5) Blood Transfusion System

This priority program targets the population of 1,800,000 in the average scale Oblast in 2010. The main concept of this program is to centralize and consolidate of Oblast Blood Centers (BC) and Blood Transfusion Units (BTU) at Oblast level. Specifically, centralization of blood tests and processing will be focused. The function of blood test at existing BTUs in the medical facilities will be shifted to BC, and the function of BTUs will be concentrated on blood collection.

The cost of the Pilot Study mainly goes to constructing the central BC (including blood test and staff training) for 960,000 US$, and equipment provision cost of 1,080,000 US$ will also be necessary, making the total cost estimate 2,040,000 US$.

On per capita basis, approximtely 1.13 US$ (1,00 sum) will be required. This figure is small; only 0.78% of expected GDP per capita in 2010, which is the final target year of the Master Plan; 2.65% of GDP per capita in 2005, which is the short term target year. This indicates that no critical issue seem will arise when implementing this program.

The major running cost of the priority program implementation is expenditures on reagents of laboratory test, operation and maintenance of the equipment, which is estimated to be US$21,600. This estimate only includes the cost of blood test, as existing equipment will be renewed, requiring little maintenance cost. The number of blood sample is projected, given that blood transfusion system is put in place by this program and that 1% of the residents in the targeted Oblast donates blood.

This priority program intends to establish centralized blood transfusion system by utilizing the existing labor and organization. New system will still consist of same staff at BC, and therefore, increaseed labor cost is not included in the discussion.

The annual running cost of the Pilot Study will be 21,600 US$ incurred only for blood test. On per capita basis, the cost to be shared by the beneficiary is as small as approximately 0.012 US$ (12 sum). And at present, blood test is in place by old-fashioned equipment and the method, however, the expense is covered by the Government. For these two reasons, implementing the program will face no critical issue.

On the other hand, centralization and consolidation of BCs and BTUs will reduce cost tremendously. Especially, owing to centralization of the blood test and processing, the

cost of blood test in existing BTU, which is located in the medical facilities, will become "zero". At the same time, it makes possible to process large amount of samples, as a result, needless consumption of reagents for calibration can be avoided, and cost will be reduced by better operation rate of equipment.

Above all, this program brings about the largest benefit; security of blood quality.
AIDS center reported that 46.05/100,000 of positive was found in 2002 in HIV testing result of blood, which may be avoided by the new blood transfusion system. In addition, more balanced demand and supply of blood will make possible the appropriate surgical operation, which will also benefit the patients in/after operation. For these reasons, this program will tremendously contribute to securing the quality of blood and maintaining stable demand and supply of blood. Hence, the entire population will be the beneficiaries of this program.

CHAPTER 17
TECHNOLOGY TRANSFER TO THE COUNTERPART PERSONNEL

17. TECHNOLOGY TRANSFER TO THE COUNTERPART PERSONNEL

Technology transfer to counterparts (C/P) was conducted three forms under the Study: (i) OJT (on-the-job-training), and (ii) seminars and workshops. Specifically in the case of OJT, technology transfer was achieved through the working groups, meeting with counterparts, and side-by-side implementation of the entire range of survey tasks including analysis of study methodology, analysis of collected data, and preparation of reports.

17.1 Implementation of Technology Transfer for Health Financing

The health financing component of the Study Team conducted technology transfer to counterparts through the following mechanisms: a) presentations and discussions in Working Group meetings; b) presentations of Japanese expert; leader of technical advisor of JICA on Japan's health financing system in March r 2003, and; c) counterpart training in Japan for two Ministry of Health (manager class counterpart training; August 14 – August 29, health finance training Course; August 14 –September 5) in 2003.

The Working Group mechanism was a useful venue to transfer knowledge. This group was comprised by counterparts from the Ministry of Health, representatives from the Special Committee for Health Reforms of the Cabinet of Ministers, the Finance, Macro-economy and Statistics ministries, as well as individuals representing private groups. In the discussions, there was a strong sense among local participants of benchmarking with OECD (Organization for Economic Cooperation and Development) countries. However, lack of data and/or different data definitions stymied efforts for direct comparison. Moreover, it was impressed on counterparts the difficulty of making direct inferences from data comparison when levels of development and health systems vastly differ. Greater efforts should be made in the country to synchronize data definitions and data gathering processes with internationally accepted standards. A first step in this direction would be the installation of a National Health Accounts system, one of the first activities identified in the Plan.

Japan's health financing system was presented to an Uzbekistan audience. Since there was generally a lack of familiarity with the Japanese system, these presentations broadened the participants' outlook and understanding of different health systems. While some elements of Japan's system may not be suitable to Uzbekistan because of differing resource

base, some aspects of the system may be of interest, among others, its origins in communities, the role of local authorities and the participation of the private sector. Knowledge of how these evolve into the unified system that Japan has now can be valuable in the 'design' process for Uzbekistan.

The outline of the health financing and universal coverage of the health insurance system in Japan was understood through the above-mentioned seminar. Therefore, the main purpose of Counterpart training in Japan was to know the actual situations and details of health financing system in Japan. For the establishment of strengthening of the health financing and effective use of medical resources in Uzbekistan, the training conducted for the details revenue for insurance fund, collection system, payment system, management of insurance fund, and the structure and function of health insurance association. Especially, the training conducted rural health insurance system for the secure the quality of medical services in rural areas. The other hand, administration and management of public health in rural areas are also important for strengthening of medical services. Therefore those subjects were trained including visit to the health center of Japan.

The study was able to access valuable documents from internet sources. Documents from the European Observatory of Health Care, World Bank, World Health Organization, UNICEF, among others, were gathered. They are useful references for health policy reforms in general and health financing in particular. The technology transfer process can be sustained by the development of mini-library with similar materials, expert translation of these documents and dissemination policies. More importantly, exposure to other systems, through study and conferences, and training programs, will strengthen local capacities for tracking and driving the reform process currently underway. Basic to this process is the creation of core competencies in health economics and the establishment of a Health Financing Policy Unit that will steer the process of transformation to a much improved health system for Uzbekistan.

17.2 Implementation of Technology Transfer for GIS Activities

Uzbekistan follows a centralized and aggregated statistical information system. Besides the UN agencies there are few other donor agencies working in the health center and ministry of health is implementing a major World Bank funded project on developing health infrastructure. Health facilities (GIS) mapping or plotting various indicators on a

map has not been employed (except WHO, which has a limited oblast level thematic mapping, World Bank project which manually plotted the SVPs on a paper map to show the facilities to be renovated or constructed in project oblasts).

This study project aimed to develop the base maps of Uzbekistan up to rayon level, develop maps for one sample oblast thoroughly with all the features, distribute basic maps on license free software, and transfer this technology, hardware and software to the RIAC so that further development, distribution can be undertaken by them.

The following activities are undertaken by the study project

1) Digitization and development of Uzbekistan map with the following layers.
   Oblast (state) boundaries and capitals
   - Rayon (districts) boundaries
   - Rayon centers (capitals)
   - Important cities in each rayon
   - Roads of all types (national highways, major roads, minor roads, other roads)
   - Railway lines of all types
   - Water bodies – sea, river etc.

2) Digitization and development of a sample oblast complete maps (FERGHANA oblast) with the following layers
   - Rayon boundaries
   - Waster bodies (RIVERS)
   - Canals
   - Contours (hills and mountains)
   - Forest
   - Sand areas
   - Roads
   - SVP points
   - Other hospital points
   - Habitation (village) points

3) Collection, attachment and printing of maps (around 50) of rayon level data on population, health infrastructure, diseases, health services statistics)

4) Development of distributable GIS application. This program is developed in ark explorer 2.0 (for slower computers) and ark explorer 4.0 (java version) for latest computers. This program with the DATA ATTACHED can be installed in any number of locations free of licensing requirements. It is provided that RIAC would update the data once in a year and distribute it to the users.

5) GIS training and technology transfer to the counterparts.

Table 17.1 Details of GIS Training to Counterparts

No.	Item	Description
1	Number of programmers (RIAC) trained	11
2	Methodology of training	Lecturer method, practicals, small project –exercises
3	Topics training was focused on	Digitization of paper maps, development of different layers, attachment of data, generation of various thematic maps, printing of maps, doing simple analysis through zoning (buffers) utilization of different formats of source data, development of applications and distribution of GIS maps and applications
4	Duration of training	30 days

6) The following HARDWARE is supplied to RIAC as part of the project

- 2 Numbers of Pentium 4 computers with all the accessories like CD WRITER and one 17inch monitor.
- One large scale printer which can print maps up to A0 size (HP DESIGN JET 500 with HP GL2 card)

7) The following SOFTWARE is supplied to the RIAC as part of the project.

- ARK VIEW 3.2a

8) A comprehensive manual on GIS, updating of maps, editing of maps, data and other contents is prepared in English and Russian language and distributed to the trainees.

17.3 Implementation of Technology Transfer by Working Group Activities

The JICA Study Team organized Working Groups for analysis of the results and fact findings, and to identify the best practice, issues and constraints in the present health situation in Uzbekistan. Also, working groups formulated the ways of solution and improvement programs. This Working Groups were functional for technology and knowledge transfer to the members. This group was comprised by counterparts from the Ministry of Health, representatives of other ministries related with health administration, medical organizations and enterprises, international organizations, NGOs, directors and specialists of rural government and medical facilities, and JICA Study Team. There were 12 small technical working groups of the sub sectors and each development program in total. For the coordination of each working group activities two coordinators were appointed, one from Ministry of Health and one from JICA Study Team. The head of working group was from Ministry of Health as moderator of the meetings.

The first plenary session of working groups was held on 31 January 2003. Through the discussions, these Working Groups conducted analysis of collected data, existing situations of each sectors, identified the best practice, problem issues and constraints of the existing medical services system, and formulated the ways of solution and improvement programs for the Master Plan.

Explanation of the study methodology for the working group for the situation analysis and project formulation was conducted at the plenary session of the all the member of working groups. The methodology of them was improved during the working group activities. The study methodology of technology transfer is 2 components.

- Evaluation of the current health care situations, best practice, issues and constraints
- Formulation of the way of solution, improvement programs, and strategies and design of the health care reform

The transfer methodology of the evaluation and situation analysis by the working groups was following scientifically approach.

- Stage-wise and area (regional)-wise approach

- Object-oriented approach
- Structure-functional approach
- Cost effectiveness approach
- Sectoral approach
- Intersectional or horizontal approach

Also, basic concept of the planning by the working groups is shown in below;

- Effectively implementation of health care and medical services
- Effective and rational use of the medical resources
- Consideration with characteristics of each area and zone
- The collaboration with the Ministry of Health, related ministers, donors and NGOs
- The programs focus on the needs of the demand side (patients)

APPENDICES

1. Tables and Figures

Appendix Table 3.1 Counterpart Meeting

Date: November 11, 2002
Place: Conference Hall of MOH, Tashkent

Ministry of Health

Name	Position	Organization
Mr. Abdumanon Sidikov	Director	International Contact and Relations Department
Mr. Ulugbek Khayrullaev	Deputy Director	International Contact and Relations Department
Mr. Khodjibekov Marat	Deputy Minister	Ministry of Health
Mr. Kamilov Asomiddin	Deputy Minister	Ministry of Health
Mr. Ilikhamov Farkhad	Director	Main Department of Prevention and Treatment
Mr. Akilov Farkhad	Director	Main Department of Human Resources and Education
Ms. Alimova Matuluva	Deputy Director	Main Department of Human Resources and Education
Mr. Fayziev Maksud	The First Deputy	Management division of GAA "Dori-Darmon"
Ms. Bakhramova Nazira	Director	Drug Logistic Center
Ms. Turieva Nuriy	Director	Main Department Maternity and Child Health
Mr. Otabekov Nurmat	Director	Sanitary and Epidemic Control Department
Mr. Muradkhanov Akhmatkhov	Director	Security Department
Mr. Fayzullaev Erkin	Deputy Director	Main Department of Economics and Finance
Mr. Khakimov Timur	Director	Department of Privatization and Private Medicine
Mr. Abdurakhimov	Director	Department of Self Financing and Self Government
Ms. Saldikhodjaeva Rikhsi	Director	Nurses Association of Uzbekistan
Mr. Dushamov Rasul	The First Specialist	Main Department of Logistics Development
Dr. Mutalova Zulkhumol	Director	Republican Informative Analytic Center

