JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MINISTRY OF HEALTH

THE ARAB REPUBLIC OF EGYPT

BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR IMPROVEMENT OF MEDICAL SERVICES
IN
THE HOSPITALS IN LUXOR CITY AND THE QENA GOVERNORATE
IN
THE ARAB REPUBLIC OF EGYPT

MARCH 1994

BINKO LTD.

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MINISTRY OF HEALTH
THE ARAB REPUBLIC OF EGYPT

BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR IMPROVEMENT OF MEDICAL SERVICES
IN
THE HOSPITALS IN LUXOR CITY AND THE QENA GOVERNORATE
IN
THE ARAB REPUBLIC OF EGYPT

MARCH 1994

BINKO LTD.

PREFACE

In response to a request from the Government of the Arab Republic of Egypt, the Government of Japan decided to conduct a basic design study on the Project for Improvement of Medical Services in the Hospitals in Luxor City and the Qena Governorate in the Arab Republic of Egypt and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Egypt a study team headed by Mr. Akira Kumakura, Senior Assistant for Grant Aid, Grand Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs with a technical adviser Dr. Minoru Tanabe, Bureau of International Cooperation, International Medical Center of Japan, Ministry of Health and Welfare and constituted by members of Binko Ltd., from 17 to 31 December, 1993.

The team held discussions with the officials concerned of the Government of Egypt, and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to Egypt in order to discuss a draft report, and as this result, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Arab Republic of Egypt for their close cooperation extended to the teams.

March, 1994

Kensuke Yanagiya
President
Japan International Cooperation Agency

March, 1994

Mr. Kensuke Yanagiya,
President
Japan International Cooperation Agency
Tokyo, Japan

Letter of Transmittal

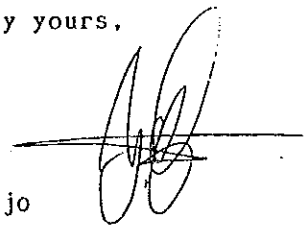
We are pleased to submit to you the basic design study report on the Project for Improvement of Medical Services in the Hospitals in Luxor City and the Qena Governorate in the Arab Republic of Egypt.

This study was conducted by Binko Ltd., under a contract to JICA, during the period 29 November, 1993 to 25 March, 1994. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Egypt, and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

We wish to take this opportunity to express our sincere gratitude to the officials concerned of JICA, the Ministry of Foreign Affairs, and the Ministry of Health and Welfare. We would also like to express our gratitude to the officials concerned of the Ministry of Health of Egypt, the JICA Egypt office and Embassy of Japan in Egypt for their cooperation and assistance throughout our field survey.

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

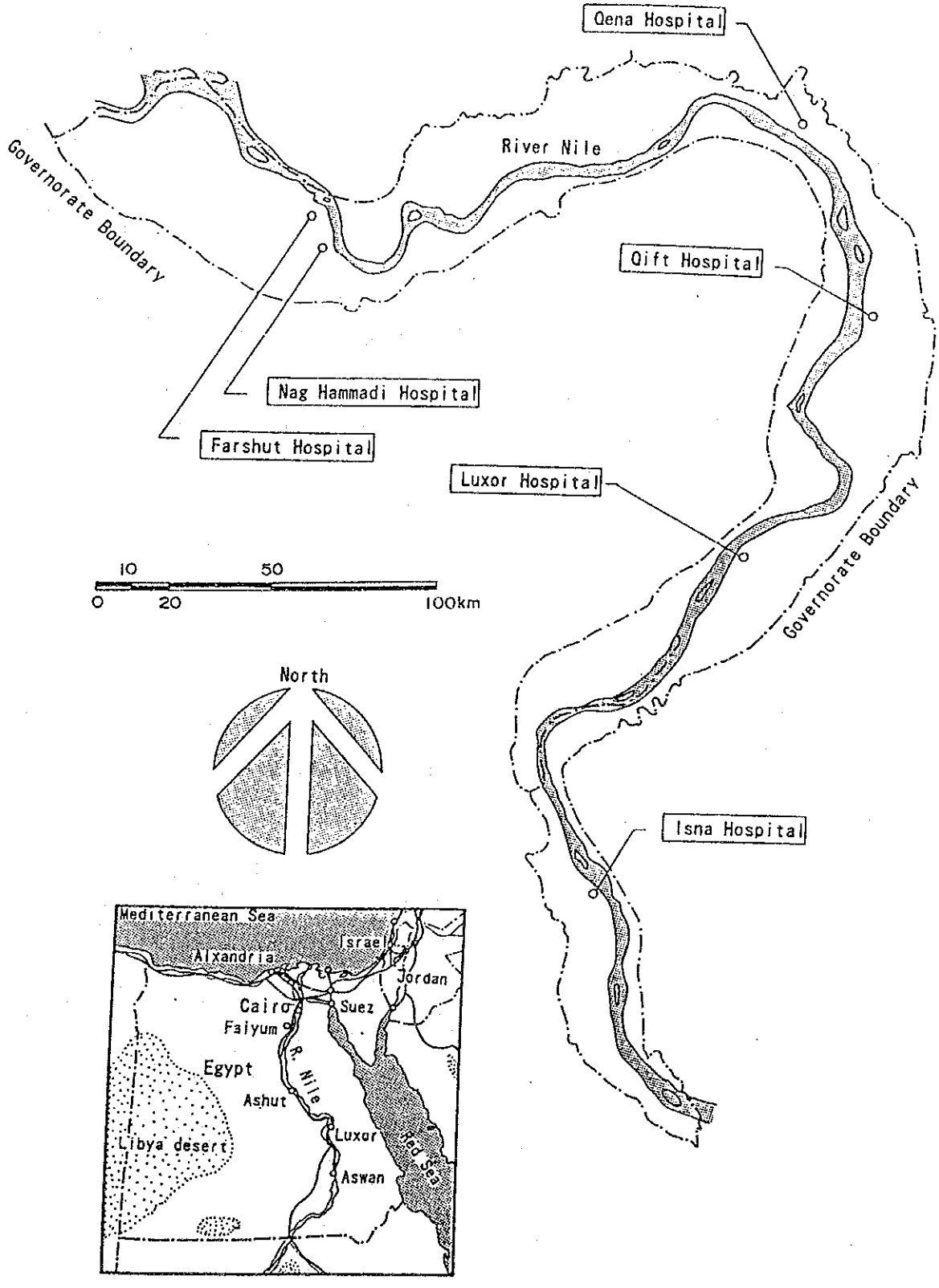
Very truly yours,



Yukio Chujo
Project manager,
Basic design study team on
The Project for Improvement of Medical Services in the Hospitals in Luxor City and the Qena Governorate in the Arab Republic of Egypt

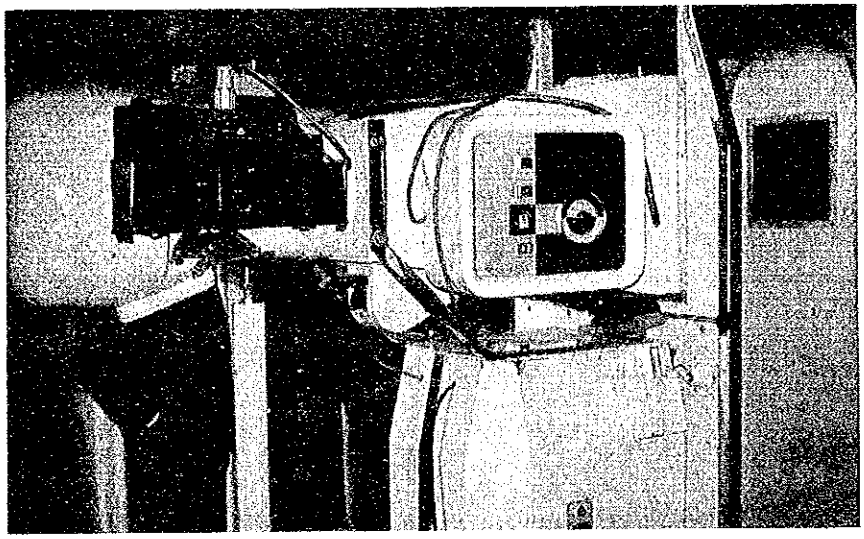
Binko Ltd.

