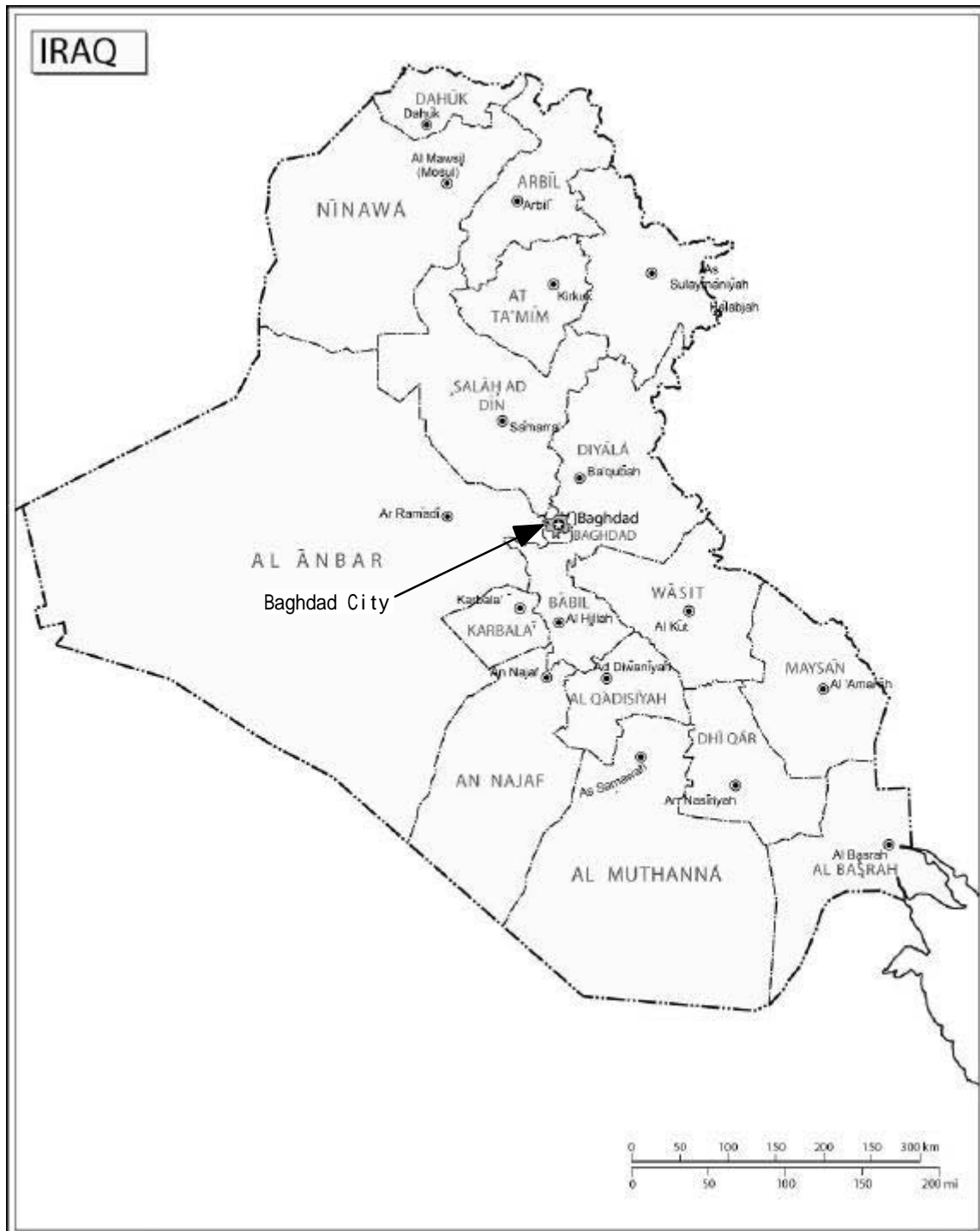
2	Medical refrigerator		1	1	1
3	Blood refrigerator		1	1	1
4	Water distillation unit, burn-sted type, with deionizer		1	1	1
5	Refractometer		1		1
4	Microscope			2	1
RA	X-ray				
1	X-ray unit	1	1	1	1
3	Mobile X-ray	1	1		1
4	Surgical X-ray , C-arm	1		1	1
5	X-ray film developer, table top	2	1	1	1
6	Apron	3		3	3
ED	Endoscopy dept.				
1	Gastrofiber scope				1
2	Colonfiber scope		1		1
3	Bronchofiber scope	1			
4	Bronchoscope, rigid			1	
5	Electrosurgical unit				1
6	Endoscope cabinet	1	1		1
OH	Ophthalmology				
1	Slit lamp				1
2	Ophthalmoscope				2
WA	Patient ward				
1	Patient bed with table				90
OT	Others				
1	Medical gas system A		1	1	1
2	Medical gas system B	1			
3	Scrub station with RO system	1	1	1	1
4	Air conditioning unit, window type			5	45
5	Air conditioning unit, separation type			5	2