Appendix Table 3.2 Round Table Meeting

Date: November 25, 2002
Place: Press Center, Tashkent

Donors and International Agencies

Name	Position	Organization
Ms. Zulfia Kainmova	Portfolio Management Officer	Asian Development Bank
Ms. Karima Saceh	Health Economist/ECSS Manila H.Q.	Asian Development Bank
Dr. Marc Bonnel	International Expert	Europe Aid/ TACIS
Dr. Putter	Deputy Team Leader	Europe Aid / TACIS
Ms. Yukiko Nakano	Secretary	Embassy of Japan
Mr. Tomoyuki Hayashi	Secretary	Embassy of Japan
Ms. Kae Yanagisawa	Residential Representative	JICA Uzbekistan Office
Mr. Hideki Tanabe	Assistant Residential Representative	JICA Uzbekistan Office
Mr. Sarvar Tillabaev	Program Officer	JICA Uzbekistan Office
Mr. Fozie Khasanov	Medical Liaison Officers	Medecins sans Frontieres
Mr. Talevski	TB Consultant	Project Hope
Ms. Tunyaeva Yuliya	Program Assistant	Project Hope
Dr. S.Sakhipov	Project Manager	UNFPA
Ms. Mary E. Skacie	Public Health Management Specialist	USAID Almaty Regional Office
Mr. Alisher Ishanov	Health Specialist	USAID Uzbekistan Office
Mr. Rano Sabitov	Health Assistant	USAID Uzbekistan Office
Mr. Andreas Tamberg	Health Advisor	USAID Uzbekistan Office
Ms. Jenny Farrell	Country Manager	Zdrav Plus Project
Dr. Peter Campbell	Medical Education Director	Zdrav Plus Project
Ms. Asta Kenney	Director of Health Promotion	Zdrav Plus Project
Dr. Subcata Raith	Director (F&M)	Zdrav Plus Project
Mr. Khodjaev Zokir	Project Coordinator	WHO
Mr. Jack Imlenbrumer	Moscow office, Economist	World Bank

Ministry of Health

Name	*Position*	*Organization*
Mr. Abdumanon Sidikov	Director	International Contact and Relations Department
Mr. Khodjibekov Marat	Deputy Minister	Ministry of Health
Mr. Khodjimetov	Vice Director	"Dori-Darmon"

Appendix Table 3.3 Workshop on the Inception Report

Date: November 30, 2002
Place: conference Hall of MOH, Tashkent

Ministry of Health and Regional Health department

Name	Position	Organization	Region
Armerdanodv Sh.K	Head of the Unit	RIAC	Tashkent
Khalimov A.A.	Deputy	Treatment Dept.	Tashkent
Isanov A.Uy.	Chief Doctor	Central Rayon Hospital	Tashkent
Akramov A.I.	Head of the Dept	Oblast Health Dept.	Tashkent
Sarimsakova P.Z	Head of the Economic Dept.	Oblast Health Dept.	Tashkent
Ergasheva Kh.A.	Chief Doctor	Zangiota Central Rayon Hospital	Tashkent
Urinbayev I.	Head of the Dept	Oblast Health Dept.	Djizak
Shernazarov F.Kh	Deputy	Oblast Health Dept.	Syrdarya
Kasimov F.M.	Head of the Economic Dept	Oblast Health Dept.	Syrdarya
Rakhmanov Z	1st Deputy	Oblast Health Dept.	Namangan
Khusanov Z.	Chief Accountant	Oblast Health Dept.	Namangan
Ruzimova Z	Head of the Economic Dept	Oblast Health Dept.	Khorezm
Jumashev I.	1st Deputy	Oblast Health Dept.	Khorezm
Yusupov I.	Chief Doctor	Beruniyskaya Central rayon Hospital	Karakalpakstan
Jumaniyazov A.	Deputy Minister	Minister of Health	Karakalpakstan
Abdumanov B.	Chief Doctor	Takhtakupir Rayon Hospital	Karakalpakstan
Turimbetova	Minister of Health	Ministry of Health	Karakalpakstan
Rakhmanov R.K.	Head of the Dept	Oblast Health Dept.	Kashkadariya
Buimuradov	Deputy of the Head on finance	Oblast Health Dept.	Navoi
Kasimiva F.	1st Deputy	Oblast Health Dept.	Bukhara
Mukhtarov Kh.	Chief Doctor	Bukhara region hospital	Bukhara
Tukhtabayev M.	Deputy	Oblast Health Dept.	Andijan
Karimov B.	Head of the economic dept.	Oblast Health Dept.	Andijan
Abdurakhimov M.I.	Chief Economist	Oblast Health Dept.	Fergana
Kuzmina	Chief Economist	Oblast Health Dept.	Fergana

Appendix Table 3.4 Workshop on the Interim Report

Date: March 6, 2002
Place: conference Hall of MOH, Tashkent

Name	Position	Department / Organization
Asadov D.A	1st Deputy minister	Ministry of Health
Khodjibekov M.Kh	Deputy minister	Ministry of Health
Masharipov Kh		Cabinet of Ministers
Sidikov A.E	Head	Department for International Cooperation, MOH
Akilov F.A	Head	Department of Human Resources Education and Science, MOH
Maksumov D	Director	Project "Health"
Bakhramova N	Director	Drug policy Center, MOH
Khashimov Sh.Kh	Chief	Main Prevention and treatment department, MOH
Khairullaev U	Chief of Unit	MOH
Dushanov R	Deputy chief	Logistics department, MOH
Subrata Routh	Director F&M	ZdravPlus
Salikhova F	F&M Manager	ZdravPlus
Alimov A	Rector	Tashkent Pediatric Medical Institute
Zakirov I.G	Head	Department for Privatization and healthcare management
Fayzullaev Y.R	Deputy chief	Finance and Economic Department, MOH
Abdurakhimov R.A	Chief	Department for Chargeable services and tariffs
Djalilov Kh.E	Deputy chief	Drugs quality control department
Maksudova Kh.A		State Statistics Committee
Zadorozhnaya R.A		Ministry of macroeconomics
Murtazayev A.M	Director	"Health" Institute
Yadgarova K	Deputy Chief	Department for Maternal and Child health protection
Magdaliev O.D	Deputy Director	RIAC
Karabayev V.Sh	Chairman	Association of Physicians of Uzbekistan
Makhmudova D.I	Director	Scientific and Research Institute of Pediatrics
Nadjmitdinov A	Professor	Department for healthcare organization and management
Mukhamedgarayeva F.Sh	Deputy chairman	Association of Nurses of Uzbekistan
Irgashev A	Director	"Uzmedexport" enterprise
Akhmedova		Institute for epidemiology, microbiology and infectious diseases
Usmanov R.I		2nd Tashkent Medical Institute
Atakhanov Sh.E	Deputy rector	1st Tashkent Medical Institute
Iskandarov	Director	Scientific Institute for sanitation, hygiene and professional diseases

Name	Position	Department / Organization
Fayziev Maksud	Chief	"Dori-Darmon"
Khakimov T.P.	Head	Department for Privatization and Private Medicine
Muradkhanov	Head	Second department (organization of disaster healthcare)
Hiroya Ogata		Chief of advisory committee, JICA
Kunihiko Hirabayachi		Advisory committee, JICA
Hideaki Matsumoto		Coordinator, JICA
Kae Yanagisawa		Director, JICA Uzbekistan office
Eiji Asami		Assistant resident representative, JICA Uzbekistan office
Sarvar Tillabayev		Program officer, JICA Uzbekistan office
Hiroshi Abo		Team leader, JICA study team member
Maria Christina G. Bautista		JICA study team member
Kenji Soda		JICA study team member
Keiko Muramatsu		JICA study team member
Bakhrom Durmanov		JICA study team member
Nadira Moratova		JICA study team member

Appendix Table 3.5 Workshop on the Draft Final Report

Date: September 17, 2003
Place: conference Hall of MOH, Tashkent

Name	Department / Organization
Mr.Rakhimjanov Shukhrat	UNICEF
Mr.Shalakadze A.	UNICEF
Mrs.Sabirova F.B.	Pediatrics Research Institute
Mr.Michael Porter	Med. consultant, World Bank
Mr.Robert Taylor	ADB Project, Women & Child Health Care
Mr.Andreas Tamberg	USAID
Mr.Karima Salekh	ADB
Mr.Mukhamadyarova Roza	Health Project
Mrs.Erika Khibi	UNFPA
Mrs.Feruza Fazilova	National Advisor, UNFPA
Mr. Subrata	Zdravplus
Mrs.Atadjanova G.	Zdravplus
Mr.Peter Campbel	Zdravplus
Mrs.Mikivan Gerven	MSF
Mr.Khodjimetov	'Doro-Darmon' Chairman Deputy
Mr.Nurmatov	Financial Department Chief, Samarkand Oblzdrav
Mr.Shukhrat Ziyaviddinov	Liason Officer
Mr.Khamidova G.	Oblzdrav, Bukhara city
Mr.Boymuradov Sh.	Oblzdrav, Kashkadarya Oblast
Mr.Rakhmonov R.	Oblzdrav, Kashkadarya Oblast
Mr.Djumaniyazov O.	Karakalpakiya, Deputy Minister of Health
Mr.Rustamov Z.	Namangan, Chief Deputy
Mr.Nizamov J.	Namangan, Oblzdrav
Mr.Abdullaev N.	Surkhandarya, Oblzdrav
Mr.Mamarajabov	Surkhandarya, Oblzdrav, Chief Deputy
Mr.Karimov B.	Andijon, Oblzdrav
Mrs.Zadorojnaya R.	*Ministry of Economics*
Mrs.Kurbanova D.	'Uzmedexport", General Director Deputy
Mrs.Tsoy S.	Urgench, Oblzdrav Head
Mr.Nadjmitdinov Azad	TIPME
Dr.Tada	Headquarters JICA, Tokyo
Ms. Tsuda	Headquarters JICA, Tokyo
Mr,Khoshimov T.	Tash Periatrics Medical Institute, Clinic
Mr.Valiev A.	Institute of Epidemiology and Microbiology
Mr.Khodjibaev A.	Institute of Epidemiology and Microbiology, General Director

Name	Department / Organization
Mr.Khashimov Sh.	MoH, Curative and Preventive Department
Mr.Khodjaev Zakir	WHO
Mr.Shoislamov B.	Farmaceutical Committee Chairman
Mr.Kalanov M.	Logistics Department, MoH
Mrs.Alimova	Human resources and Teaching Facilities, Head
Mr.Usmanov	
Mr.Khashimov B.	MoH, Main Department for Economics and Finance
Mr.Shoumarov S.B.	Republican Center for Sanitarian and Epidemiology Control
Mr.Abdurakhimov Z.	Department for Payable Services and Tariffs, MoH
Mrs.Bakhramova N.	Center for Drugs Policy
Mr.Khodjibekov M.	Deputy Minister
Mr.Kamilov L.	
Mrs.Maksudova Kh.	State Statistics Committee
Mrs. Ambatsumova	Ministry of Finance
Mr.Zayloviddinov P.	Fergana Oblzdrav, Head Deputy
Mrs.Kuzmina M.	Head of Economics Department
Mr.Muratkhanov	2nd Department (Emergency Medicine)
Mr.Sidikov A.	Head of the International Cooperation Department
Mrs.Turimbetova	MoH , Karakalpakiya
Mr.Kasimov Furkat	Oblzdrav, Sirdarya Oblast, Head of Economics Department
Mrs.Kasimova Sh.	Bakhara Oblast, 1st Deputy
Mr.Karabaev V.	Association of Physicians of Uzbekistan
Mrs.Ruzimova Z.	Khorezm Oblast, Head of Planning Department
Mr.Arezov Yu.	Navoi Oblast, 1st Deputy of Oblzdrav
Mr.Jumanazarov B.	Navoi Oblast, Economist
Mr.Zakirov	MoH, Chief Deputy for the Department on Privatization and reforming
Mr.Ergashev	Djizzak Oblast, Head Deputy on Economical Issues
Mrs.Lugmanova	Djizzak Oblast, Head of the Economical department
Mr. Buranov	Head of sirdarya Oblzdrav
Mr.Bakirkhanov	Institute of Gematology, Director
Mr.Kaymenov	Chief Gematologist, MoH
Mr.Lebedeff V.	EuroAID, Project Manager
Mr.Atakhanov	Tashkent Medical Institute 1
Mr.Kasimov G.	Andijan Oblzdrav
Mrs.Tureeva N.	Main Department for Maternity and Child Care
Mr.Hiroshi Abo	JICA Study Team
Ms.Fude Takayoshi	JICA Study Team
Ms.Maria Kristina Bautista	JICA Study Team
Mr.Ranganayakulu Bodavala	JICA Study Team
Mr.Bakhrom Durmanov	JICA Study Team

Name	Department / Organization
Mrs.Nadira Muratova	JICA Study Team
Mrs.Asya Sultanova	JICA Study Team
Mr.Asami	JICA Office , Tashkent
Mrs. Rano Sabitova	JICA Office, Tashkent

Mass Media

Name	Company
Mr.Markov V.	UzReport
Mrs. Tumanova E.	Poytaht Radio
Mr.Mamatov T.	Akhborot (TV)
Mr. Ziyamukhamedov	Akhborot (TV)
Mr.Sharipov	Davr (TV)
Mrs.Gulnoza	Davr (TV)
Mr.Ranabaev Kh.	'Zdravookhranenie Uzbekistana" (newspaper)
Mrs.Gulnara Sodikova	'Zdravookhranenie Uzbekistana" (newspaper)
Mrs.Gryaznova	"Narodnoe Slovo" (newspaper)
Mr.Gafarov A.	Turkiston Press
Mr.Murodov M.	'Akhborot" Radio