LOCATION MAP OF PROPOSED HOSPITALS FOR THE PROJECT



Luxor Hospital

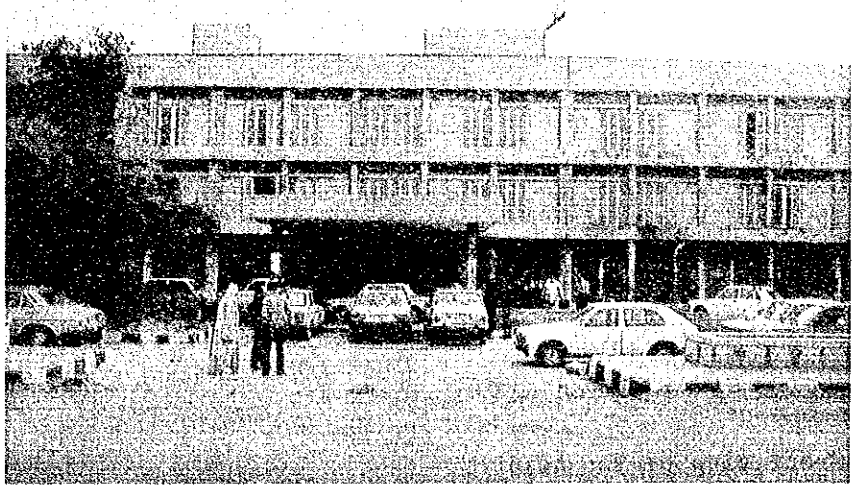
Front view of the hospital



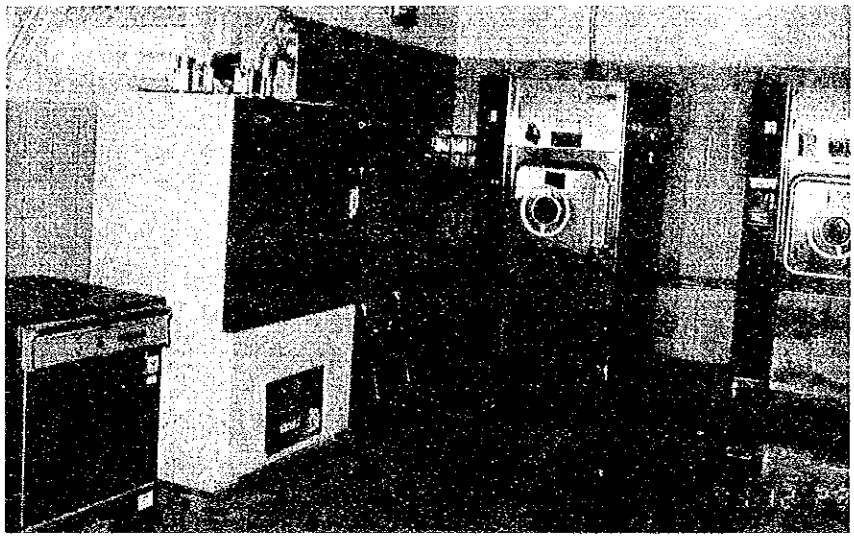
X-ray mirror camera system,
Chest Hospital