Project Profile (Project Summary)

Sector	Health
Project Name	Strengthen Medical Equipment for Main Hospitals in Baghdad City
Background (current state, necessity of immediate action & the needs)	<p>Baghdad is capital of Iraq and population is 6.49 million and there are more than 20 hospitals. Baghdad city is divided 2 regions by Tigris river.</p> <p>Target hospitals of this project are Medical city, which is top referral hospital in east region, Al Kindy Hospital, and Thawara General Hospital in east region. In west region, they are Yarumuk Teaching Hospital that is top referral hospital in west region, and Al Kalma Hospital.</p> <p>Referral system of Iraq is not functioning now. All patients come to hospital directly to get medial services. It is essential to strengthen primary health care and function referral system as soon as possible. Economic sanction of longer than 10 years big obstacle to maintain facility and equipment in good condition. This situation becomes obstacle to supply basic medical care to people. OFFP replaced or rehabilitate some of obsolescent equipment and / or facility. However, fundamental problem is not yet solved. Accordingly this project focuses to strengthen secondary care of these hospitals.</p> <p>Medical city consists of 5 hospitals and faculty of medicine of Baghdad university. In this project 3 of these 5 hospitals, namely Al Zirhert Hospital, Al Mansul Pediatric Hospital, and Baghdad General Hospital (medical) are selected. Function of secondary medical care of these hospitals is strengthening by this project. Department shall be emergency, internal, surgical, pediatric, X-ray, laboratory, operation, and ICU. Al Kindy Hospital, Thawara General Hospital, Yarumuk Teaching Hospital, and Al Kalma Hospital are strengthening department for emergency, internal, surgical, obstetric, pediatric, X-ray, laboratory, operation and ICU.</p>
Counterpart and Executing Agencies	Ministry of Health, Ministry of Industry
Description of the Assistance	Equipment for emergency, medical, surgical, pediatric, obstetric & gynecology, X-ray, laboratory, operation room, and ICU are considered.
Project Site	<p>Baghdad City</p> <p>Medical City (Al Zihert Hospital, Al Mansul Pediatric Hospital, and Baghdad Teaching Hospital), Al Kindy Hospital, Thawara Hospital, Yarumuk Teaching Hospital, Al Kalama Hospital</p>
Effectiveness/Benefit (beneficiary)	<ol style="list-style-type: none"> Population of beneficiary <ul style="list-style-type: none"> • Baghdad (6.49 million) Indicator of project effect <ul style="list-style-type: none"> • Increase number of test (Laboratory, Functional, X-ray) • Increase number of operation • Increase number of patient • Increase the number of delivery in health facility
Presumed Project Period	<p>Production period : 4 months after contract</p> <p>Transportation : 2 months</p> <p>Installation : 1.5 months</p> <p>Training for operation : 0.5 months</p>
Presumed Contract Manner (competitive bid, nominated contract)	Competitive bidding
Name of Nominated Contractor	

•Reason for Adopting Nominated Contractor	
Expected Transit Method	Container transport is expected. The common routes from Japan to the project sites are Jordan route, Kuwait route, and Umm Qasr route via Dubai. The cargo insurance should cover war risks. Moreover, the cargoes should be escorted by armed security escorts to mitigate risks inside Iraq.
Necessity of the Installation of Machinery	Necessary.
•Profile of Engineer responsible for the installation (nationality & capability)	Installation and adjustment by Iraqi engineers. There are some engineering companies for installation and maintenance of medical equipment. They have enough experience to carry out this kind of work. Training under responsibility of main contractor is necessary because they are not familiarized with Japanese medical equipment.
Operation and Maintenance (O&M) Structure	5 - 8 engineers and around 10 technicians are working on each project site (hospital). They make maintenance for facilities and equipment. It will be necessary to subcontract with company of private sector for complicated technical matter.
•Necessity of O&M Training	Necessary.
•Contents of Training	Training of periodical checking, repair work, and management of maintenance is necessary for medical equipment.
•Other remarks regarding O&M	
Involvement of Other Donors	Nothing.
Other Considerations (environment, gender, etc)	Nothing.