Appendix 10.1

Republican information analytical center (RIAC): A detailed description

NAME	ACTIVITY	STAFF	REPORTS	COMMENTS
1. Department of receiving, control and analyses medical reports	Except for forms 47 and 30, they deal with all other forms.	8 people	(Reports other than 47 & 30)	
2. Department of Medical Statistical Information	This department collects the reports for forms 47 and 30	8 people	Reports for forms 47 and 30	
3. Department for Curative and Preventive Establishments	All the oblast- level, specialized hospitals submit their reports to the respective republican-level apex centers like (endocrinology, cardiology, TB, oncology, pediatrics, and others). This dept. receives the reports from these republican-level institutes in un-aggregated form for all the oblasts.	8 people	Form nos. 7, 8, 9, 10, 11, 12	Most of these forms are compiled by the respective apex institutions
4. Department for Sanitary and Epidemiological Survey	This department collects data on the main infectious diseases from each oblast every day. The information is collected on the telephone through a set of standard questions . This department has a long standing software running in FORTRAN for imputing and compiling infectious diseases data.	8 people	A weekly report is submitted on every Wednesday to the Dy. Minister of the Sanitary and Epidemiology Dept. A daily report is submitted to the republican SES. A monthly report on 64 infectious diseases is also submitted	This department became a part of RIAC as they had the teleprinter services earlier and it was easy for them to collect the data. With the republican SES equipping itself to collect data through a computerized network, this department's role may have to be redefined.
5. Human Resources Department	Maintains information related to the doctors in a simple FoxPro program	One head economist and three programmers	Answers the ad hoc queries from the Ministry usually 5 to 6 times a year	No service records are available. The database updation is done annually.
6. Programming Department	Supports the existing software and hardware and develops new	One person in charge and three		Not much training support is given to the programmers. Again,

NAME	ACTIVITY	STAFF	REPORTS	COMMENTS
	programs, organizes trainings, etc	programmers		they do not have the requisite program development tools.
7. Data entry Department	Mainly engaged in the data entry of the various reporting forms using the MEDSTAT software. The dept. has a sever and a local area network.	Regular staff of 15 (four engineers, and the remaining are operators)		
7. Administrative department	Administration support and book keeping			

Description of the computer software developed/in use in RIAC

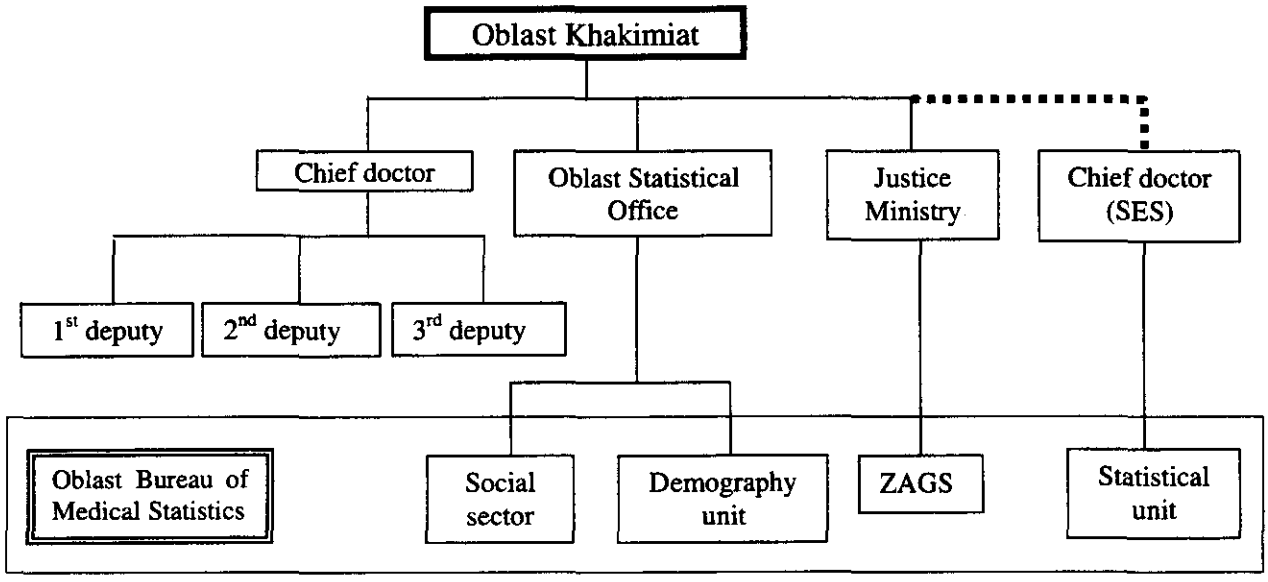
Item	MEDSTAT	Cadre Information System	Infectious Disease Information System
Description	Comprehensive software recently developed by the RIAC programming department for the data entry of all reporting forms, storage and data analysis.	Very old software that maintains the minimum data related to the doctors, with 73,000 records.	Data entry and summarization software for the infectious diseases, developed some 20 years ago.
Used by	Data entry Center of RIAC. Now being installed in some experimental oblasts	Used by the Cadre Department. Is in use in some oblasts.	Used by the Department for Sanitary and Epidemiological Survey for data entry of information related to infectious diseases, which is collected daily. Similar programs are in place in some oblasts like Sirdoria etc.
Capability	Excellent comprehensive software developed by the in-house team.	Can supply cadre information related to doctors and satisfy the regular information requirements on the health personnel.	Summarization. This program has built-in alerts/alarms to warn the management, based on the average and permitted level of infections.
Issues	At present, supports only access database, which has limitations on the data that can be safely handled. Needs linkages to RDBMS. Other modules on performance and feedback systems are to be developed. A set of validation rules need to be developed to maintain the data quality.	Only information related to the doctors, with limited data. Very old, and developed in FOXPRO environment. Supports limited fields of information. Does not have any built-in queries and quite a bit of the work has to be done manually off the program.	Very old software with limited capability to query and build databases. Developed in proprietary format in FORTRAN.
Future application	Can be extended to all oblasts so that basic data entry is done for all the forms at the oblast itself and only automatic consolidation take place at RIAC. Can be installed in rayons so that basic data entry is done at the rayons and automatic consolidations at the oblast and RIAC levels.	Needs to be ported a windows platform with more fields of information. Once this is done, the program can be installed in oblasts so that cadre management becomes easier at the oblast level. Need to include other cadre of staff also in the database.	Needs to be ported to a windows based database system, which can be installed at the oblast level and rayon level in the future. SES has plans, with the help of the UNICEF, to develop its own software; already hardware is in place in the oblasts and most of the rayons.

Appendix 10.2

HIS at the oblast level: A detailed description of the organizations

The Republic of Uzbekistan is divided in to 13 oblasts and one independent republic of Karakalpakistan. Each oblast is headed by a Hakimiat and helped by a host of officers for each function. The Table below displays the health institutions in one sample oblast (small one).

Sirdorio oblast health facilities profile	
Population	6,50,000
Rayons	9
Hospitals	32
SVP	118
Dispensaries	12



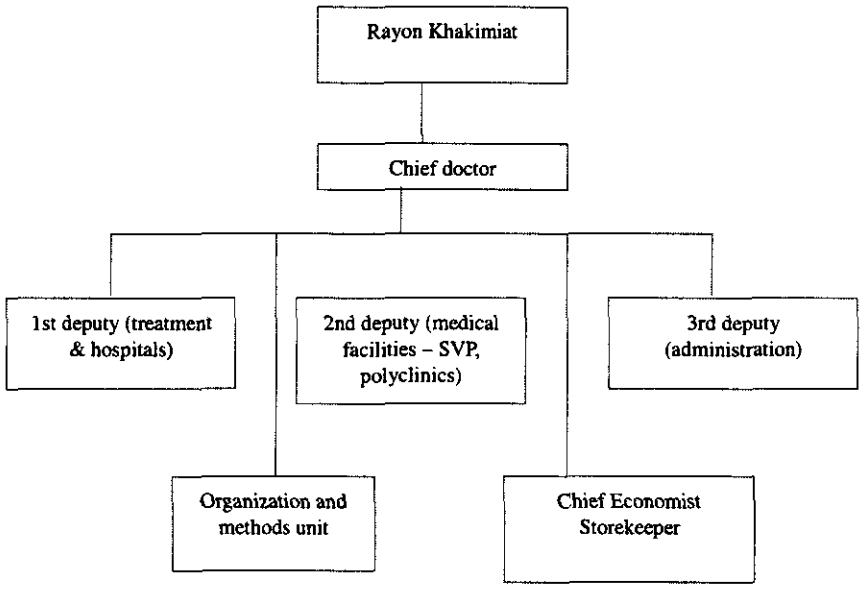
Health statistics agencies in the shaded region

Appendix 10.3

HIS at the Rayon level: A detailed description of the organizations

The rayon health organization is headed by a chief doctor and assisted by three deputies. They manage the health services through the central rayon hospital and a host of other primary health care facilities.

At the rayon level, the organization and methods unit (ROMU) in the central rayon hospital is the main agency responsible for health information. It coordinates and exchanges information with other agencies like the rayon SES, ZAGS, Statistics Department and others.



The sanitary and epidemiology station has a small section for health statistics at the rayon level. But the in-charge of each laboratory prepares his/her own report.

The general State Statistics Department works under the rayon Hakimiat. It does not have any dedicated staff for health statistics, and a general statistician deals with the medical statistics after receiving it from ROMU.

The ZAGS system (a detailed explanation has been provided in the chapter on birth and death registration system) functions under the Hakimiat and exchanges data with the ROMU.

Appendix 10.4

ZDRAV Plus project: pilot experiments in HIS

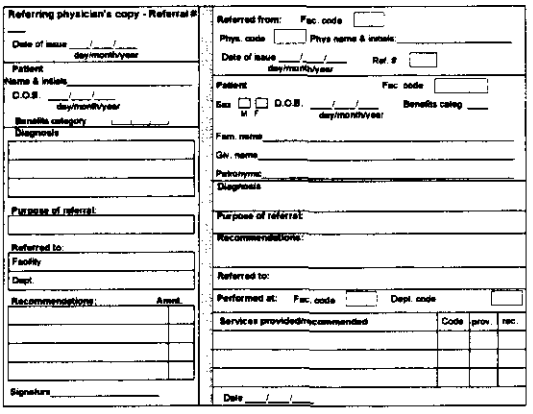
(A description of the ZDRAV Plus experiments has been obtained from the project internal reports, and the observations are supplemented by this consultant's field visits and discussions with the project managers)

The ZDRAV Plus project has been supported by USAID as part of its objective to improve the financial sustainability, efficiency, and quality of health care, while preserving equitable access in central Asian republics. The project has undertaken some pilot efforts to support the financial reform interventions of the project as part of its HIS strategy. Three types of pilot interventions were developed and implemented in the six pilot rayons (three experimental and three control) of the project in Fergana oblast:

These pilot interventions were developed parallel to the government routine health information system (GRHIS), one of them in clinical information systems, which is explained in detail in the following pages. The other reforms dealt with the financial information system and the population database, which have also been explained in the following pages.

The Clinical Information System

The pilot clinical information system, based on the model used in Kyrgyzstan, was initiated in 1999 with the purpose of starting a health insurance system. Initially, it consisted of individual Clinical Information Forms (CIF), which would be processed at the rayon level to permit research on service utilization patterns. Later, having abandoned the health insurance plans, this experiment was geared towards simplification of the internal SVP data collection system.


Referring physician's copy - Referral #
Date of issue
Patient
Name & initials
D.O.B.
Benefits category
Diagnosis
Purpose of referral:
Referred to:
Facility
Dept.
Recommendations:
Amnt.
Signature
Referred from:
Fac. code
Phys. code
Phys name & initials:
Ref. #
Sex
Benefits categ
Fam. name
Giv. name
Patronymic
Recommendations:
Performed at:
Dept. code
Services provided/recommended
Code
prov.
rec.
Date

The CIF system is still in various stages of testing. In the original experimental rayons, clinical information forms are filled in by the SVP doctors for individual patients and then sent to the rayon computer centers for computerized data entry. Initial analysis recently of the 2001 data by the ZDRAV + showed that the data are inadequate for any meaningful analysis. In the Tashlak rayon, the SVP doctors have been testing, since July 2002 a modified and simplified CIF combined with a unique attendance register for all care providers. Both the CIFs and the attendance registers are sent to the rayon computer center for data entry.

This process is under the supervision of the rayon authorities and being undertaken with its active support.

In two of the Tashkent polyclinics, another variant of the CIF system was tested, where CIFs are not used, but all clinical information is recorded in a unique attendance register for all care providers.