Steam autoclave

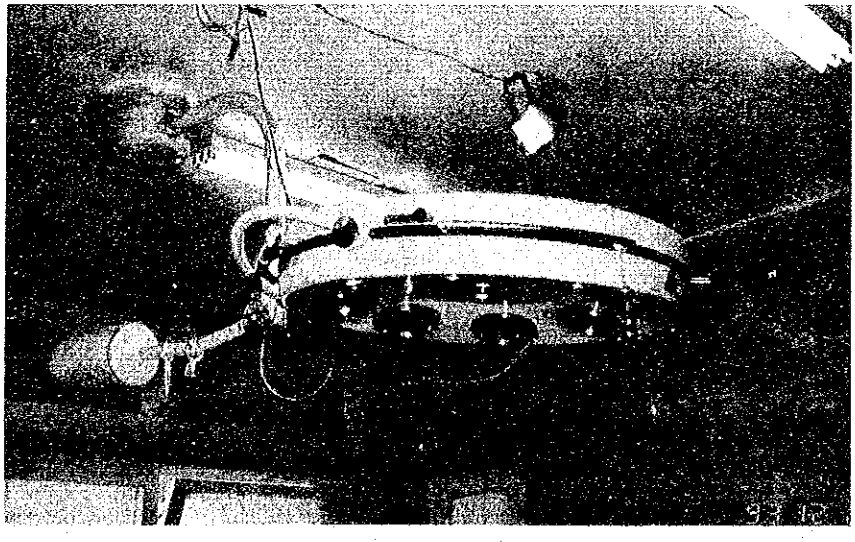
Qena Hospital



Front view of the hospital



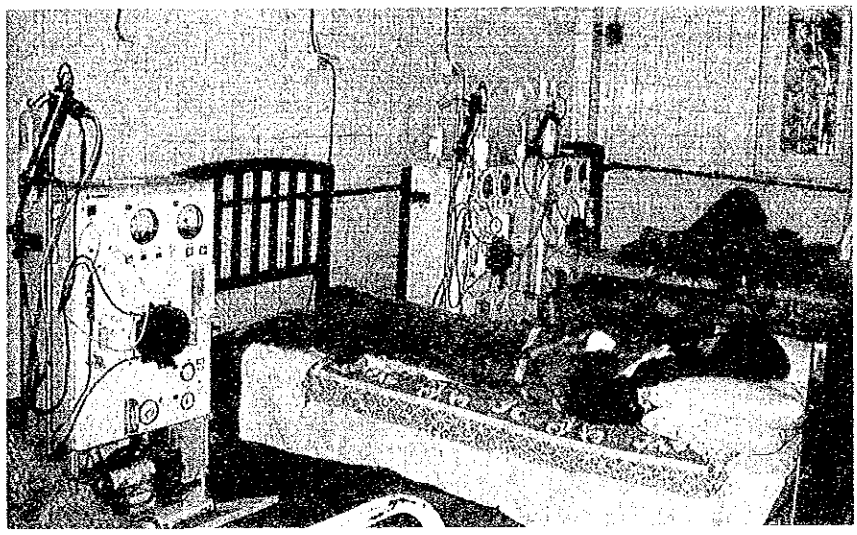
Sterilization room



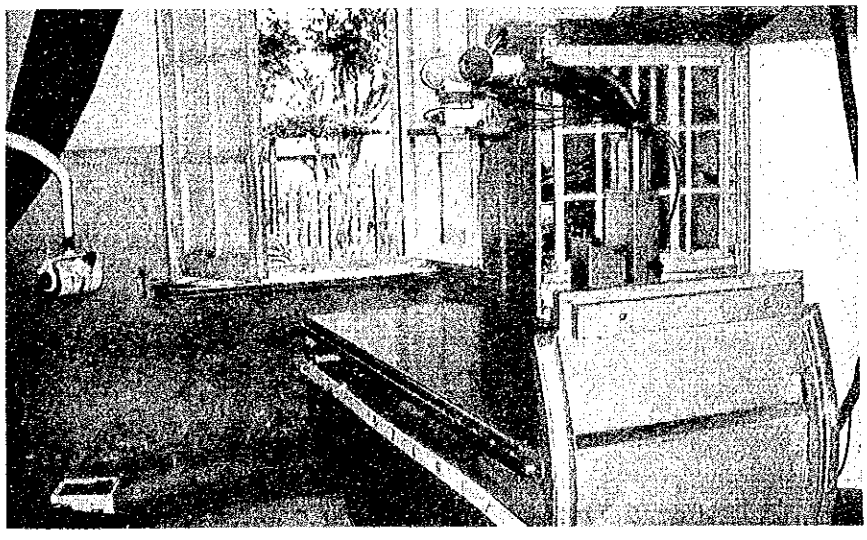
Operating ceiling lamp

Nag Hammadi Hospital

Front view of the hospital

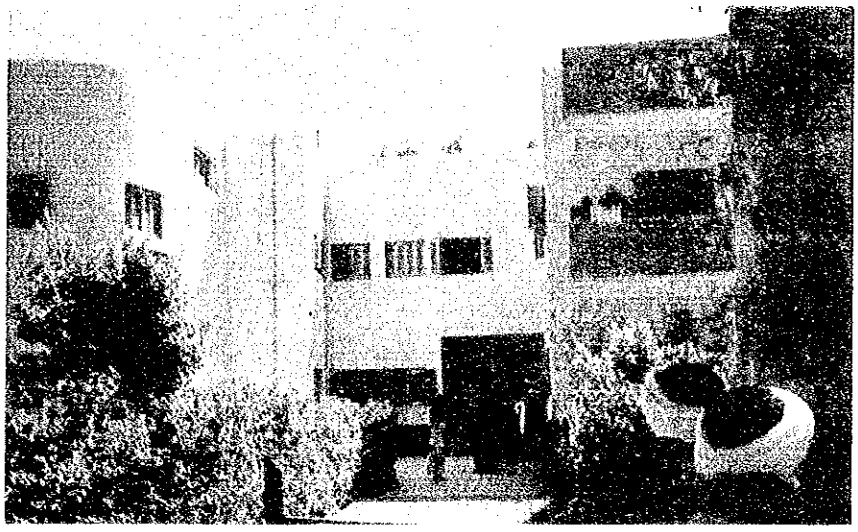


Hemodialysis room

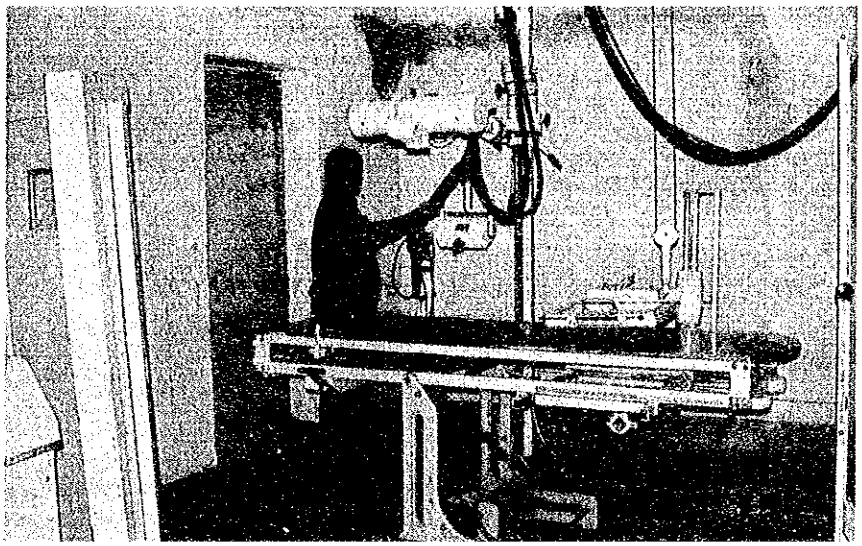


Diagnostic X-ray system

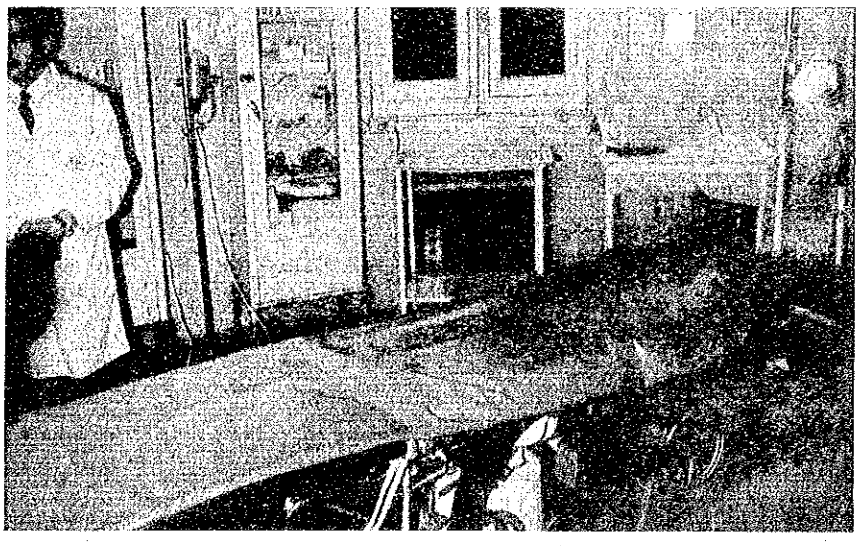
Farshut Hospital



Side entrance

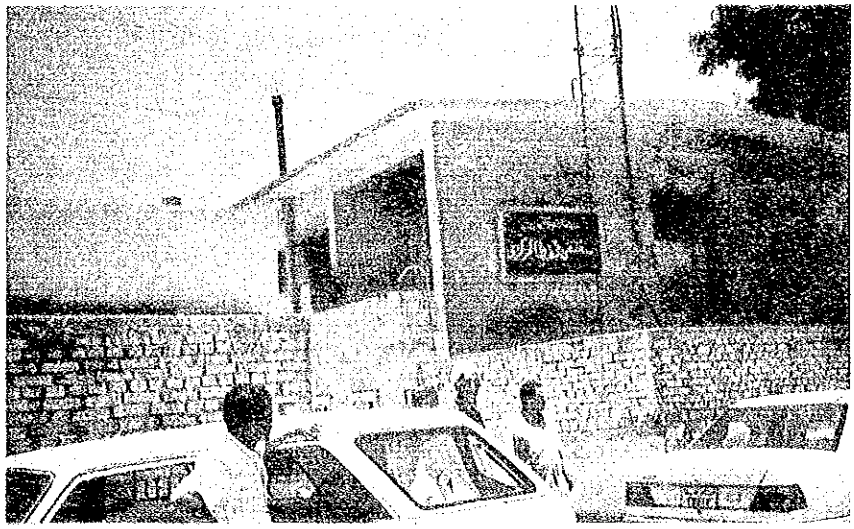


Diagnostic X-ray system

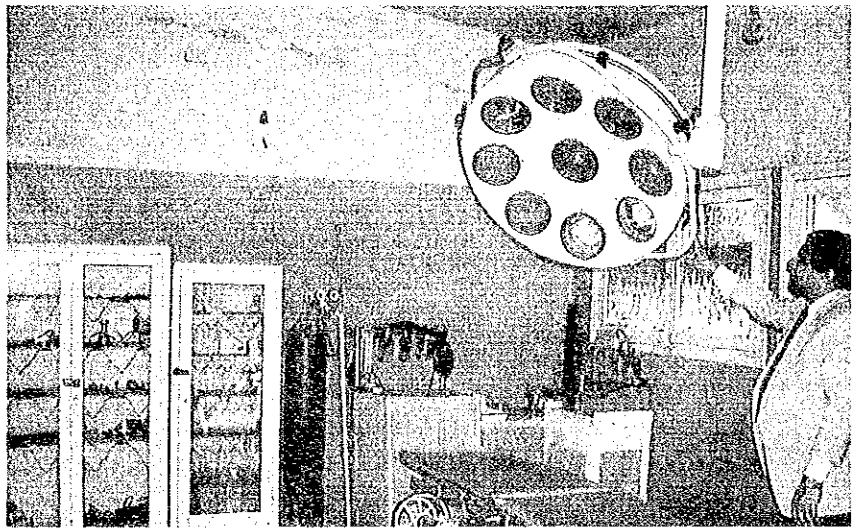


Operating table

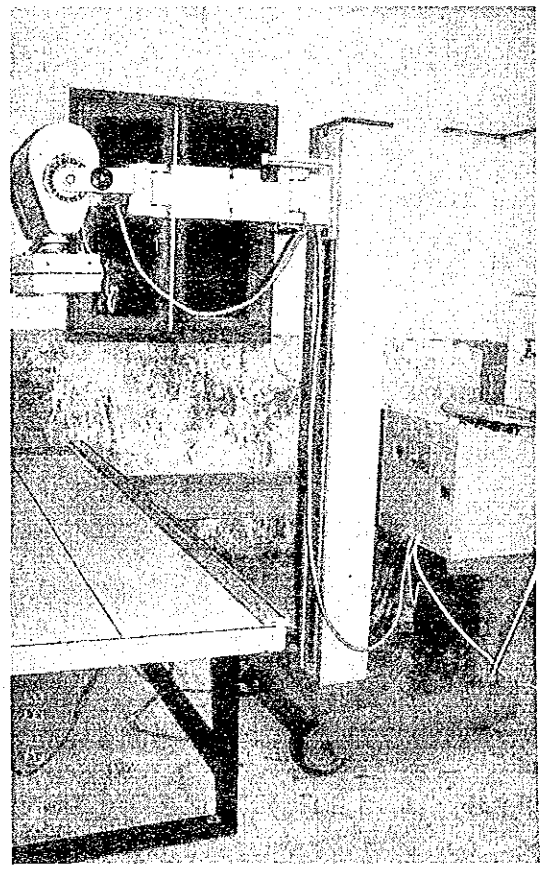
Qift Hospital



Main gate

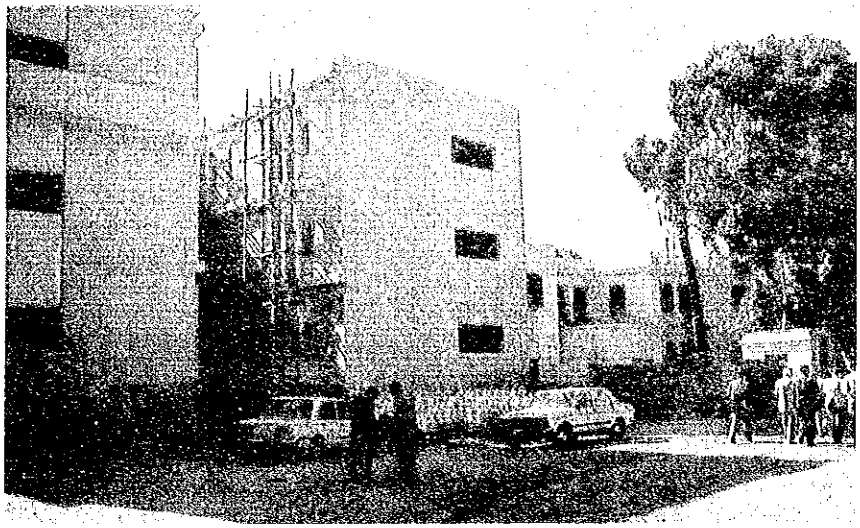


Operating ceiling lamp



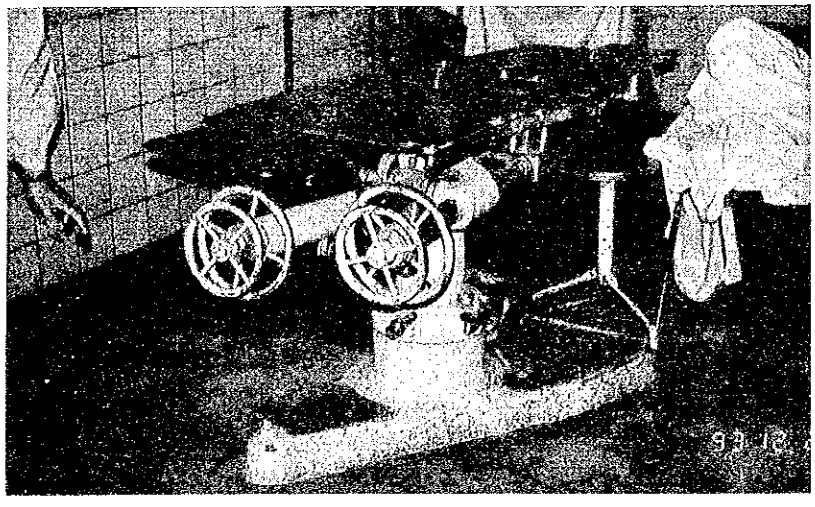
Mobile X-ray system

Isna Hospital



Main gate and new ward

Diagnostic X-ray system



Operating table

SUMMARY

In the country of Egypt, the average life expectancy of a new born child substantially increased from 46.1 years in 1960 to 60.3 in 1990. However, the population growth rate marked a high of 2.2% in 1991. Like most other developing nations, Egypt is plagued with gastrointestinal and respiratory diseases as well as diseases associated with pregnancy.

Due to health and medical budget cutbacks by the Egyptian government, public medical facilities are lacking adequate medical equipment. Insufficient and obsolete equipment has caused the qualities of medical care to quickly deteriorate. Private medical facilities are playing an increasingly important role by compensating for the inadequate public facilities, however, increasing medical cost has created a new financial burden for most residents. In an effort to improve this situation, the Egyptian government has established the following goals in its Third Health and Medical 5-Year Plan (1992 to 1996): construction of health and medical facilities in local regions, expansion of free medical services for low-income residents, chargeable treatment for high-income residents based on their amount of income, establishment of more institutions to train medical staff, expansion of domestic medical goods production and further strengthening of the medical insurance system. To achieve these goals, the Egyptian Ministry of Health has drafted a long-term plan to improve public medical facilities throughout the country. It intends to carry out the plan step by step by using the development budget funds allocated from Third Health and Medical 5-Year Plan.

Based on this plan, local governments are using their own budgets to improve medical facilities. However, the budget have been mostly allocated for renovation of facilities and little for procurement of medical equipment of which a large portion needs to be imported. Although budgetary expenditures have been made, medical facilities in the public hospitals are yet to be equipped properly. Given the circumstances, the Egyptian government has developed a plan to provide necessary equipment for Luxor Hospital, one of the major medical facilities in Egypt, as well as for five

major hospitals in Qena Governorate (Qena, Nag Hammadi, Farshut, Qift and Isna Hospital), and requested Japan's Grant Aid.

Responding to this request, the government of Japan decided to conduct a preliminary study and JICA dispatched the Preliminary Study Team in July 1993 to investigate the background and the current situation and despatched the Basic Design Study Team in December 1993 to collect information necessary for this project. Upon returning, the team started drafting the Basic Design based on the analysis of the data collected and the discussions held with various parties in Egypt. After going back to Egypt to explain the Draft Report in January 1994, they proceeded to prepare the Basic Design Study Report.

The study found that all six hospitals were located in major cities in or near the Qena Governorate and that each served as a district general hospital providing direct medical services to local residents and patients referred by less equipped medical facilities in the neighboring towns and villages. It also found that these hospitals mainly provided primary and secondary care for common diseases. Some tertiary care is practiced by certain medical specialists at Luxor and Qena Hospital, as well as patient referrals to Asyut University School of Medicine Hospital when advanced medical treatment is required. Most patients have experienced respiratory or gastrointensinal diseases or troubles caused by childbirth, which are typical in developing nations. Also, there were many cases of injuries; schistosomiasis (bilharzia), an endemic disease of this region; urological and cardiac diseases and diabetes and its complications.

Because these hospitals are inadequately equipped with modern medical equipment, they struggle daily to provide minimum care for common diseases. The study team also concluded that replacing obsolete instruments and supplying additional equipment were necessary but highly advanced devices were in low demand.

After the team thoroughly examined the content and feasibility of this project, the maintenance system for the supplied equipment, and the effective results that may be brought by the project, they instituted the following basic principles:

- Work out a plan that insures optimum project effect benefiting the residents of Luxor city, the Qena Governorate and their environs by supplying medical equipment required to the hospitals concerned.