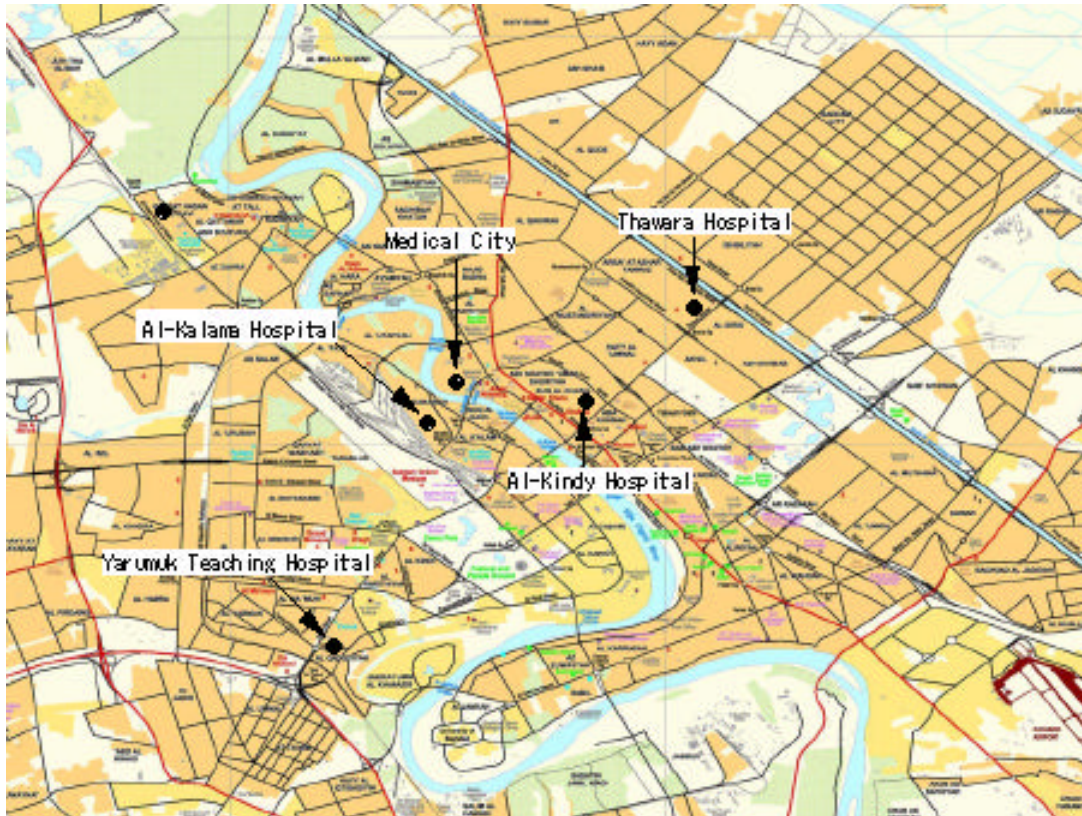
Location of Project Site



Map No. 3035 Rev. 3 UNITED NATIONS
December 2002

Department of Public Information
Cartographic Section

Location of Project Site (Baghdad City)



Rough Estimate of project Cost

(Unit: Thaousand Yen)

Classification			Cost
Equipment Cost (including Transport and Installation)			1,480,450
	1.Procurement cost		1,329,628
	Al Zirahert Hospital	Medical equipment	187,801
		Medical Facilities	26,403
		Sub-total	214,204
	Al-Mansur Hospital	Medical equipment	134,825
		Medical Facilities	17,734
		Sub-total	152,559
	Baghdad Teaching Hospital	Medical equipment	223,780
		Medical Facilities	26,109
		Sub-total	249,889
	Al-Kindy Hospital	Medical equipment	112,685
		Medical Facilities	18,197
		Sub-total	130,882
	Thawara General Hospital	Medical equipment	153,665
		Medical Facilities	17,735
		Sub-total	171,400
	Yarmuk Hospital	Medical equipment	103,355
		Medical Facilities	26,402
		Sub-total	129,757
	Al-Kalama Hospital	Medical equipment	254,716
		Medical Facilities	26,221
		Sub-total	280,937
	2.Transport fee		83,029
	3.Installation cost		67,793
Design and Supervision			125,560
Total of Project Cost			1,606,010