Detailed notes on the CIF experiments in 45 and 19 city polyclinics and the Tashkent central rayon hospital.

This experiment started on the 1 July 2002, and data collection was discontinued from 31 December 2002.

The CIS implemented in these polyclinics is a manual system. The ZDRAV Plus project team has designed a unified doctor and nurse register, which has columns for recording comprehensive patient information, covering both hospital and home visits. At present, the registers are being sent at the end of the month (or on the exhaustion of all the pages in it) to the rayon central hospital statistics bureau, where the data entry program has been loaded on to computers and assistants have been employed to enter the data.

1. Initially, the ZDRAV designed a card for the CIS. But, on discovering that it consumed lot of stationery and that it was also a bit difficult to check a row of patients, they switched to the journal system.

2. The register columns: Name, date of birth, dispensarization group, complication, referral, result of illness, ICD 10 grouping, stage of illness, description, remarks, etc.

3. A detailed instruction sheet has been developed and supplied to the doctors to take quick notes of the codes and fixed groups for easy data entry and analysis.

4. Some of the doctors feel comfortable with the system and would prefer to enter the information themselves in the computer.

At present, they have only developed the MS ACCESS-based data entry program.

A technical task and algorithm for working out the main forms of the state statistics reports (F.1, F.12, F.30, F.39) has been prepared and with its help various statistical reports are generated. They are planning to reconcile these reports with the ones that are available through the routine health information system.

ZDRAV Plus project at this stage feels the need to:

- Continue testing the CIF system only in one sentinel site in FERGHANA oblast.
- CIF limited use in the rural health facilities where the other enabling factors are not in place. CIF has practical applications in the urban health facilities.

The ZDRAV Plus project feels that the financial information system module is more important for project management and monitoring. They also feel that is relatively simple and manageable with the financial module than with the clinical information system, which is, by its inherent nature, complex in structure and has several inter-linkages with routine reporting systems.

Population database development

This program was started at the end 1998, with the simple purpose of calculating the catchment area population as well as the age and sex distribution within the population for each SVP. These figures, in turn, would be used to calculate capitation rates for the SVP budget.

Population database

It has been implemented in six rayons of Ferghana oblast and has also been established in some rayons of Syrdaria and Navoi oblasts. For Ferghana oblast, around 615,000 individual records have been entered at the rayon computer centers. At present, the database has been used only to calculate capitation rates for the pilot rayons, based on total population and population profiles.

1. ZDRAV have conducted a household census using a fixed questionnaires with the help of the primary health facilities. (Not used any thing from the existing SVP population registers)

2. They have employed sufficient a number of computers and data entry staff at the oblast and now at the rayon levels to data enter this census information.

3. But, the utilization of this database by the primary health facilities has been restricted to budget calculation.

4. The updation procedures on migration and quality maintenance of this data are yet to be thoroughly tested. It is not sure whether this database has been reconciled with the makhalla system, which maintains a similar register.

At this stage of the ZDRAV Plus project, (august 10th 2003 :

Rolled out the population database to the respective oblasts in the experimental oblasts. Developed extensive package of documentation and has handed over to the world bank project and to the RIAC organizations where ever applicable.

Further roll-out of this intervention to other oblasts should be decided in close consultation with the MOH.

Financial data system

The ZDRAV Plus project aimed to develop management systems at the primary health care level, with decentralization and financial autonomy as the main tools.

The pilot SVP budget allocation system permits SVP managers to manage their own budgets and use resources in accordance to their specific needs.

A computerized financial application, with models at the facility , the rayon and the oblast levels, has been developed since 2000 by the ZDRAV Plus HIS team.

The application has been handed over to the oblast health care and to selected rayon hospitals (economists – accounting departments) and they are able to generate various expenditure statements of the SVPs and then plan the budgets.

The ZDRAV Plus project at this stage (august 10th 2003

- Has developed another module for the secondary hospitals and is waiting for the sanction from the government and others to start implementing in hospitals.

Appendix Table 11.1 Scope of Service for SVPs

1. Essential health services
Promotion, surveillance and control of community health of SVP catchment area: • Monitoring and evaluation of community/catchment area and district health profile • Establishing community diagnoses • Health needs assessment and evaluation • Promotion and control of safety and healthy physical environment (air, water, soil, pollution, radiation) • Promotion of community, family and individual community members involvement into health matters • Prevention and control of epidemics of infectious diseases • Monitoring and surveillance of risk factors of non-infectious diseases • Promotion of awareness of importance of community and public health, food safety and proper nutrition • Collaboration with other sectors, institutions and organizations
Promotion, surveillance and control of health of special population groups through public and community based programs: • Planning, development, implementation, management and evaluation of health programs for different population groups and diseases • Introducing healthy lifestyle of all population groups through public communication • Health education, public information and communication on healthy behavior • Care of deprived or disadvantaged groups and families (especially broken families) • Women's reproductive health programs and actions: • Child health programs and actions: • Health of adults programs and actions: • Health of workers, especially those working in rural industrial production • Health of elderly
Prevention and control of prevailing preventable diseases – major population killers through public and community based programs: • Vaccination (regular and occasional) plans, programs and schedules • TB control programs • STD control programs • ARI control programs • DD control programs • CVD control programs (especially hypertension screening and control, healthy lifestyle promotion) • Diabetes control programs • Accidents and injuries prevention and control programs • Drug and alcohol abuse control programs • Smoking control programs • Stress coping programs • Prevention of genetic disorders caused by close-relative marriages
2. Essential clinical services
• Provision of essential individual promotional and preventive services • Provision of emergency care • Provision of child health services (incl. perinatal and newborn baby) • Provision of essential individual reproductive health services • Provision of essential individual services for prevailing infectious diseases for all population groups (main causes of deaths) • Provision of essential individual services for prevailing non-communicable diseases (main causes of deaths)
3. Additional clinical services
• Child diseases including perinatal and newborn cases • Cardiovascular disorders and diseases • Mental health and psychic disorders

- Lung diseases
- Rheumatic/orthopedic diseases
- Gastrointestinal tract diseases
- Kidney and urinal tract diseases
- Skin diseases and venereal diseases
- Endocrine diseases and metabolism dysfunction
- Blood and malignant diseases
- Nervous diseases
- Eye diseases
- Ear, nose and throat diseases
- Gynecological diseases
- Skin, sub-dermal tissue, muscular and skeleton diseases and injuries (which might require surgical treatment)

Source: DFID,1998

Appendix Table 11.2 Waiting Time of Consultation

(Unit:%)

How long did you wait?	Bukhara	Ferghana	Karakal pakstan	Navoi	Samar kand	Tashkent	Tashkent city	Total
< 15 minutes	78.8	66.3	75.0	66.7	78.8	0.0	76.2	68.2
15<30 minutes	20.0	25.8	22.5	27.6	21.2	27.6	14.3	23.1
30 < 60 minutes	1.3	7.9	2.5	4.6	0.0	72.4	7.1	8.3
1<2 hours	0.0	0.0	0.0	1.1	0.0	0.0	2.4	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: JICA Study, 2003

Appendix Table 11.3 Duration of Consultation

(Unit:%)

How long was the consultation?	Bukhara	Ferghana	Karakal pakstan	Navoi	Samar kand	Tashkent	Tashkent city	Total
5<15minutes	62.5	34.8	59.5	69.0	48.1	3.4	65.9	52.7
15<30 minutes	23.8	55.1	24.1	24.1	32.7	44.8	22.0	32.2
<5 minutes	12.5	6.7	13.9	5.7	19.2	0.0	4.9	9.6
Longer	1.3	3.4	2.5	1.1	0.0	51.7	7.3	5.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: JICA Study, 2003

Appendix Table 11.4 Satisfaction for Informed Consent of treatment

(Unit:%)

Did doctor explain treatment?	Bukhara	Ferghana	Karakal pakstan	Navoi	Samar kand	Tashkent	Tashkent city	Total
Excellently	38.5	50.0	54.4	41.4	30.8	0.0	69.0	43.5
Satisfactory	61.5	50.0	44.3	57.5	69.2	100.0	31.0	56.0
Not enough	0.0	0.0	1.3	1.1	0.0	0.0	0.0	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: JICA Study, 2003

Appendix Table 11.5 Satisfaction for Consultation

(Unit:%)

Were you satisfied with the treatment?	Bukhara	Ferghana	Karakal pakstan	Navoi	Samar kand	Tashkent	Tashkent city	Total
Very satisfied	25.0	40.4	37.5	19.5	17.3	3.4	50.0	29.1
Satisfied	75.0	58.4	57.5	79.3	76.9	86.2	50.0	68.3
Not much	0.0	1.1	5.0	1.1	5.8	10.3	0.0	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: JICA Study, 2003

Appendix Table 11.6 Repeatability of Health Facility Use

(Unit:%)

Would you return to the same health?	Bukhara	Ferghana	Karakal pakstan	Navoi	Samar kand	Tashkent	Tashkent city	Total
Yes	98.7	98.9	96.6	98.8	100.0	31.0	95.3	93.7
No	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.2
Don't know	1.3	1.1	1.7	1.2	0.0	69.0	4.7	6.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: JICA Study, 2003

Appendix Table 11.7 List of Oblast Governments' Decision Number and Date

Oblast	Registration number	Issued Date
Tashkent city	322	11/06/2003
Andijan	158-K	15/11/2002
Bukhara	70-F	08/05/2002
Djizzakh	18	05/01/2002
Kashkadarya	X157/7	07/01/2002
Navoi	K-9	15/02/2002
Namangan	325	02/06/2002
Samarkand	139-K	13/05/2002
Surkhandarya	22	02/04/2002
Syrdarya	14	29/01/2002
Tashkent	110	21/05/2002
Ferghana	276	11/12/2001
Khorezm	33	03/11/2002
Republic of Karakalpakstan	278	12/11/2001

Source: State Sanitary and Epidemiological Surveillance Department in MOH

Appendix Table 11.8 Donor Coordination with Republican Institute of Health

Agency	Target Year	Activity	Target Area
UNICEF	2003-2006 2004	Integrated treatment of early childhood development Micro-nutrient insufficiency	
WHO	2001-	Prevention of smoking, Integrated treatment of early age diseases	Uzbekistan
World Bank	2001- 2002-	Health strengthening in school Publishing Institute's information bulletin	5 targets oblast, Tashkent City
USAID/ZdravPlus	1999-	ARI campaign, Anemia control, diarrhea control, reproductive health for women	Ferghana
EU/TACIS	2003-2005	Project on providing PHC to population	Karakalpakstan, Surkhandarya

Source: State Sanitary and Epidemiological Surveillance Department in MOH

Appendix Table 11.9 The Standard of Drinking Water Indicators and the Methods of Control

Indicators/ components	Units of measurement		Standards	Methods of control
1. Micro-biological indicators				
Total microbe number	Number of microbes in 1 ml of water		Not more than 100	GOST 18963-73 ISO 8360/1-2-88
The number of intestinal bacillus group bacteria – IBGB (coli-index)	Number of IBGB in 1000 ml of water		Not more than 3	GOST 18963-73 ISO 9308/1-2-90
Escherichia (fresh fecal pollution indicator)	Number of esherichias in 300 ml of water		Absence	GOST 18963-73 ISO 9308/1-2-90
Coliphagus	Number of BOE in 200 ml of water		Absence	Methodical guidelines approved by MOH
2. Parasitology indicators				
Pathogenic intestinal elementary: cysts of lamblias, dysentery amoebas, balantidies	Number of cysts in 25 liters of water		Absence	Methodical guidelines approved by MOH
Eggs of worms	Number of eggs and larva in 25 liters of water		Absence	Methodical guidelines approved by MOH
3. Toxicological indicators (tolerance limited concentrations of components) a) Inorganic components				
Aluminum (Al)	mg/l	0.2 (0.5)*	GOST 18165-89	
Beryllium (Be)	mg/l	0.0002	GOST 18294-81	
Boron (B)	mg/l	0.5	ISO 9390-90	
Cadmium (Cd)	mg/l	0.001	ISO 5961-85	
Molybdenum (Mo)	mg/l	0.25	GOST 18308-72	
Arsenium (As)	mg/l	0.05	GOST 4152-81	
Nickel (Ni)	mg/l	0.1	ISO 8288-86	
Nitrates (NO_3)	mg/l	45	GOST 4192-82	
Nitrites (NO_2)	mg/l	3	GOST 4192-82	
Mercury (Hg)	mg/l	0.0005	ISO 5666/3-84	
Plumbum (Pb)	mg/l	0.03	GOST 18293-72	