- Give top priority to medical equipment for treating common diseases.
- Mainly provide equipment for primary and secondary care.
- Give priority to equipment that is in urgent need.
- Work out a plan that is manageable for the concerned hospitals within their current capacities so that the equipment will be properly maintained.
- Work out a plan that enables smooth and effective grant aid by the Japanese government.
- Work out an equipment plan that allows local agencies of the equipment makers to maintain and repair the equipment.

Based on these guidelines, the study team started preparing the Basic Design including the selection of equipment. The proposed hospitals of this project are Luxor Hospital, Qena Hospital, Nag Hammadi Hospital, Farshut Hospital, Qift Hospital and Isna Hospital and the team selected a total of 166 equipment, some of which are listed below:

Anaesthesia Dept.	Anaesthesia machine, Ventilator, Defibrillator, etc.
C.C.U.	Patient monitor, Ventilator, Mobile x-ray, etc.
Chest	X-ray mirror camera system, Steam autoclave, etc.
Dental surgery	Dental unit with chair, etc.
Endoscopy unit	Colonofiberscope, etc.
E.N.T.	Operating microscope for E.N.T., E.N.T. examination/treatment unit, Broncoscope (rigid type), etc.
I.C.U.	I.C.U. bed, Ventilator, Patient monitor
Medical lab.	Steam autoclave, Blood gas analyzer, Flame photometer,

	Elisa photometer, etc.
Obstetrics	Ultrasound machine, Delivery table, etc.
Operating theatre	Operating table for general surgery, Electro-surgery unit, Laparoscope, etc.
Ophtalmology	Electro-surgical unit, Ophtalmic examination unit, Operating microscope for ophtalmology
Orthopedics	Surgical x-ray unit, Orthopedic operating unit, etc.
Physiotherapy	Computerlized traction unit, Treadmill for rehabilitation
Radiodiagnosis	Diagnosis ultrasound machine, Diagnostic X-ray T.V. System, etc.
Theatre sterilization room	Scrub-up unit, Instrument Washer, Steam autoclave
Urology	Cysto-urethroscope, etc.
Fever hospital	X-ray machine, Steam autoclave, etc.

The executing organization of this project is the Egyptian Ministry of Health and the equipment procured will be either installed in or received by the proposed hospitals. These hospitals have been in service for some time, except for Isna Hospital which is currently under reconstruction and will be completed by April, 1994, and their existing buildings and facilities can still be utilized. Also, these hospitals are staffed with sufficient personnel and therefore there is no particular problem to properly receive and maintain equipment provided. After installing the equipment under the project, the expenses for maintenance and repair of the equipment installed at each hospital will be, like those for the existing equipment, covered by the medical fees charged at the hospital and the budgets of the Health Bureaus of Qena Governorate and Luxor City. The actual maintenance services will be provided by the local agencies of the equipment makers, with which hospitals respectively sign maintenance service contracts based on the allocated budgets. The period of implementation of the project is to be 11.5 months after the signing of the Exchange of Notes.

The following results are expected by the implementation of the project and the viability of this project through the assistance by the Japan's Grant Aid is found to be reasonably high:

(1) By supplying medical equipment to the proposed hospitals struggling to provide adequate services with the insufficient or obsolete equipment, the hospitals will be able to regain their medical capabilities and provide adequate care to the 2.5 million residents in Luxor City and the Qena Governorate.

(2) When these district general hospitals start to function properly, they will be able to adequately handle patients referred by the less equipped hospitals or clinics. Thus, the entire regional medical service quality and the reliabiiity of the public medical facilities for the local residents will be improved.

The following measures are recommend to the Egyptian side when implementing the project.

(1) Small items which the Study Team pointed out the necessity of them and the Egyptian side confirmed to be able to procure by themselves such as forceps and stethoscopes and sphygmomanometers, should be obtained by the Egyptian side as necessary.

(2) As the current staff at the Isna Hospital are found to be inexperienced in handling medical equipment, it is recommended either to employ more experienced doctors transferred from other hospitals or retrain the current staff.

CONTENTS

Appendix

Supplement

Chapter 1 Introduction

Chapter 1 Introduction

The government of Egypt has developed a long-term plan for improving public medical facilities. The plan was designed to be implemented under the Third Medical and Health 5-Year Plan and intends to improve public medical services and correct regional differentials. Based on this plan, the government is proceeding with the total renovation of Isna Hospital and partial renovation of Luxor, Qena and Nag Hammadi Hospital, which serve as district general hospitals for Luxor City and the Qena Governorate. However, due to budgetary difficulties, these hospitals are lacking equipment or equipped with obsolete instruments and struggling to provide basic medical care. To improve the situation, the Egyptian government drafted a procurement plan for medical equipment urgently needed and requested Japan for grant aid.