Equipment List

No.	Equipment	Al Zirahert Hospital	Al -Mansur Hospital	Baghdad Teaching Hospital	Al -Kindy Hospital	Thawara General Hospital	Yarmuk Hospital	Al -Kalama Hospital
EM	Emergency Dept.							
1	ECGs			1				
2	Defibrillator			1				
3	Ultrasonic nebulizer			1				
4	Suction unit, mobile							1
OP	Operation Dept.							
1	Operation table	8	2	10				4
2	Operation table, orthopedic	1					1	
3	Operation light		1					4
4	Anesthesia							4
5	Electrosurgical unit	6	1	5	2	2	3	4
6	Defibrillator	2	1				2	1
7	Bed side monitor			5	2	2		4
8	Suction unit, surgical			10				
9	Instruments set, abdomen							4
10	Stretcher			5				4
11	Plaster cutter							1
12	Instruments cabinet							3
13	Water bath for blood warming						1	
14	Laryngoscope set						4	
15	Operation light, mobile							3
16	Instruments table				5			3
17	Medical refrigerator							1
ST	Sterilization Dept.							
1	High pressure steam sterilizer, with boiler	3	2	2	2	2		2
2	Drying oven				1		4	1
3	Steam sterilizer, table top						2	
4	Cast 40 cm dia.	5	5	5	5	5	5	5
OB	Obstetric and Gynecology Dept.							
1	Cardio tocograph			2		2	5	
2	Doppler detector			2		2	5	
3	Examination light			1		1	2	
4	Delivery table						5	
5	Instruments set, delivery			3		3	3	
6	Infant care unit			1		1		
7	Resuscitation set, neonate			2		2	2	
8	Instruments set, cesarean section			2		2	2	
9	Weighing scale, neonate			1		1	1	
PE	New born, pediatric							
1	Infant incubator		3	2		2		2

2	Resuscitation set, pediatric		1	1		1		
3	Ultrasonic nebulizer				4	1		3
4	Baby cot							4
IU	ICU							
1	ICU bed	30	4					
2	Monitoring system, 8 beds				1			
3	Bed side monitor	5	6	3	3	3		1
4	Defibrillator				1		1	1
5	Infusion pump			2		2	4	4
6	Suction unit, mobile	5		4				
7	Ventilator, adult	3						4
8	Ventilator, neonate		2					
PH	Functional Test							
1	ECG	2	1	2		2	3	2
2	Spirometer	1		1		1	1	
3	Ultrasound diagnostic unit, B/W	1	1		1	1		2
4	Ultrasound diagnostic unit, color	1	1					
PA	Pharmacy							
1	Medical refrigerator							2
2	Electrical balance			1		1	2	2
Laboratory								
CL	(Biochemistry)							
1	Biochemical analyzer	1	1	1	1	1	1	1
2	Spectrophotometer	1	1	1		1	3	1
3	Blood gas analyzer	1			1			1
4	Flame photometer						1	1
5	Water bath						2	1
6	Centrifuge				2		4	1
7	Micropipette set, adjustable							2
8	Shaker						1	1
HE	(Hematology)							
1	Blood cell counter, 12 segment	1		1	1	1		1
2	Bilirakis meter						1	1
3	Hematocrit centrifuge						1	1
4	Microscope						5	4
GE	(General examination)							
1	Medical refrigerator				2			
2	Blood refrigerator							1
3	Water distillation unit, burn-sted type, with deionizer							2
4	Refractometer				2			
5	Steam sterilizer, vertical	1	1				1	
6	Incubator						4	
RA	X-ray							
1	X-ray unit	1	1	1	1	1		1
2	Fluoroscopy	1	1				1	1
3	Mobile X-ray	1	1	1	1		1	1
4	Surgical X-ray , C-arm	1	1		1		1	1
5	X-ray film developer, table top	1	1	1	1	1		1
6	Apron	3	3	3	3	3	3	3