Selenium (Se)	mg/l	0.01	GOST 19413-89
Strontium (Sr)	mg/l	7	GOST 23950-88
Fluorine (F)	mg/l	0.7	GOST 4386-89
Chromium (Cr^{+6})	mg/l	0.05	ISO 9174-90
b) Organic components			
Benzole	mg/l	10	Methodical guidelines approved by MOH
Benzapilene	mg/l	0.01	Methodical guidelines approved by MOH
Polyacrylamide	mg/l	2	GOST 19355-85
Pesticides	mg/l		Methodical guidelines approved by MOH
4. Organoleptic indicators and tolerance limited concentrations of components critical on the influence at organoleptic characteristics of water			
Taste	Points	2	GOST 3351-74
Smell	Points	2	GOST 3351-74
Turbidity	Mg/liter	1.5/2.0	GOST 3351-74
Color	Degree	20/25	GOST 3351-74
pH value	pH	6-9	Measured by pH meter with an error for not more than 0.1 pH
Total mineralization (dry residuum)	mg/l	1000/1500	GOST 18164-72
Iron (Fe)	mg/l	0.3/0.1/	GOST 4011-72
Total hardness	mol/l	7/10	GOST 4151-72
Manganese (Mn)	mg/l	0.1	GOST 4974-72
Copper (Cu)	mg/l	1.0	GOST 4388-72
Polyphosphates (PO_4)	mg/l	3.5	GOST 18309-72
Sulfates (SO_4)	mg/l	400/500	GOST 4389-72
Chlorides (Cl)	mg/l	250/350	GOST 4245-72
Zink (Zn)	mg/l	3.0	GOST 18293-72
SPAV (PAV)	mg/l	0.5	ISO 7875/1-2-84
Phenol	mg/l	0.001/0.1	ISO 6439-90
Oil products	mg/l	0.1	Methodical guidelines approved by MOH
5. Indicators of radioactive pollution			
Composite alpha-radioactivity	Bk/l	0.1	ISO 9696-92
Composite beta-radioactivity	Bk/l	1.0	ISO 9697-92
In case of exceeding the determined meanings of indicators of 5.1 and 5.2 the additional control of radio nuclide content of the pollution is conducted in accordance with p. 7.13.6 of Sanitation Norms and Regulations "Sanitation norms and regulations of radioactive safety" on the following indicators: uranium-238, radon-222, strontium-90			

Source: CSSES, 2000

Appendix Table 11.10 The Standard of Decontaminating Reagents Storage and Methods of Control

Reagents	Place of control	Unit	Necessary time of reagent's contact with water, not less than	Methods of control
Chlorine residue free*	After the clean water reservoirs	0.2-0.5 mg/l	Not less than 30**	GOST 18190-72
Ozone residue	After the mixing room	0.1-0.3 mg/l	Not less than 12**	GOST 18301-72

Notes: * - while conducting the water animating with the purpose of prolongation of the chlorine decontamination effect in water distribution network, the control for reliability of water decontamination is water scooping points is conducted on concentration of not free but bound chlorine, which should be in the limits of 0.8-1.2 mg/liter.
** - Time of contact is clarified experimentally, applicable to the definite quality of water and the level of its microbe pollution on CT indicator, mirroring the connection of concentration of free residue chlorine or ozone (C) with the time (T) necessary for the complete inactivation of different types of microbe and parasite pollution of treated water.

Appendix Table 11.11 Periodicity of Water Analysis in Distributing Network

The number of served population, thousands of people	Minimal quantity of samples, selected from the water pipe network per month
Up to 10	2
10-20	10
20-50	30
50-100	100
More than 100	200

Source: CSSES, 2000

Appendix Table 14.1 Evaluation Matrix 1 (Time Table for Health I Project Activities)

Project Goal	Project Evaluation Indicators		1997	1998	1999	2000	2001	2002	2003
(Goal)	(Objectives)	(Activity & Input)							
Strengthening of the PHC to the rural population	I. Strengthen health services through construction and reconstruction of Rural Medical Post (SVP) and supply proper medical and diagnostic equipment	1. Construction & reconstruction of SVPs	◀						
		2. Equipment and emergency drugs to SVPs				◀			
	II. Train doctors and nurses in General Practice	1. Training of GPs				◀			
		a. Training of GPs at 10-month GP courses				◀			
		b. GPs study tours				◀			
		c. Short term courses				◀			
		2. Training of universal nurses					◀		
		a. Study tour							
		b. Training of SVPs nurses				◀▶			
	III. Change mechanisms of Primary Health Care management and financing	1. Improvement of financing & management methods	◀						
		a. Training seminars & courses for financing & management		◀					
		b. Changing the financing mechanism of pooling & distributing to PHC					◀		
		c. Establishment of managing staff for new financing & management systems					◀		
		2. Rehabilitation of health care network	◀						
		a. Development of detailed plan of rationalizing health management					◀		

		b. Allocation of appropriate No. of General Physician	
		c. Allocation of appropriate No. of Physician per Nurse	
		3. Creation of management information system (MIS)	
		a. Preparation of data collection forms for population database	
		b. Training of database input	
		c. Introducing SVP budget system using population database	
		d. Training for clinical information forms (CIF) to SVP personnel	

Appendix Table 14.2 Evaluation Matrix 2 (Evaluation Indicators for Health I Project)

Project Evaluation Indicators			1997	1998	1999	2000	2001	2002	2003
(Project Goal) Strengthening of the PHC to the rural population	(Objectives) I. Strengthen health services through construction and reconstruction of Rural Medical Post (SVP) and supplying with proper medical and diagnostic equipment	1. Construction & reconstruction of SVPs	17	13	10	22	15	13	
		2. Equipment and emergency drugs to SVPs				41/26	41/26	41/26	
	II. Train doctors and nurses in General Practice	1. Training of GPs		25	28	-	-	-	
		a. Training of GPs at 10-month GP courses		-	-	43	39	45	
		b. GPs study tours				6	6	6	
		c. Short term courses	-	-	-	15	60	45	
		2. Training of universal nurses	-	-	-	-	60	30	
		a. Study tour	-	-	-	-	-	-	
		b. Training of SVPs nurses	-	-	-	364	-	-	
	III. Change mechanisms of Primary Health Care management and financing	1. Improvement of financing & management methods	+	+	+	+	+	+	
		a. Training seminars & courses for financing & management		4	3	4	2	2	
		b. Changing the financing mechanism of pooling & distributing to PHC					+	+	
		c. Establishment of managing staff for new financing & management systems					15	13	
		2. Rehabilitation of health care network							
		a. Development of detailed plan of rationalizing health management					+	+	
		b. Physician per 1,000 Inhabitants	0.9	0.1	0.2	0.2	0.5	0.9	
		c. Physician per Nurse	3.1	3.0	2.4	2.8	2.9	2.9	
		3. Creation of management information system (MIS)	-	-	-	-	+	+	

		a. Preparation of data collection forms for population database				+	+	+	
		b. Training of database input				+	+	+	
		c. % of SVP budgets that were calculated using population database							
		d. No. of personnel of SVP that received training for clinical information forms (CIF)	-	-	-	-	-	-	
	(Impact)	1. No. of patients to SVPs	161,171	247,138	492,436	580,330	930,490	2,651,769	
	I. Effectiveness of health services	a. % of out-patient	161,171	247,138	492,436	580,330	930,490	2,651,769	
		b. % of prevention	62.0	53.6	49.7	55.6	37.7	48.5	
		c. % of diseases cases	38.0	46.4	50.3	44.4	62.3	51.5	
		2. No. of delivery per 1,000	-	17.9	17.0	15.4	16.9	15.6	
		3. No. of in-home treatment/month	58,508	11,078	207,691	2,199,075	351,719	691,218	
		4. No. of MCH activity							
		5. No. of referrals from SVP to CRH		1,372	1,879	1,520	1,937	2,137	
		6. No. of hospitalized from SVPs	1,816	1,755	1,485	1,482	3,937	5,219	
		7. No. of patients from FAP		931	548	533	459		
		8. No. of day in-patients received treatment at SVPs							
	II. Accessibility of health services	1. % of population residing within 1.5km from SVP	21.7	21.9	31.4	39.7	41.3	41.7	
		2. Physician per inhabitants in SVP	90.0	111.0	260.5	360.0	399.0	464.0	
		3. Nurses per inhabitants in SVP	279.5	314.7	647.5	673.0	1,166.0	1,355.0	
	III. Quality of health services	1. Improvement of mother & child care							
		a. No. of out-patient of children under 1 year							
		b. No. of out-patient of children 1~14 years							
		c. No. of vaccination to children		15,865	22,414	35,457	30,406	56,832	
		d. No. of nutritional diseases of children							
		e. Anemia in pregnancy, %		82.4	84.7	89.6			

		2. Respiratory diseases per 100,000		4,760	13,370	198,000	198,111	124,400	
		3. Gastrointesnal diseases per 100,000		4,597.8	1,898.7	3,339.1	3,136.4	3,174.1	
		4. Hepatic/biliary per 100,000		45.17	63.40	22.10	31.20	58.60	
		5. Cardiovascular disease per 100,000		1,481.4	1,501.2	1,587.3	1,617.1	1,638.3	
	IV. Sustainability of PHC system reform	1. % of expenditures for the PHC of total health care budget in Oblasts		41.1	45.0	53.2			
		2. Budget of each SVP per 1 inhabitant			639	865	1,464	1,730	
		3. Expenditures for personnel to maintain SVPs out of total expenditures in PHC, %					56.8	59.2	
		4. Expenditures for drugs & supplies from total expenses for SVP					25,005	26,892	
		5. Drugs & supplies budget per total budget of SVP, %		59 sum	62	106			
		6. Cost of 1 visit to SVP			259.70	300.10	297.10	300.18	
		7. Supply/satisfy % of drugs to each SVP's request			81.4	81.7	82.3	83.5	
		8. Sufficient allocation of human resources to each SVP, No. & %							
		9. Sufficient provision of equipment to each SVP, %							

Appendix Table 14.3 Evaluation Matrix 3 (Fact Findings of Health I Project)

Project Goal	
	Fact Findings/Comments
Strengthening of the PHC to the rural population	• In general, PHC system in rural has been improved gradually. • Health I Project contributes to the improvement of people's health • Especially, Ferghana is implemented sufficiently. • There is still remaining un-balance for personnel, equipment and drugs allocation in city and rural, project and non project facilities. • It is important to arrange programs to meet site needs. • Opportunity for training of GPs, nurses, HIS, management, financing and O/M will be obtained widely.

Indicators/Targets	
	Fact Findings/Comments
(Objectives) I. Strengthen health services through construction and reconstruction of Rural Medical Post (SVP) and supply proper medical and diagnostic equipment	• Accessibility to the 1st level facilities is improved. • Equipment and drugs are provided appropriately. • There is a gap between Project and Non Project facilities. • There is an example: equipment provision is not met with site needs. • Sustainability after the Project is doubtful.

Indicators/Targets	
	Fact Findings/Comments
(Activity & Input) 1. Construction & reconstruction of SVPs	• SVPs locate in relatively convenient area for the people's access. • The delay is seen though construction is well done • Recipient 2 Oblasts Korakul Rayon (SVP x 26, SVA x 5, FAP x 6), Jondor Rayon SVP x 20, SVA x 12, FAP x 16) have to need implementation of programs • Toilet facility is in traditional layout, not appropriate for cold winter. • Garbage, swage and sanitary facilities are insufficient.
2. Equipment and emergency drugs to SVPs	• Provision of equipment and drugs are done properly. • There is an example of not knowing the content and necessity of equipment at the SVP level personnel (Difference from site needs) • The doubt in the specifications such as autoclave because of hard water. • There is a gap between facilities of Project and Non Project for the supply of drugs. • Sustainability after the Project including properly operation and maintenance (O/M) is doubtful.

II. Train doctors and nurses in General Practice	• The training contributes to improvement of medical services. • A lot of personnel want to participate in the training. • The number of trainee is limited. • Content of training needs to be met with current situations.
III. Change mechanisms of Primary Health Care management and financing	• The programs such as training and HIS is implemented appropriately. • Effective use for the budget in Ferghana. • It is necessary in Navoi in the future. • Fostering the administration personnel for effective use of financing is important. • Computerization and telecommunications for transmission of information is inadequate. • Improvement of data accuracy in SVP is important.

1. Training of GPs 2. Training of universal nurses	• The GP training was implemented, and many staff of pilot SVP attended trainings. • The concept of GP and universal nurse has not been fixed. Therefore, the content of training is not always suitable for the current situations. • There is a limited number of trainees in the Project, therefore it is difficult to meet a lot of needs.
1. Improvement of financing & management methods	• In Ferghana, effective use for the budget has been started. • It is necessary in Navoi in the future.
a. Training seminars & courses for financing & management	• 15 people have attended until 2002. • Usually, administration staff is not at SVP level, therefore it is important to extend the training for effective use of budget
b. Changing the financing mechanism of pooling & distributing to PHC	• It is implemented in Ferghana. • It is necessary in Navoi in the future.
c. Establishment of managing staff for new financing & management systems	• 28 people have attended until 2002 • Usually, administration staff is not at SVP level, therefore it is important to extend the training for effective use of budget
2. Rehabilitation of health care network	• The first Referral is integrated into SVP, and the program is being implemented. • Due to insufficient level of computerization and telecommunications, transmission of information is inadequate.