The Japanese government decided to conduct a preliminary study relevant to this request, and dispatched to Egypt a study team headed by Dr. Minoru Tanabe from the Bureau of International Cooperation, International Medical Center of Japan, Ministry of Health and Welfare, for 24 days from July 2 to July 22, 1993. During the visit, the team had a series of discussions with Egyptian officials concerned, conducted a survey at the hospitals involved and collected necessary information and materials. Upon returning to Japan, they examined the data collected and prepared the Preliminary Study Report.

Based on the report, the Japanese government proceeded further to conduct a basic design study and the Japan International Cooperation Agency sent to Egypt the Basic Design Study Team headed by Mr. Akira Kumakura, the Senior Assistant for Grant Aid, Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs, for 25 days from December 7 to December 31, 1993. Dr. Minoru Tanabe from the Bureau of International Cooperation, International Medical Center of Japan, Ministry of Health and Welfare served as Technical Adviser for the team.

The study team investigated the background and the content of the request, had discussions with parties concerned, conducted a field survey and examined the current status of the proposed project as well as explaining to the Egyptian side Japan's Grant Aid systems and procedures. Also, the two countries confirmed which project expenses were to be borne by each government in case that this project is implemented.

After returning to Japan, the team analyzed the results of the survey and examined the appropriateness and viability of the proposed project. The team drafted the plan that would ensure optimum project effect including the basic design for supplying medical equipment, cost estimation and the maintenance plan. The Draft Report Explanation Team was dispatched for 12 days from January 21 to February 1, 1994. The Explanation Team explained the plan and had discussions with the Egyptian parties concerned. This report describes the above mentioned surveys and the results.

The schedules, the survey team member lists and the minutes of discussions are provided in Appendix.

Chapter 2 Background of the Project

Chapter 2 Background of the Project

2.1 Overview of Medical and Health Sector

2.1.1 Health Conditions in General

The country of Egypt has a population of 53,000,000, the largest in North Africa. The average population growth rate is 2.2% as compared to 2.5% for all of North Africa. The birth rate is 32 per 1,000 (31 per 1,000 in developing areas), the death rate is 8 per 1,000 (9/1,000 in all of North Africa) and average life expectancy at birth is 62 years (63 in developing areas). These figures are average levels for North Africa (refer to Table 2.1.1(1)).

Table 2.1.1(1) World Population Indicators (Abstract) 1990

Country or area	Population (million)	Average growth rate (%)1990-95	Birth rate (per 1,000)	Motarity rate (per 1,000)	Average life expectance at birth	Infant mortality (per 1,000)
North Africa	140.6	2.5	34	9	61	69
Algeria	25.0	2.8	35	7	66	61
Egypt	53.1	2.2	32	8	62	34
Libya	4.5	3.6	43	8	63	68
Morocco	25.1	2.4	33	8	63	68
Sudan	25.2	2.9	43	14	52	99
Tunisia	8.2	2.1	27	6	68	44
South Asia	1,200.6	2.3	33	11	59	91

Source: 1991 UN Statistical Yearbook, MOH data for Egypt

Table 2.1.1 (2) displays the recent vital rate changes in Egypt. In the last 10 years, birth and death rates declined, and the infant mortality rate decreased significantly from 70.0 per 1,000 infants in 1981 to 33.8 per 1,000 in 1990.

Table 2.1.1(2) Vital Rates

Rate	1981	1990	1991	1992
Crude Birth Rate	37.0	32.2	30.9	29.2
Crude Death Rate	10.0	7.5	7.6	7.4
Rate of Natural increase	27.0	24.7	23.4	21.8
Infant mortality Rate	70.0	33.8		
Life Expectancy at birth				
Males	49.5	60.4	60.4	60.4
Females	51.9	63.0	63.0	63.0

Source: MOH Data

2.1.2 State of Illnesses

(1) Main diseases

Table 2.1.2 (1) shows diseases common in Egypt. Like other developing nations, most patients are plagued with digestive, respiratory and other diseases associated with pregnancy or childbirth. Also, there are many cases of injuries, poisoning, schitosomiasis (one of the endemic diseases) and urogenital diseases.

Table 2.1.2(1) Main Diseases

Males	%	Females	%	Children (below 5 years of age)	%
Accident, Violence & Poisoning	30.6	Pregnancy, Labor & Puerperium	37.2	Respiratory System	30.0
Digestive System	19.9	Digestive System	13.1	Digestive System	29.3
Respiratory System	13.8	Accident, Violence & Poisoning	12.8	Accident, Violence & Poisoning	22.3
Circulatory System	7.4	Respiratory System	9.9	Infective & Parasitic Diseases	3.8
Urogenital System	5.6	Urogenital System	7.7	Blood Diseases	3.1
Others	22.7	Others	19.3	Others	11.5

Source :MOH Data

2.1.3 Medical and Health Administration

(1) Medical and health administrative organizations

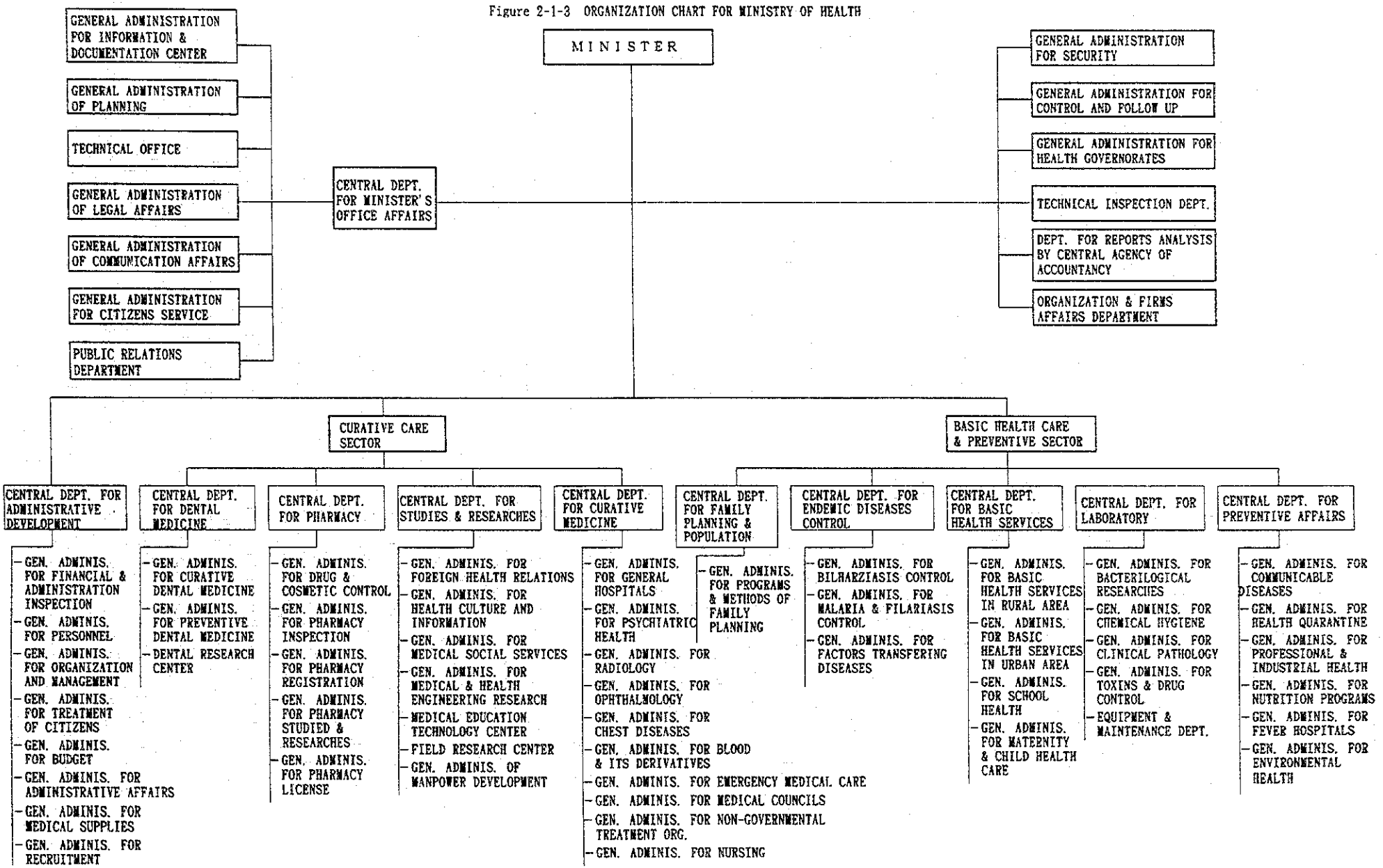
The Ministry of Health (MOH) governs the medical and health administration in Egypt. The Ministry of Health prepares development plans and a budget for the medical and health sector as well as supervision, evaluation and guidance for all medical and health matters. The plans developed by the Ministry of Health are implemented by the Governorates or Special Administrative City offices. The MOH organization is divided in three sectors: Basic Health Care & Prevention, Curative Care Sector and Administration. Basic Health and Prevention is responsible for basic health services, disease and drug control and prevention activities. Curative Care controls medical facilities, medicine, dentistry and medical research and development. The Ministry's financial and personnel matters are handled by Administration. Family planning programs currently implemented by Basic Health and Prevention will soon be handled by the Ministry of Family Planning, which was established late last year. The organization chart for the Ministry of Health is provided in Figure 2.1.3.