7	Film viewer							9
ED	Endoscope dept.							
1	Gastrofiber scope			1		1	1	
OH	Ophthalmology							
1	Slit lamp				1			
2	Ophthalmoscope				3			
WA	Patient ward							
1	Stretcher							8
2	Wheel chair							8
3	Suction unit, mobile							4
4	Ultrasonic nebulizer							4
5	Thermometer			40				15
6	Instruments cabinet							8
7	Sphygmomanometer						30	10
8	Weighing scale, adult						2	5
9	Walker							10
10	Examination light							2
11	Patient bed with table			400	16	250	10	225
12	Ophthalmoscope				2			
13	Oxygen inhalation set, cylinder				30		30	30
OT	Others							
1	Medical gas system A		1		1	1		1
1	Medical gas system B	1		1			1	
2	Scrub station with RO unit	1	1	1	1	1	1	2
3	Air conditioning unit, separation type				6			

Project Profile (Project Summary)

Sector	Health
Project Name	Strengthen Oxygen Gas Supply
Background (current state, necessity of immediate action & the needs)	<p>In Iraq, medical oxygen gas is produced by State Company of Samarra Drug Industry and some small private companies. This state company is major supplier of medical oxygen in Iraq. All products are sold to KIMADIA, procurement organization of MOH, and be distributed to hospitals. In Mosul city, there is a private medical oxygen gas factory and hospitals in northern area are procuring medical oxygen from this company.</p> <p>Gas plant of Samarra Drug Industry is in Baghdad and it was installed by Japanese company in 1980. Based on WHO survey, this plant producing medical grade oxygen only 25% of gross demand of Iraq. It was designed to produce 200 Nm³/hour. However due to decrepitude this plant can be produce only 150 Nm³/hour now. Quality of oxygen has no problem. Transportation method has problem due to lack of vehicle and instruments. Some hospital use industry grade oxygen and / or procure with high cost from black mark.</p> <p>Oxygen is essential substance of medical care. It is procured and used same as medicine. Lack of oxygen supply becomes obstacle for supply of appropriate medical care. It is urgent issue to normalize oxygen supply.</p>
Counterpart and Executing Agencies	Ministry of Health, Ministry of Industry
Description of the Assistance	Oxygen Plant 1 unit, Liquid oxygen storage tank 1 unit, Oxygen cylinder filling system 1 unit, Tank truck of liquid oxygen 4 units, Oxygen cylinder 1,000 bottles.
Project Site	Install medical gas plant in Baghdad.
Effectiveness/Benefit (beneficiary)	<p>(1) Population of beneficiary</p> <p>Direct : Baghdad (6.49 million population) and Basra Governorate (1.98 million population) Total 10.99 million population.</p> <p>Indirect : All other people in Iraq</p> <p>(2) Indicator of project effect</p> <ul style="list-style-type: none"> • Establish supply and network of medical oxygen. • Price of medical oxygen gas become reasonable.
Presumed Project Period	<p>Production period : 12 months after contract</p> <p>Transportation : 2 months</p> <p>Installation : 4 months</p> <p>Training for operation : 1 month</p>
Presumed Contract Manner (competitive bid, nominated contract)	Competitive bidding
Name of Nominated Contractor	
•Reason for Adopting Nominated Contractor	
Expected Transit Method	Container and bulk transport is expected. The common routes from Japan to the project sites are Jordan route, Kuwait route, and Umm Qasr route via Dubai. The cargo insurance should cover war risks. Moreover, the cargoes should be escorted by armed security escorts to mitigate risks inside Iraq.
Necessity of the Installation of Machinery	Necessary.

Profile of Engineer responsible for the installation (nationality & capability)	Installation and adjustment by Iraqi engineers. There are some engineering companies for installation and maintenance of this kind of plant.
Operation and Maintenance (O&M) Structure	
Necessity of O&M Training	Necessary.
Contents of Training	Training of operator by manufacturer (around 3 months in factory) is necessary. Subjects of training are various category as example, vacuum pump, instruments, handling of high pressure gas, etc.
Other remarks regarding O&M	
Involvement of Other Donors	Nothing.
Other Considerations (environment, gender, etc)	Nothing.
Corporate Name related to the Proposed Project	Nissho Iwai Corp.

Location of Project Site



Map No. 3825 Rev. 2 UNITED NATIONS
December 2002

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Rough Estimate of Project Cost

(Unit: Thousand Yen)

Classification		Cost
Equipment Cost (including Transport and Installation)		1,484,470
	1.Procurement cost: Liquid oxygen production system Tankrorry (large x 2, small x 2) Cylinder for oxygen (1,000 bottles)	1,090,755
	2.Transport fee	115,234
	3.Installation cost	278,481
	Design and Supervision	87,820
Total of Project Cost		1,572,290