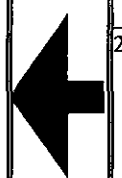
(Impact) I. Effectiveness of health services	• Number of patient and vaccination is increased. • Medical services are improved.

3. Creation of management information system (MIS)	• The resident registration and the establishment of the health information system are advanced in Ferghana. • Improvement of system in Navoi is the next process. • Computerization in SVP is not implemented.
a. Preparation of data collection forms for population database	• The resident registration and the establishment of the health information system are advanced in Ferghana. • Improvement of system in Navoi is the next process. • The resident registration is a municipal office base, and it does not link completely with the medical facilities.
b. Training of database input	• It is necessary to increase trainings including the fostering of the administration staff
c. Establishment of SVP budgets that were calculated using population database	• The Oblast decree on the per capita budget system was issued in 2001.
d. Training to SVP personnel for clinical information forms (CIF)	• The Oblast decree on the per capita budget system was issued in 2001. • The accuracy of data from SVP is unreliable due to the existing examination capability of SVP.
1. No. of patients to SVPs	• The number of patients of SVP has increased (5.4 times compared with 1999).
2. No. of delivery	• A big change is not seen.

	• *Heath I Project* contributes to improvement of people's health.
II. Accessibility of health services	• Accessibility to the 1st level facilities is improved. • Number of medical personnel is approaching appropriate levels
III. Quality of health services	• Vaccination is implemented, and it contributes to health improvement of children • Number of diseases has been reduced in accordance with increase of SVPs • Preventive education and examination equipment is necessary.

3. *No. of in-home* treatment/month	• *The number of patients* has increased for the improvement of home visiting services (3.2 times compared with 1999)
4. No. of MCH activity	• The vaccination is implemented, and it contributes to health improvement of children. • The pregnancy registration and training to the pregnancy are implemented.
5. Activity of referral system	• The referral system becomes functional (The patient transportation from SVP has increased).
1. Beneficialies' satisfaction for accessibility to SVP	• The number of residents in cover area of 1.5km is increasing from 20 to 40%.
2. Sufficient allocation of Physician in SVP for inhabitants needs	• GP fostering is implementing. • The number of medical personnel is approaching appropriate levels.
3. Sufficiently allocation of Nurses in SVP for inhabitants needs	• The number of patients to one nurse is increased. • It is necessary to secure appropriate number and capability of nurses.
1. Improvement of mother & child care	• The vaccination is implemented, and it contributes to health improvement of children.
2. Improvement of respiratory diseases care	• Since 2000 SVP has increased, the number of diseases became 60%
3. Improvement of gastrointesnal diseases care	• Since 2000, SVP has increased, the number of diseases became 90% and stable.

IV. Sustainability of PHC system reform	• Oblast government budget is allocated to SVPs by priority. • Oblast decree on the per capita budget system was issued in 2001. • Drugs are provided appropriately. • There is a difference between Project and Non Project facilities. • The allocation of medical personnel is un-ballanced between city and rural areas, especially, in the specialized field and O/M. • O/M system including consumables orders system is insufficient. • Sustainability after the Project is doubtful.



4. Improvement of hepatic/biliary care	• It is increasing • It is necessary to educate preventive medicine. • The examination equipment is necessary.
5. Improvement of cardiovascular disease care	• It is increasing. • It is necessary to educate preventive medicine. • The examination equipment is necessary.
1. Sufficient allocation of expenditures for the PHC of total health care budget in Oblasts	• The Oblast government budget is allocated by priority according to the governmental policy (free of charge in PHC level). • It increases from the SVP introduction, and value has exceeded 50%.
2. Sufficient allocation budget of each SVP	• The Oblast decree on the per capita budget system was issued in 2001. • It increases from the SVP introduction, and value is increased 2.7 times.
3. Sufficient allocation of expenditures for personnel to maintain SVPs	• The salary accounts for over 60% of the total budget. • However, O/M staffs are not appointed especially.
4. Sufficient allocation of expenditures for drugs & supplies to SVP	• The satisfaction rate of the drugs provision has exceeded 80%. • There is a gap between Project and Non Project facilities. • There is a case where a lot of drugs are supplied only to CRH because CRH arranges the drug procurement.
5. Sufficient allocation of drugs & supplies budget to SVP	• The budget for the medicine shows the tendency to increase. • There is a gap between Project and Non Project facilities.

6. Cost of 1 visit to SVP	• The budget is 300 sums. It is stably secured. • The amount of budget is absolutely insufficient.
7. Supply/satisfy of drugs to each SVP's request	• Supply of drugs is relatively achieved (satisfaction rate if over 80%) • There is a gap between Project and Non Project facilities.
8. Sufficient allocation of human resources to each SVP	• The allocation of medical personnel is un-balanced between city and rural areas. • Especially, it is in the specialized field.
9. Sufficient provision of equipment to each SVP	• There is an example of not knowing the content and necessity of equipment at the SVP level personnel (Different from site needs) • Field survey for the selection of equipment and training for O/M are necessary. • The doubt in the specifications such as autoclave because of hard water.
10. System and skill/technology of O/M for equipment and facilities	• There is no O/M staffs • Spare parts and consumables order system is insufficient. • Sustainability after the Project is doubtful.

Appendix Table 15.1 Equipment List for General Oblast Hospital

Department	Item	Equipment	Q'ty
1. OPERATING DEPARTMENT			
1A. OPERATING ROOM (THEATRE)	1A - 1	SHADOW LESS OPERATING LIGHT	1
	1A - 2	DETACHABLE OPERATING TABLE	1
	1A - 3	OPERATING MICROSCOPE	1
	1A - 4	ANAESTHESIA APPARATUS WITH VENTILATOR	1
	1A - 5	VENTILATOR (ADULT AND CHILD)	1
	1A - 6	ELECTRO COAGULATOR	1
	1A - 7	ANESTHETIC TROLLEY	1
	1A - 8	INSTRUMENT TROLLEY	1
	1A - 9	INSTRUMENT TRAY STAND	1
	1A - 10	DRESSING DRUM STAND	1
	1A - 11	SUCTION UNIT	1
	1A - 12	KICK BUCKET	1
	1A - 13	WASH BASIN STAND (2-BASIN)	1
	1A - 14	REVOLVING STOOL	1
	1A - 15	MEDICAL REFRIGERATOR	1
	1A - 16	INSTRUMENT CABINET	1
	1A - 17	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	1A - 18	s	1
2. CENTRAL STERILE SUPPLY DEPARTMENT			
2A. CSSD	2A - 1	HIGH PRESSURE STEAM STERILIZER (250L OR MORE)	1
	2A - 2	ULTRASONIC CLEANER	1
	2A - 3	DRYING OVEN	1
	2A - 4	WATER DISTILER 20L/H	1
	2A - 5	HIGH PRESSURE STEAM STERILIZER FOR MEDICINE BOTTLE (200 L OR MORE)	1
	2A - 6	DRESSING DRUM CABINET	1
	2A - 7	INSTRUMENT CABINET	1
3. PHARMACY			
3A. COMPOUNDING ROOM	3A - 1	DISPENSING MEDICINE FOR INFUSION	1
	3A - 2	MEDICAL REFRIGERATOR	1
	3A - 3	MEDICAL FREEZER	1
	3A - 4	METAL CABINET	1
	3A - 5	WATER PURIFIER	1
	3A - 6	WATER BATH	1
	3A - 7	COUNTER BALANCE	1
3B. MANUFACTURING ROOM	3B - 1	MEDICINE DIVIDING AND PACKING MACHINE	1
4. THERAPEUTIC DEPARTMENT			
4A. EXAMINING ROOM	4A - 1	EXAMINING COUCH	1
	4A - 2	STOOL	1
	4A - 3	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	4A - 4	WASH BASIN STAND (2-BASIN)	1
	4A - 5	SPHYGMOMANOMETER	
	4A - 6	EXAMINATION INSTRUMENT SET FOR INTERNAL MEDICINE	
4B. TREATMENT ROOM	4B - 1	EXAMINING COUCH	1
	4B - 3	STOOL	1
	4B - 4	INJECTION DRESSING COUNTER	1
	4B - 5	DRUG CABINET	1
	4B - 6	INSTRUMENT CABINET	1
	4B - 7	INSTRUMENT TROLLEY	1
	4B - 8	INSTRUMENT STERILIZER	1
	4B - 9	REFRIGERATOR	1
	4B - 10	STETHOSCOPE	1
	4B - 11	SPHYGMOMANOMETER	1
	4B - 12	TREATMENT INSTRUMENT SET FOR INTERNAL MEDICINE	1
4C. INFUSION ROOM	4C - 1	EXAMINING COUCH	1
	4C - 2	IRRIGATOR STAND	1
5. PEDIATRICS			

Department	Item	Equipment	Q'ty
5A. EXAMINING ROOM	5A - 1	STOOL	1
	5A - 2	EXAMINING COUCH	1
	5A - 3	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	5A - 4	WASH BASIN STAND (2-BASIN)	1
	5A - 5	EXAMINATION INSTRUMENT SET FOR PEDIATRIC	1
5B. TREATMENT ROOM	5B - 1	EXAMINING COUCH	1
	5B - 2	STOOL	1
	5B - 3	INJECTION DRESSING COUNTER	1
	5B - 4	INSTRUMENT TROLLEY	1
	5B - 5	INFANT DRESSING TABLE	1
	5B - 6	DRUG CABINET	1
	5B - 7	INSTRUMENT CABINET	1
	5B - 8	INSTRUMENT TROLLEY	1
	5B - 9	INSTRUMENT STERILIZER	1
	5B - 10	TREATMENT INSTRUMENT SET FOR PEDIATRIC	1
6. SURGERY			
6A. EXAMINING ROOM	6A - 1	STOOL	1
	6A - 2	EXAMINING COUCH	1
	6A - 3	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	6A - 4	WASH BASIN STAND (2-BASIN)	1
	6A - 5	EXAMINATION INSTRUMENT SET FOR SURGERY	1
6B. TREATMENT ROOM	6B - 1	EXAMINING COUCH	1
	6B - 2	STOOL	1
	6B - 3	INJECTION DRESSING COUNTER	1
	6B - 4	DRUG CABINET	1
	6B - 5	INSTRUMENT CABINET	1
	6B - 6	INSTRUMENT TROLLEY	1
	6B - 7	INSTRUMENT STERILIZER	1
	6B - 8	TREATMENT INSTRUMENT SET FOR SURGERY	1
7. ORTHOPEDICS AND TRAUMA			
7A. EXAMINING ROOM	7A - 1	STOOL	1
	7A - 2	EXAMINING COUCH	1
	7A - 3	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	7A - 4	WASH BASIN STAND (2-BASIN)	1
	7A - 5	EXAMINATION INSTRUMENT SET FOR ORTHOPEDICS	1
7B. TREATMENT ROOM	7B - 1	EXAMINING COUCH	1
	7B - 2	STOOL	1
	7B - 3	INJECTION DRESSING COUNTER	1
	7B - 4	DRUG CABINET	1
	7B - 5	INSTRUMENT CABINET	1
	7B - 6	INSTRUMENT TROLLEY	1
	7B - 7	INSTRUMENT STERILIZER	1
	7B - 8	TREATMENT INSTRUMENT SET FOR ORTHOPEDICS	1
7C. GYPSUM DRESSING ROOM	7C - 1	GYPSUM DRESSING TABLE	1
	7C - 2	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	7C - 3	SPLICE PIECE CABINET	1
	7C - 4	GYPSUM CABINET	1
	7C - 5	INSTRUMENT SET FOR GYPSUM DRESSING	1
8. OBSTETRICS & GYNAECOLOGY			
8A. EXAMINING ROOM	8A - 1	STOOL	1
	8A - 2	EXAMINING COUCH	1
	8A - 3	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	8A - 4	WASH BASIN STAND (2-BASIN)	1
	8A - 5	INSTRUMENT CABINET	1
	8A - 6	INSTRUMENT STERILIZER	1
	8A - 7	EXAMINATION INSTRUMENT SET FOR OBSTETRICS & GYNAECOLOGY	1
8B. GYNAECOLOGICAL EXAMINING ROOM	8B - 1	GYNECOLOGICAL EXAMINING TABLE	1
	8B - 2	GYNECOLOGICAL EXAMINING INSTURUMENT SET	1
	8B - 3	WASH BASIN STAND (2-BASIN)	1