Each Governorate or Special Administrative City has a local health office similarly structured as the MOH, which provides medical and health services in respective Governorate and municipality and controls local medical facilities under supervision of the Ministry of Health.

2) Budget for health sector

In Egypt, the health budget is prepared by the Ministry of Health, and allocated to the MOH and local governments by the Ministry of Finance after approval. The budget is divided into four categories: Chapter I (Personnel cost), Chapter II (Operating cost), Chapter III (Investment) and Chapter IV (Loans). Each local government such as Luxor Special Administrative City or the Qena Governorate comprehensively manages the budget allocated for each category. The health budget for the government of Egypt is displayed in Table 2.1.3 (1). The 1993/94 health budget allocation is 1.8 % of the

Figure 2-1-3 ORGANIZATION CHART FOR MINISTRY OF HEALTH



total national budget.

Table 2.1.3(1) Budget for Total ARE for Health Sector

(thousand L.E.)

ITEM	1990/91	1991/92	1992/93	1993/94
Chapter 1	485,592	543,696	608,323	712,134
Chapter 2	150,626	06,863	256,205	300,512
Chapt r 3	236,672.6	239,4 3.1	300,705	251,615.7
Chapter 4	3,611	7,472	8,546	12,427

Source: M.O.H. data (1E£≒32 yen)

(3) Current status of medical facilities

In Egypt, primary and secondary care is provided at public general hospitals located in central cities or at less equipped smaller hospitals and clinics. Tertiary care is offered at certain specialized hospitals, which are under direct control of the MOH or hospitals attached to medical schools of universities.

As of 1989, Egypt has a total of 6,336 medical facilities (66,697 beds) including 348 general hospitals, 184 ophthalmic hospitals, 163 endemic hospitals, 213 respiratory hospitals and clinics, 48 psychiatry hospitals, 50 reprosy hospitals and 95 fever hospitals. The total number also includes 1,522 dental clinics, 665 X-ray diagnosis stations, 306 school dispensaries, 89 V.D. clinics and 2,662 facilities in rural areas. (See Table 2.1.3 (2))

In urban areas, there are many large private hospitals, which provide good medical services with sufficient equipment and are relatively clean compared to public facilities. However, the generally high medical cost at these hospitals ranging from 40 to 200 Egyptian pounds per day for inpatient, limits their patient care to only the affluent class. Foreigners and wealthy people tend to use European or American hospitals because the sense of hygiene and the reliability of doctors or equipment found in local hospitals are still low compared to those of advanced countries.

Table 2.1.3(2) Numbefr of Medical Facilities

Name of Hospital & Clinical Facility	No.	Endemic Diseases Preventive Facility	No.
General & Dist. Hospital	348	Bilharziasis Clinic	1,748
Ophthalmic Hospital	184	Malaria Clinic	497
EndemicHospital	163	Clinic for insect bite	16
Respiratory Hospital	213	Mother & Child Centre	
Mental & Psych. Hospital	48	Dispensary	579
Reprosy Hospital	50	M. C. H.	2,083
Fever Hospital	95		
Dental Hospital	1,522		
X-ray Station	656		
School Dispensary	306		
V. D. Clinic	89		
Health Centre	2,662		

Source: Medical Situation in Egypt

(4) Medical staff

The number of doctors in Egypt increased by 73.5% from 49,341 in 1978 to 85,619 in 1984. Population per doctor decreased by 31.4 % from 806 to 553. However, despite the 51.3 % increase of doctors registered in MOH that changed from 12,667 in 1980 to 19,187 in 1984, most of them chose to work in urban areas thereby widening the differential of medical service in the rural areas.

The working hours for doctors in public facilities are usually from 8:00 or 8:30 in the morning to 2:30 in the afternoon. During the afternoon hours, patients are attended to by newly graduated or general doctors, and senior doctors seldom come to hospitals especially at night. A similar situation applies to nurses and medical technicians.

Nurses are in significant shortage, the number of nurses in 1991 was 104,704, which is fewer than the number of doctors, 109,808. Nurses

graduated from the High Institute of Nursing (HIN) are especially scarce while the actual number of nurses are even smaller if marriages and pregnancies are accounted for.

(5) Procurement system of pharmaceutical supplies

Under the control of each Health Agency at each governorate or Special Administrative City, there is a Medicine Supply Center, which is funded by the budget of each governorate or city. They purchase and store medical and pharmaceutical supplies as well as deliver them to local medical facilities. They purchase these items directly from the Egyptian Pharmaceutical Trading Co., Ltd. or other local pharmaceutical agencies and store the necessary amount in their warehouses. They receive supply requests from hospitals in advance and deliver one to two weeks' supplies.

(6) Procurement system of medical equipment

Like the medical supplies procurement system, each local Health Bureau's Medical Equipment Department controls a Medical Equipment Supply Center, which supplies medical equipment to medical facilities in respective jurisdictions. The medical equipment purchased directly from medical equipment dealers is stored in the Centers' warehouses and supplied to local hospitals and clinics. Under this system, medical equipment is supposed to be purchased and supplied with the budget allocated to the each Health Bureau, however, due to a lack of funds, medical facilities are far from adequately equipped status.

(7) Maintenance system of medical equipment

Each Governorate Health Bureau manages a Medical Equipment Maintenance Center. However, these Centers are not functioning sufficiently and send most broken equipment to private medical equipment dealers for repair.

2.1.4 Training of Medical Staff

(1) General education

The Egyptian educational system consists of six years of education

in primary school, three years in junior high school, three years in high school and four to six years in college or university, which is almost identical to the Japanese educational system (refer to Fig. 2.1.4). However, the low adult literacy rate which was recorded at 59. 5 % for male and 30 % for female in 1985, indicates problems especially for women. Also, the attendance rates in 1982 were 78% for primary schools, 54% for junior high schools and 15% for high schools, which suggest that only a limited number of people receive higher education. In the meantime, the rapid population increase has caused a serious shortage of teachers, and the number of schools and classrooms are unable to keep pace with growing number of students.

(2) Education of medical staff

Doctor education is offered at universities with medical schools. There are a total of 12 universities with medical schools located in the cities listed below, of which Asyut is the only city situated in Upper Egypt.

1. Cairo 2. Azhar 3. Ainshams 4. Alexandria
5. Asyut 6. Mansoura 7. Tanta 8. Benha 9. Zagazing
10. Menoufia 11. Minya 12. Suez

3,853 students graduated from medical schools in 1989, a 24.5% decrease from 1985. Each year, more than 1,000 students graduate from Cairo and Alexandria University. Most of them desire to work in urban hospitals, which has created a doctor excess in urban areas and a shortage in local regions. Although national universities waive admission or tuition fees in principle, unless a student receives private school education or preparatory education tutoring affordable to only the wealthy, it is extremely difficult to enter these universities.

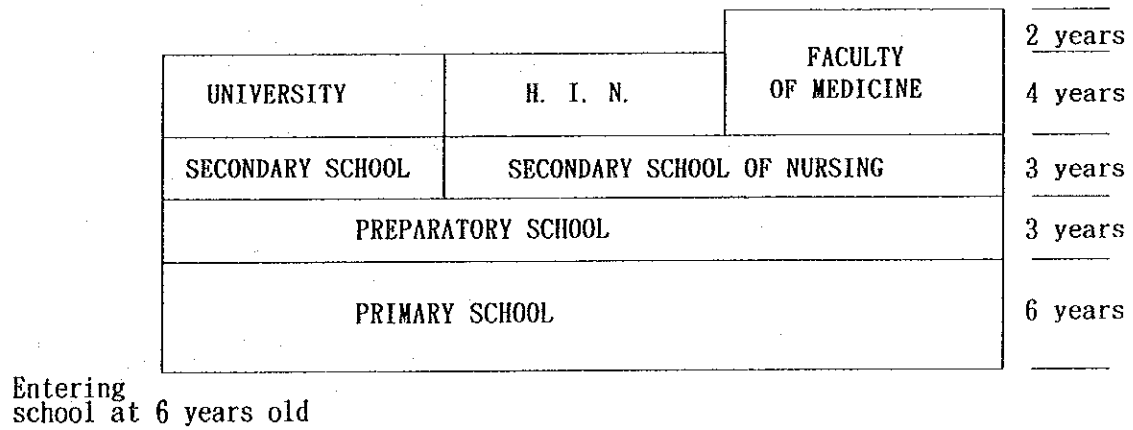
Nurse education in Egypt is offered at the High Institute of Nursing (HIN) and Secondary School of Nursing. Like colleges and universities, the HIN provides four years of education for high school graduates,

therefore, the HIN graduates are among the best educated in Egypt. Currently HIN is established in six universities located in Cairo, Ainshams, Zagazing, Tanta, Asyut and Alexandria. Total number of graduates each year is about 350, inadequate to overcome the nurse shortage. Moreover, because many leave public hospital services due to low wages, there are only constantly six to seven HIN-trained nurses at each major hospital and even fewer at local hospitals.

Although not as skilled as HIN nurses, nurses trained at the Secondary School of Nursing are also in scarcity especially at local facilities. These facilities try to compensate for the shortage by employing ordinary high school graduates and giving them about three-month training to become assistant nurses.

There are a total of 163 nursing schools including HINs.

Fig. 2.1.4 Education System in Egypt



2.1.5 Trend of Aid Organization

(1) International aid organizations

Egypt has steadily received assistance from international organizations for the past 20 years. Financial aid has provided a wide range of support for Egyptian government economic development efforts. Also, these projects have been designed to accomplish specific goals for improving the welfare of Egyptian people and building a stronger economy. Table 2.1.5 (1) lists the main aid programs offered to Egypt by advanced nations.

Table 2.1.5(1) Main Aid in Health Sector

(Unit: million US$)

Proposed area	Project	Period	Donor	Type	Amount
Damietta	Primary Health Care	1985-1990	Netherlands	Grant	6.5
Egypt	AIDS Testing	1988-1990	USAID	"	3.0
"	Child Survival	1985-1993	USAID	"	54.9
Bani Suef	Primary Health Care	1988-1992	Finland	"	16.5
Egypt	Cost Recovery	1988-1996	USAID	"	95.0
"	Diarrhea Control	1981-1991	USAID	"	36.0
"	T.B. Control	1989-1992	Netherlands	"	3.2
"	Schistomiasis Control	1982-1994	A.D.B.	"	24.0
"	Population & Family Planning	1983-1993	USAID	"	117.6
"	Suez Health Education	1980-1991	USAID	"	15.9
"	Schistomiasis Research	1991-1992	IDA	"	26.8
"	Schistomiasis Research		USAID	"	39.7

Source: MOH Data

(2) Cooperation from Japan in the Medical and Health Sector

Following tables show the recent cooperation from Japan in the medical and health sector.

1) Japan's ODA To Egypt

Name of Project	Implementation Agency	Disbursement Year	Grant Aid (Hundred Million Yen)
Project for Establishment of Pediatrics Hospital of Cairo Univ.	Cairo Univ.	80	20.0
-ditto-	-ditto-	81	20.0
Expansion Project of Cairo University Pediatric Hospital	-ditto-	87	11.44
-ditto-, Equipment	-ditto-	87	6.44
-ditto-	-ditto-	88	9.81
Project of Improvement of High Institute of Nursing, Cairo University	-ditto-	91	5.74
-ditto-	-ditto-	92	14.86
-ditto-	-ditto-	93	12.03

Source: Ministry of Foreign Affairs, Japan

2) Performance of Project-wise Technical Cooperation

Name of Project	Number of Personnel·Expenses			
Family Planning/ M.C.H.		Dispatch of Experts	Training of Personnel	Supply of Equip. (Thousand Yen)
(Original Period of R/D Assistance) 19/9/92～18/9/92	Up to '91 Fiscal Year Total	17	7	188.817
(Extension Period of R/D Assistance) 19/9/92～31/3/94	'92 Fiscal Year Total (Cont.)	9+4	3+1	24.374
Pediatrics Hospital of Cairo Univ. (phase II) (Original Period of)	Up to '91 Fiscal Year Total	43	18	95.671
R/D Assistance) 1/7/89～30/6/94 1/7/89～30/6/94	'92 Fiscal Year Total (Cont.)	21+6	6+0	55.737

Source: Ministry of Foreign Affairs, Japan

3) Grant of Equipment Supply Project

Name of Project (Thousand Yen)	Expense	Recipient	Type of Supply	Other .
Medical Equipment	9,249	Moasat Hospital, Alexandria	Small Scale, Independent	Acceptance of Trainee

Source: Ministry of Foreign Affairs, Japan

2.2 Outline of Related Projects

2.2.1 National Development Plan

Egypt has a population of about 53,080,000 and the GNP per capita in 1991 was 620 dollars. Under a policy of openness, the Egyptian government has begun liberalizing its economy, accepting economic assistance and importing technologies from advanced nations as well as providing general living assistance allowance for lower income people. However, the Egyptian economic environment is filled with difficulties such as expanded subsidy, worsening deficit spending, adverse balance of payments and the accumulation of external debt burden. Triggered by the serious damages caused by the Gulf War, the Egyptian government finally accepted the International Monetary Fund's advice, which was initially given three years ago in 1988, and is now aggressively implementing economic structure adjusting plans. As for the National Development Plan, the Third Five-Year Plan (1992 to 1996), which is part of the Long-Term Plan (1982 to 2002) is currently in progress. The National Development Plan has some basic policies to modernize and stabilize social conditions, equalize living standards, improve productivity, expand employment and establish a safer society for today's youth and future generations.

2.2.2 Five-Year Health Plan

Under the Five-Year Health Plan Series, the Egyptian government is trying to improve conditions in the health sector. The First Plan (1982 to 1986) and the Second Plan(1987 to 1991) have already been carried out and the Third Plan (1992 to 1996) is currently being implemented with the following goals:

(a) Expansion of local medical services especially for controlling tuberculosis and other infections diseases.

(b) Expansion of free medical services for low-income citizens.
(c) Establishment of additional Mother-and-Child Centers.
(d) Alleviation of high medical cost assessed by private medical facilities by extending more equitable medical services based on a sliding fee scale and by expanding public facilities with additional beds, etc..
(e) Establishment of more institutions for training medical staff.
(f) Expansion of domestic production of medical and pharmaceutical products.
(g) Expansion of the medical insurance system

Results based on these plans by the Egyptian government have improved the health situation dramatically as the average life expectancy increased from 46.1 years in 1960 to 60.3 in 1990 while the infant mortality rate decreased from 70/1,000 in 1981 to 33/1,000 in 1990. However, the population growth rate of 2.2% marked in 1991 remains high. Many people die from circulatory, gastrointestinal, infectious or parasitic diseases and accidents, most of which could have been prevented with better public hygiene, promotion of preventive medicine and improved medical services for common diseases. Also, the regional differential between urban and rural areas is very high, i.e. the physician/resident ratio is 1/1,095 for all of Egypt while 1/ 2,284 for the Qena Governorate, more than twice the national average. Moreover, public medical service quality has deteriorated due to obsolete equipment and other reasons, which has forced the residents to rely more on expensive private facilities. The newly created financial burden on the residents is becoming an issue.

2.2.3 Construction Plan for Medical and Health Facilities

The Planning Department of the Ministry of Health developed a long-term plan for improving medical facilities nationwide. The plan is now being implemented using the budget allocated from the Third Five-Year Health Plan. However, the effort has been primarily directed towards the construction or renovation of buildings and facilities and not so much towards procurement of medical equipment, which must be mostly imported.

2.3 Outline of the Proposed Facilities Under the Project

As the proposed project included five hospitals in the Qena Governorate and one hospital in Luxor City, which is designated as a Special Administrative City, the Study Team surveyed the medical situations in the Qena Governorate and the Luxor City.

2.3.1 Medical and Health Situation in the Qena Governorate

(1) General situation

The Qena Governorate is located in Upper Egypt approximately 600 kilometers from Cairo along the Nile River. The vast areas on both sides of the Nile River are utilized as agricultural land, situated about 500 kilometers longitudinally by a few to 50 kilometers latitudinally. Sugar cane, cotton and vegetable products are transported to major cities developed along the river such as Farshut, Nag Hammadi, Qena, Qift, Luxor and Isna City. Also, tourist businesses utilizing historical landmarks earn significant revenue for Luxor and some other cities.

Upper Egypt includes the middle part of the Nile basin and the upper reaches south of Bein and Magal. Lower Egypt is the area north of the upper reaches of the Nile. Major cities in the estuary (Lower Egypt) where the Nile meets the Mediterranean Sea, such as Cairo, Alexandria and Benha are well developed and the living standards are almost comparable to those of Western nations while the development of Upper Egypt is still seriously behind. The differential between the two Egypts is extremely wide.

(2) Health standard in the Qena Governorate

The following table shows the health standard for all of Egypt and the Qena Governorate. The population growth rate in 1990 was 2.2% for all of Egypt while 3.3% for the Qena Governorate. The number of doctors per 10,000 residents was 9.1 nationwide and 4.2 for Qena. The number of nurses also represents a large disparity with 10.7 for all Egypt and 3.3 for the Qena Governorate.