Department	Item	Equipment	Q'ty
	8B - 4	FOOT STOOL	1
	8B - 5	SUCTION UNIT	1
	8B - 6	COLPOSCOPE WITH CAMERA RESEARCH	1
9. UROLOGY			
9A. EXAMINING ROOM	9A - 1	STOOL	1
	9A - 2	EXAMINING COUCH	1
	9A - 3	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	9A - 4	WASH BASIN STAND (2-BASIN)	1
	9A - 5	EXAMINATION INSTRUMENT SET FOR UROLOGY	1
9B. TREATMENT ROOM	9B - 1	EXAMINING COUCH	1
	9B - 2	STOOL	1
	9B - 3	INJECTION DRESSING COUNTER	1
	9B - 4	DRUG CABINET	1
	9B - 5	INSTRUMENT CABINET	1
	9B - 6	INSTRUMENT TROLLEY	1
	9B - 7	INSTRUMENT STERILIZER	1
	9B - 8	TREATMENT INSTRUMENT SET FOR UROLOGY	1
10. DERMATOLOGY			
10A. EXAMINING ROOM	10A - 1	EXAMINING COUCH	1
	10A - 2	STOOL	1
	10A - 3	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	10A - 4	WASH BASIN STAND (2-BASIN)	1
	10A - 5	EXAMINATION INSTRUMENT SET FOR DERMATOLOGY	1
10B. TREATMENT ROOM	10B - 1	EXAMINING COUCH	1
	10B - 2	STOOL	1
	10B - 3	INJECTION DRESSING COUNTER	1
	10B - 4	INSTRUMENT DRESSING TROLLEY	1
	10B - 5	DRUG CABINET	1
	10B - 6	INSTRUMENT CABINET	1
	10B - 7	REFRIGERATOR	1
	10B - 8	OINTMENT TABLE	1
	10B - 9	INSTRUMENT STERILIZER	1
	10B - 10	ELECTRO SURGICAL UNIT FOR DERMOTOLOGY	1
	10B - 11	TREATMENT INSTRUMENT SET FOR DERMATOLOGY	1
10C. TREATMENT ROOM	10C - 1	EXAMINING COUCH	1
	10C - 2	ULTRA RED AND ULTRAVIOLET LAMP	1
11. EAR, NOSE & THROAT			
11A. EXAMINING ROOM	11A - 1	TREATMENT UNIT	1
	11A - 2	TREATMENT CHAIR	1
	11A - 3	WASH BASIN STAND (2-BASIN)	1
	11A - 4	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	11A - 5	INSTRUMENT CABINET	1
	11A - 6	INSTRUMENT STERILIZER	1
	11A - 7	EXAMINATION INSTRUMENT SET FOR ENT	1
11B. TREATMENT CORNER	11B - 1	EXAMINING COUCH	1
	11B - 2	STOOL	1
	11B - 3	NEBULIZER APPARATUS	1
	11B - 4	SUCTION UNIT	1
	11B - 5	TREATMENT INSTRUMENT SET FOR ENT	1
11C. TEST ROOM	11C - 1	ELECTRO RESPONSE AUDIOMETER	1
11D. SOUND PREVENTION ROOM	11D - 1	SOUND PREVENTION UNIT	1
	11D - 2	AUDIOMETER	1
12. OPHTHALMOLOGY			
12A. EXAMINING ROOM, TEST ROOM	12A - 1	SLIT LAMP	1
	12A - 2	FUNDUS CAMERA	1
	12A - 3	PHOTO COAGULATION LASER	1
	12A - 4	ARC PERIMETER	1
	12A - 5	KERATOMETER	1
	12A - 6	TRIAL LENS SET	1

Department	Item	Equipment	Q'ty
	12A - 7	LENS METER	1
	12A - 8	DOCTOR'S CHAIR	1
	12A - 9	EXAMINING COUCH	1
	12A - 10	INSTRUMENT CABINET	1
	12A - 11	EXAMINATION INSTRUMENT SET FOR OPHTHALMOLOGY	1
	12A - 12	EXAMINATION INSTRUMENT SET FOR OPHTHALMOLOGY	1
	12A - 13	EXAMINING COUCH	1
	12A - 14	INSTRUMENT CABINET	1
	12A - 15	EXAMINATION INSTRUMENT SET FOR OPHTHALMOLOGY	1
13. DENTISTRY			
13A. TREATMENT ROOM	13A - 1	DENTAL UNIT	1
	13A - 2	DENTAL CABINET	1
	13A - 3	DOCTOR STOOL'S	1
	13A - 4	ASSISTANT STOOL	1
	13A - 5	TREATMENT INSTRUMENT SET FOR DENTAL	1
13B. X-RAY ROOM	13B - 1	DENTAL X-RAY APPARATUS	1
	13B - 2	AUTOMATIC X-RAY FILM PROCESSOR	1
13C. STERILIZING CORNER	13C - 1	AUTOCLAVE (APPROX. 20L)	1
13D. DENTAL LABORATORY	13D - 1	POLISHING MACHINE	1
	13D - 2	PLASTER MACHINE	1
	13D - 3	CASTING MACHINE	1
	13D - 4	MODEL TREATMENT MACHINE	1
	13D - 5	WAX MACHINE	1
14. EMERGENCY TREATMENT ROOM			
14A. EMERGENCY TREATMENT ROOM	14A - 1	SHADOW LESS OPERATING LIGHT	1
	14A - 2	DRUG CABINET	1
	14A - 3	INSTRUMENT CABINET	1
	14A - 4	MOBILE X-RAY UNIT	1
	14A - 5	STOOL	1
	14A - 6	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	14A - 7	METAL CABINET	1
	14A - 8	EXAMINING COUCH	1
	14A - 9	IRRIGATOR STAND	1
	14A - 10	DEFIBRILLATOR (MOBILE TYPE)	2
	14A - 11	OXYGEN TENT	2
	14A - 12	ANAESTHETIC APPARATUS WITH VENTILATOR	1
	14A - 13	ULTRASONIC NEBULIZER	1
	14A - 14	EMERGENCY CART	2
	14A - 15	EMERGENCY RESUSCIATION EQUIPMENT	2
	14A - 16	ENDOTRACHEAL SET	1
	14A - 17	ELECTROCARDIOGRAPH (3 CH)	1
	14A - 18	TREATMENT INSTRUMENT SET FOR EMERGENCY ROOM	1
15. FUNCTION TEST ROOM			
15A. ELECTROENCEPHALOGRAM ROOM	15A - 1	ELECTROENCEPHALOGRAPH	1
15B. ELECTROCARDIOGRAM ROOM	15B - 1	ELECTROCARDIOGRAPH (3 CH)	1
15C. ULTRASONIC DIAGNOSTIC ROOM	15C - 1	ULTRASONIC DIAGNOSTIC APPARATUS (2 TYPES PROBE, WITHOUT DOPPLER)	1
15D. SPIROMETER ROOM	15D - 1	SPIROMETER	1
16. ENDOSCOPE ROOM			
16A. ENDOSCOPE ROOM	16A - 1	ENDOSCOPIC TABLE	1
	16A - 2	ENDOSCOPIC LIGHT SUPPLY	1
	16A - 3	INSTRUMENT TROLLEY	1
	16A - 4	INSTRUMENT CABINET	1
	16A - 5	FIBERSCOPE CABINET	1
	16A - 6	STOOL	1
	16A - 7	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	16A - 8	METAL CABINET	1
	16A - 9	EXAMINING COUCH	1
	16A - 10	IRRIGATOR STAND	1
	16A - 11	GASTRO CAMERA	1

Department	Item	Equipment	Q'ty
	16A - 12	FIBERDUODENOSCOPE	1
	16A - 13	FIBERCOLONOSCOPE	1
	16A - 14	FIBEROPTIC BRONCHOSCOPE	1
17. CLINICAL LABORATORY			
17A. BLOOD DONOR ROOM	17A - 1	BLOOD DONOR COUNTER	1
	17A - 2	STOOL	1
	17A - 3	INSTRUMENT TROLLEY	1
	17A - 4	INSTRUMENT CABINET	1
	17A - 5	EXAMINING COUCH	1
17B. LABORATORY	17B - 1	FUME HOOD	1
	17B - 2	SHELF	1
	17B - 3	WATER PURIFIER	1
	17B - 4	BIOCHEMICAL ANALYZER	1
	17B - 5	DEEP FREEZER	1
	17B - 6	REFRIGERATOR	1
	17B - 7	HIGH SPEED REFRIGERATED CENTRIFUGE	1
	17B - 8	CENTRIFUGE	1
	17B - 9	WATER BATH	1
	17B - 10	BINOCULAR MICROSCOPE	1
	17B - 11	BALANCE	1
	17B - 12	SPECTROPHOTOMETER	1
	17B - 13	ELECTROLYTE ANALYZER	1
	17B - 14	pH METER	1
	17B - 15	BLOOD GAS ANALYZER	1
	17B - 16	SHAKER	1
	17B - 17	MAGNETIC STIRRER	1
	17B - 18	AUTOMATED URINE ANALYZER	1
	17B - 19	BLOOD CELL COUNTER	1
	17B - 20	PLATELET COUNTER	1
	17B - 21	BLOOD COAGULATION TEST INSTRUMENT	1
	17B - 22	PIPETTE (VARIABLE TYPE)/SET	
	17B - 23	BILIRUBINOMETER	1
	17B - 24	GLUCOSE ANALYZER	1
17C. WASHING AND STERILIZING ROOM	17C - 1	WORK TABLE	1
	17C - 2	ULTRASONIC CLEANER	1
	17C - 3	AUTOCLAVE (APPROX. 20L)	1
	17C - 4	DRY HEAT STERILIZER	1
	17C - 5	CONSTANT TEMPERATURE OVEN	1
	17C - 6	SHELF	1
	17C - 7	WATER PURIFIER	1
18. POST-MORTEM ROOM			
18A. POST-MORTEM ROOM	18A - 1	AUTOPSY TABLE	1
	18A - 2	INSTRUMENT TROLLEY	1
	18A - 3	SHADOWLESS LIGHT	1
	18A - 4	INSTRUMENT CABINET	1
	18A - 5	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	18A - 6	WORK TABLE	1
	18A - 7	MORTUARY REFRIGERATOR	1
	18A - 8	INSTRUMENT SET FOR AUTOPSY	1
18B. PATHOLOGY LABORATORY	18B - 1	CHEMICAL LABORATORY TABLE	1
	18B - 2	SINK UNIT	1
	18B - 3	AUTO-STAIN	1
	18B - 4	DEEP FREEZER	1
	18B - 5	FREEZING MICROTOME	1
	18B - 6	AUTOMATIC MICROTOME KNIFE SHARPNER	1
	18B - 7	VACUUM TISSUE PROCESSOR	1
	18B - 8	PARAFFIN OVEN	1
	18B - 9	STRETCHING HOT PLATE	1
	18B - 10	SHAKER FOR TISSUE FIXATION	1

Department	Item	Equipment	Q'ty
	18B - 11	BINOCULAR MICROSCOPE	2
	18B - 12	CENTRIFUGE	1
	18B - 13	REFRIGERATOR	1
	18B - 14	INCUBATOR	1
	18B - 15	SLIDE CABINET	1
19. X-RAY DEPARTMENT			
19A. TOMOGRAPH & DIAGNOSTIC X-RAY ROOM	19A - 1	FLUOROSCOPY DIAGNOSTIC X-RAY APPARATUS	1
19B. CHEST & DIAGNOSTIC X-RAY ROOM	19B - 1	CHEST STAND DIAGNOSTIC X-RAY APPARATUS	1
19C. MAMMOGRAPHY ROOM	19C - 1	MAMMOGRAPHY UNIT	1
19D. DARK ROOM	19D - 1	AUTOMATIC X-RAY FILM PROCESSOR	1
	19D - 2	CASSETTE EXCHANGE BOX	1
	19D - 3	FILM LOADING DESK	1
	19D - 4	DARK ROOM LAMP	1
19E. THE OTHERS	19E - 1	CASSETTE	1
	19E - 2	INTENSIFYING SCREENS	1
	19E - 3	X-RAY GRID	1
	19E - 4	PROTECTIVE GLOVES	1
	19E - 5	PROTECTIVE APRON	1
	19E - 6	LEAD GLASS	1
	19E - 7	THICKNESS CALIPER	1
	19E - 8	FILM MARKER	1
	19E - 9	PROTECTIVE FLOOR SCREEN	1
	19E - 10	PROTECTIVE GOGGLES	1
	19E - 11	X-RAY FILM PRESERVING BOX	1
	19E - 12	X-RAY FILM KEEPING SHELF	1
	19E - 13	INTERVAL TIMER	1
	19E - 14	FILM CUTTER	1
	19E - 15	FILM HANGER	1
20. REHABILITAITON			
20A. ELECTRO THERAPY ROOM	20A - 1	MICRO-WAVE THERAPY APPARATUS	1
	20A - 2	COMBINATION THERAPEUTIC LAMP	1
	20A - 3	LOW FREQUENCY THERAPY APPARATUS	1
	20A - 4	ULTRASONIC THERAPY APPARATUS	1
21. ICU ROOM			
21A. ICU ROOM	21A - 1	BEDSIDE MONITOR	1
	21A - 2	CENTRAL MONITOR	1
	21A- 3	IRRIGATOR STAND	1
21B. WORKING CORNER, INSTRUMENT STORAGE	21B - 1	INSTRUMENT STERILIZER	1
21C. DIRTY UTILITY	21C - 1	URINALS RACK	1
	21C - 2	BEDPAN WASHER & STERILIZER	1
21D. MEDICAL INSTRUMENTS	21D - 1	RESPIRATOR	1
	21D - 2	OXYGEN TENT	1
	21D - 3	DEFIBRILLATOR (MOBILE TYPE)	1
	21D - 4	MOBILE X-RAY UNIT	1
	21D - 5	OXYMETER	1
	21D - 6	ULTRASONIC NEBULIZER	1
	21D - 7	ELECTROCARDIOGRAPH (3 CH)	1
22. DELIVERY DEPARTMENT			
22A. OBSTETRIC DELIVERY ROOM	22A - 1	SHADOWLESS OPERATING LIGHT (CEILING TYPE)	1
	22A - 2	OBSTETRIC DELIVERY TABLE	1
	22A - 3	IRRIGATOR STAND	1
	22A - 4	FOOT STOOL	1
	22A - 5	INSTRUMENT TROLLEY	1
	22A - 6	INSTRUMENT TRAY STAND	1
	22A - 7	VACUUM EXTRACTOR	1
	22A - 8	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	22A - 9	FETAL INTENSIVE CARE UNIT	1
	22A - 10	VACUUM EXTRACTOR	1
	22A - 11	DRESSING DRUM STAND	1