Table 2.3.1(1) Indicators of Health Services Situation

Item		ARE	Qena
Est. of Pop. 1-7-1990			
(in thousand)	Urban	24,457	583
	Rural	31,556	1,908
	Total	56,013	2,491
Percentage of Urban Pop.		43.7	23.4
Percentage of Rural Pop.		56.3	76.6
Crude Birth Rate 1990		29.7	41.28
Crude Death Rate 1990		7.7	8.29
Natural Increase Rate 1990		22.0	32.99
Total of Health Sector Beds		108,006	2,309
No. of Beds/1000 Pop.		1.9	0.93
Total of MOH Beds		65,200	2,199
Total No. of Physician		51,097	1,045
No. of Pop./Physician		1,096.2	2,384
Rate of Physicians/10,000 Pop.		9.1	4.20
No. of Beds/Physician		1.3	2.10
Total No. of Denstist		7,284	107
No. of Pop./Dentist		7,689.9	23,280
Rate of Dentists/10,000 Pop.		1.3	0.43
Total No. of Pharmacist		7,284	52
No. of Pop./Pharmacist		7,689.9	47,904
Rate of Pharmacist/10,000 Pop.		0.1	0.21
Total No. of Nursing staff		60,068	809
Rate of Nurse/10,000 Pop.		10.7	3.25
No. of Pop./Nurse		932.5	3,079
Nurse/Physician		1.2	0.77
No. of Beds/Nurse		1.1	2.72

Source : MOH

(3) Difference of Infectious Disease by Locality

Table 2.3.1(2) shows numbers of patients with infectious diseases and morbidity rates per 100,000 people for all of Egypt (ARE) and the Qena Governorate. The Qena Governorate has more patients with encephalitis meningitis pneumonia and tetanus compared to those of ARE. On the contrary, the numbers of patients with respiratory tuberculosis, typhoid fever and erysipelas are fewer than those of ARE.

Morbidity rate per 100,000 persons in the Qena Governorate is 1.17 times as much as that of ARE.

Table 2.3.1(2) Difference of Infectious Disease by Locality (1991)

(Unit : person)

Main Disease	A R E		Qena Governorate	
	Patient	Morbidity Rate (per 100,000)	Patient	Morbidity Rate (per 100,000)
Hepatitis	15,776	28 1	952	38.2
Pneumonia	7,672	13.6	1,584	63.5
Typhoid Fever	5,250	9.	14	5.6
Tetanus	4,197	0.4	243	9.7
Mumps	3,930	7.0	162	6.5
Respiratory Tuberculosis	3,236	57.7	201	8.0
Erysipelas	2,920	5.2	0	0
Encephalitis	2,166	3.8	291	11.6
Meningitis	1,645	2.9	171	6.9
Total	46,792	128	3,618	150.0

Remarks: Calculation of morbidity rate is based on ARE population of 56,013,000 and 2,491,000 in the Qena Governorate (1991).

Source : Ministry of Health

2.3.2 Management System of Public Medical Facilities in the Governorate

(1) Management system

Medical facility operations at district hospitals, small scale hospitals and clinics are managed by the Health Bureau of the Governorate or Special Administrative City under the supervision of the Ministry of Health. The director of each hospital is responsible for medical services in general while the Health Bureau manages personnel matters, wages, operational cost, building and facility

maintenance and medical equipment, etc. procurement. Upon receipt of supply requests from medical facilities, the Medicine Supply Center operating under the Health Bureau provides pharmaceutical supplies. Likewise, medical equipment is supplied by the medical Equipment Supply Center, and maintenance and repair work is provided by the Medical Equipment Maintenance Center, both of which are managed by the Health Bureau.

(2) Medical service system

Medical facilities in the Qena Governorate include the rural health centers located in villages along the rural Nile River areas. These centers offer only initial diagnosis and therapy and do not have facilities for inpatients. In more populated areas, there are town-level small-scale hospitals, which are equipped with beds for a small number of inpatients and equipment for minor operations and offer primary care. District hospitals are located in major cities and provide primary and secondary care to local residents and patients referred from lower-level facilities. Some tertiary care is offered at certain district hospitals with specialized physicians, but in most cases, patients are referred to the Asyut Hospital or Sohag Hospital attached to the Asyut University Medical School in the adjacent Governorate. The following table summarizes the capacities and medical service contents of different kinds of facilities in the Qena Governorate.

Outline of District Medical Facility

Kind of Facility (location)	C a p a c i t y	Main Diagnosis and Therapy
District Hospital (District terminal city)	Number of Bed: more than 50 Doctor : more than 20 persons Nurse : more than 10 persons Total staff:more than 100 persons	·Primary and Secondary care ·Partially tertiary care ·Operation in general ·Clinical operation
Small Scale Hospital (Town level)	Number of Bed: less than 25 Doctor : about 4 persons Nurse : 2~3 persons Total staff : 50~60 persons	·Diagnosis & therapy in general ·Minor operation ·Normal and minor abnormal delivery, etc.
Dispensary (Village level)	Number of Bed: None Doctor : 1~ 2 persons Total staff : 15~30 persons	·Initial diagnosis & therapy ·Preventive medical care such as vaccine ·Normal delivery ·Registration of birth

Source: Nag Hammadi Hospital

(3) Operation budget for health sector in Luxor City and the Qena Governorate

Table 2.3.2 (1) displays the operation budget and facility maintenance cost excluding personnel cost for the health sector in Luxor City. Each expenditure item is the total cost of all medical facilities in the city. The city's Health Bureau manages the operation of each facility with medical supplies and equipment supplied by the city's Medicine Center and Medical Equipment Center. The Medical Equipment Center repairs and maintains equipment. All three centers are city funded (See notes of Table 2.3.2 (1)). The Medical Equipment Center's budget provided in Note (2) is much greater than the equipment purchase cost. This is probably accounted for as actual equipment provided by the Ministry of Health.

Table 2.3.2(1) Operation Budget for Health Sector in Luxor City

(Unit: E.£)

	1989/90	1990/91	1991/92	1992/93
Revenue				
1. Bounty from M.O.H.	3,928,500	6,319,000	6,994,000	8,307,000
2. Budget of the City	50,000	30,000	30,000	25,000
3. Income from chargeable Treatment	18,300	18,000	19,900	20,000
Total	3,996,800	6,367,000	7,039,000	8,352,000
Expenditure				
1. Electric	3,000	5,000	16,000	20,000
2. Fuel	8,000	8,000	16,000	16,000
3. Water Charge, etc.	1,000	3,000	4,000	5,000
4. Medicine	400,000	497,000	628,000	800,000
5. Purchase of Medical Equipment	500	700	1,000	1,000
6. Repair of Medical Equipment	2,500	6,100	6,500	6,500
7. Operating/Maintenance	12,000	132,000	27,500	27,500
Total	427,000	651,800	699,000	876,000

Notes : (1) Budget for Medicine Supply Centre of Lxr. City (1992/93):E.£ 810,000
(2) Budget for Medical Equipment Supply Centre of Lxr.City (1992/93): E.£ 1,533,500
(3) Budget for Maintenance Centre of Medical Equipment of Lxr. City (1992/93):E.£ 7,500
(4) 1E.£ ≒ ¥32

Source: Luxor City Data

Medical facilities throughout the Qena Governorate are operated similarly. The health sector operation budget in the Qena Governorate is provided in Table 2.3.2 (2).

Table 2.3.2(2) Operation Budget for Health Sector in the Qena Governorate

(Unit: E.£)

	1989/90	1990/91	1991/92	1992/93	1993/94
Revenue					
1. Salaries/Wages Budget	15,514,565	17,420,000	18,922,000	21,193,000	24,894,000
2. Operation Budget	5,144,665	5,382,225	6,880,200	7,365,923	7,944,000
3. Construction Budget		1,509,710	2,350,000	5,980,000	3,694,000
Total	20,659,230	24,311,935	28,152,200	34,538,923	36,532,000
Expenditure					
1. Salaries/Wages	14,122,945	16,379,155	18,618,933	20,524,150	-
2. Operating Expence	5,081,792	5,366,156	6,764,199	7,365,461	-
3. Facilities Construction		884,201	1,571,015	4,906,856	-
Total	19,204,737	22,629,512	26,954,147	32,796,467	-

Notes : (1)Budget for Medicine Supply Centre of the Qena Governorate : E. 1,000,000
(2)Budget for Medical Equipment Supply Centre of Qena Gov. : E.£ 6,944,000
(3)Budget for Maintenance Centre of Qena Gov is u known. It is included in the operation Budget of Qena Hospital
(4) 1E.£ ≒ ¥32

Source: Health Department of the Qena Governorate

(4) Income from chargeable treatment

In principle, public medical facilities in Egypt offer medical services for free. However, they can, at their discretion, charge fees for certain treatments and use the income as part of their operating budgets.

Table 2.3.2(3) Income from Chargeable Treatment and the Compensation for Operating Budget (1993)

(Unit: E.£)

Item	Luxor	Qena	Nag Hamadi	Farshuwt	Qift	Isna
Income from Chargeable Treatment	402,807	1,593,255	114,000	53,770	unknown	81,818

Source : M.O.H. data (1E.£≒¥32)