Department	Item	Equipment	Q'ty
	22A - 12	WASH BASIN STAND (2-BASIN)	1
	22A - 13	INSTRUMENT CABINET	1
	22A - 14	INFANT WARMER	1
	22A - 15	ANAESTHESIA APPARATUS WITH VENTILATOR	1
	22A - 16	INFANT SCALE	1
	22A - 17	INSTRUMENT SET FOR DELIVERY	1
22B. DELIVERY & OPERATING ROOM	22B - 1	SHADOWLESS OPERATING LIGHT	1
	22B - 2	OBSTETRIC DELIVERY TABLE	1
	22B - 3	IRRIGATOR STAND	1
	22B - 4	FOOT STOOL	1
	22B - 5	INSTRUMENT TROLLEY	1
	22B - 6	INSTRUMENT TRAY STAND	1
	22B - 7	VACUUM EXTRACTOR	1
	22B - 8	FETAL INTENSIVE CARE UNIT	2
	22B - 9	FETAL MONITOR	1
	22B - 10	DRESSING DRUM STAND	1
	22B - 11	WASH BASIN STAND (2-BASIN)	1
	22B - 12	ANAESTHESIA APPARATUS WITH VENTILATOR	1
	22B - 13	ELECTRO SURGICAL UNIT	1
	22B - 14	RESUSCITATOR	1
	22B - 15	INSTRUMENT CABINET	1
	22B - 16	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	22B - 17	INSTRUMENT TRAY STAND	1
	22B - 18	MANUAL RESUSCITATOR SET	1
22C. PREPARATION CORNER	23C - 1	INSTRUMENT STERILIZER	1
22D. SCRUB UP CORNER	23D - 1	ULTRA-VIOLET WATER STERILIZER	1
	23D - 2	SOAP DISPENSER	1
	23D - 3	BRUSH STERILIZER BOX	1
23. PREPARATION CORNER			
23A. LABOUR ROOM	23A - 1	LABOUR BED	1
24. NEW BORN NURSERY			
24A. NEW-BORN NURSERY	24A - 1	INFANT BASSINET COT	1
	24A - 2	IRRIGATOR STAND	1
	24A - 3	INFANT DRESSING TABLE	1
	24A - 4	INFANT WARMER	1
	24A - 5	WASH BASIN STAND (2-BASIN)	1
	24A - 6	DIAPHRAGM PUMP	1
24B. MILK KITCHEN	24B - 1	NURSING BOTTLE STERILIZER	1
	24B - 2	NURSING BOTTLE WARMER	1
	24B - 3	REFRIGERATOR	1
24C. LACTATION ROOM	24C - 1	TABLE	1
	24C - 2	DRESSING TABLE	1
	24C - 3	INFANT WEIGHING SCALE	1
	24C - 4	BREAST PUMP	1
24D. BATHING ROOM	24D - 1	INFANT BATH	1
	24D - 2	DRESSING TABLE	1
	24D - 3	WEIGHING SCALE	1
	24D - 4	REFRIGERATOR	1
24E. PREMATURE NURSERY	24E - 1	INFANT INCUBATOR	1
	24E - 2	PHOTTHERAPY UNIT	1
	24E - 3	NEONATAL MONITOR	1
	24E - 4	INSTRUMENT TROLLEY	1
	24E - 5	ULTRASONIC NEBULIZER	1
	24E - 6	RESPIRATOR	1
	24E - 7	WASH BASIN STAND (2-BASIN)	1
24F. NURSE STATION	24F - 1	MEDICAL REFRIGERATOR	1
	24F - 2	INSTRUMENT CABINET	1
	24F - 3	DRUG CABINET	1
	24F - 4	KARTE RACK	1

Department	Item	Equipment	Q'ty
	24F - 5	METAL CABINET	1
	24F - 6	LOCKER	1
	24F - 7	REFRIGERATOR	1
	24F - 8	CUP BOARD	1
25. THE OTHER			
25A. THE OTHER	25A - 1	STRETCHER	1
	25A - 2	WHEEL CHAIR	1
	25A - 3	DRESSING TROLLEY	1
	25A - 4	INSTRUMENT TROLLEY	1
	25A - 5	CHART FILES & X-RAY FILM CART	1
	25A - 6	BODY CLEANING TOWEL ART	1
	25A - 7	HAIR WASHING CART	1
26. AMBULANCE VEICLE			
26A. AMBULANCE VEICLE	26A - 1	EQUIPPED AMBULANCE	1
	26A - 2	EMERGENCY AID KIT FOR AMBULANCE	2
	26A - 3	DEFIBRILLATOR (MOBILE TYPE)	1
	26A - 4	ECG (3CH)	1

Appendix Table 15.2 Equipment List for Central Rayon Hospital

Department	Item	Equipment	Q'ty
1. OPERATING DEPARTMENT			
1A. OPERATING ROOM (THEATRE)	1A - 1	SHADOWLESS OPERATING LIGHT	1
	1A - 2	OPERATING TABLE	1
	1A - 3	ANAESTHESIA APPARATUS WITH VENTILATOR	1
	1A - 4	VENTILATOR (ADULT AND CHILD)	1
	1A - 5	ELECTRO COAGULATOR	1
	1A - 6	ANESTHETIC TROLLEY	1
	1A - 7	INSTRUMENT TROLLEY	1
	1A - 8	INSTRUMENT TRAY STAND	1
	1A - 9	DRESSING DRUM STAND	1
	1A - 10	SUCTION UNIT	1
	1A - 11	KICK BUCKET	1
	1A - 12	WASH BASIN STAND (2-BASIN)	1
	1A - 13	REVOLVING STOOL	1
	1A - 14	MEDICAL REFRIGERATOR	1
	1A - 15	INSTRUMENT CABINET	1
	1A - 16	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	1A - 17	INSTRUMENT SET FOR SURGERY (LARGE SET)	2
2. CENTRAL STERILIZE SUPPLY DEPARTM			
2A. CSSD	2A - 1	HIGH PRESSURE STEAM STERILIZER (250L OR MORE)	1
	2A - 2	ULTRASONIC CLEANER	1
	2A - 3	DRYING OVEN	1
	2A - 4	WATER DISTILER 20L/H	1
	2A - 5	HIGH PRESSURE STEAM STERILIZER FOR MEDICINE BOTTLE (200L OR MORE)	1
	2A - 6	DRESSING DRUM CABINET	1
	2A - 7	INSTRUMENT CABINET	1
3. PHARMACY			
3A. COMPOUNDING ROOM	3A - 1	DISPENSING MEDICINE FOR INFUSION	1
	3A - 2	MEDICAL REFRIGERATOR	1
	3A - 3	MEDICAL FREEZER	1
	3A - 4	METAL CABINET	1
	3A - 5	WATER PURIFIER	1
	3A - 6	WATER BATH	1
	3A - 7	COUNTER BALANCE	1
3B. MANUFACTURING ROOM	3B - 1	MEDICINE DIVIDING AND PACKING MACHINE	1
4. THERAPEUTIC DEPARTMENT			
4A. EXAMINING ROOM	4A - 1	EXAMINING COUCH	1
	4A - 2	STOOL	1
	4A - 3	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	4A - 4	WASH BASIN STAND (2-BASIN)	1
	4A - 5	SPHYGMOMANOMETER	1
	4A - 6	EXAMINATION INSTRUMENT SET FOR INTERNAL MEDICINE	1
4B. TREATMENT ROOM	4B - 1	EXAMINING COUCH	1
	4B - 2	STOOL	1
	4B - 3	INJECTION DRESSING COUNTER	1
	4B - 4	DRUG CABINET	1
	4B - 5	INSTRUMENT CABINET	1
	4B - 6	INSTRUMENT TROLLEY	1
	4B - 7	INSTRUMENT STERILIZER	1
	4B - 8	REFRIGERATOR	1
	4B - 9	STETHOSCOPE	1
	4B - 10	SPHYGMOMANOMETER	1
	4B - 11	TREATMENT INSTRUMENT SET FOR INTERNAL MEDICINE	2
4C. INFUSION ROOM	4C - 1	EXAMINING COUCH	1
5. PEDIATRICS			
5A. EXAMINING ROOM	5A - 1	STOOL	1
	5A - 2	EXAMINING COUCH	1
	5A - 3	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	5A - 4	WASH BASIN STAND (2-BASIN)	1
	5A - 5	EXAMINATION INSTRUMENT SET FOR PEDIATRIC	1
5B. TREATMENT ROOM	5B - 1	EXAMINING COUCH	1
	5B - 2	STOOL	1
	5B - 3	INJECTION DRESSING COUNTER	1
	5B - 4	INSTRUMENT TROLLEY	1
	5B - 5	INFANT DRESSING TABLE	1
	5B - 6	DRUG CABINET	1
	5B - 7	INSTRUMENT CABINET	1
	5B - 8	INSTRUMENT TROLLEY	1
	5B - 9	INSTRUMENT STERILIZER	1

Department	Item	Equipment	Q'ty
	5B - 10	TREATMENT INSTRUMENT SET FOR PEDIATRIC	1
6. SURGERY			
6A. EXAMINING ROOM	6A - 1	STOOL	1
	6A - 2	EXAMINING COUCH	1
	6A - 3	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	6A - 4	WASH BASIN STAND (2-BASIN)	1
	6A - 5	EXAMINATION INSTRUMENT SET FOR SURGERY	1
6B. TREATMENT ROOM	6B - 1	EXAMINING COUCH	1
	6B - 2	STOOL	1
	6B - 3	INJECTION DRESSING COUNTER	1
	6B - 4	DRUG CABINET	1
	6B - 5	INSTRUMENT CABINET	1
	6B - 6	INSTRUMENT TROLLEY	1
	6B - 7	INSTRUMENT STERILIZER	1
	6B - 8	TREATMENT INSTRUMENT SET FOR SURGERY	1
7. ORTHOPEDICS AND TRAUMA			
7A. EXAMINING ROOM	7A - 1	STOOL	1
	7A - 2	EXAMINING COUCH	1
	7A - 3	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	7A - 4	WASH BASIN STAND (2-BASIN)	1
	7A - 5	EXAMINATION INSTRUMENT SET FOR ORTHOPEDICS	1
7B. TREATMENT ROOM	7B - 1	EXAMINING COUCH	1
	7B - 2	STOOL	1
	7B - 3	INJECTION DRESSING COUNTER	1
	7B - 4	DRUG CABINET	1
	7B - 5	INSTRUMENT CABINET	1
	7B - 6	INSTRUMENT TROLLEY	1
	7B - 7	INSTRUMENT STERILIZER	1
	7B - 8	TREATMENT INSTRUMENT SET FOR ORTHOPEDICS	1
7C. GYPSUM DRESSING ROOM	7C - 1	GYPSUM DRESSING TABLE	1
	7C - 2	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	7C - 3	GYPSUM CABINET	1
	7C - 4	INSTRUMENT SET FOR GYPSUM DRESSING	1
8. OBSTETRICS & GYNAECOLOGY			
8A. EXAMINING ROOM	8A - 1	STOOL	1
	8A - 2	EXAMINING COUCH	1
	8A - 3	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	8A - 4	WASH BASIN STAND (2-BASIN)	1
	8A - 5	INSTRUMENT CABINET	1
	8A - 6	INSTRUMENT STERILIZER	1
	8A - 7	EXAMINATION INSTRUMENT SET FOR OBSTETRICS & GYNAECOLOGY	1
8B. GYNAECOLOGICAL EXAMINING ROOM	*8B - 1*	*GYNECOLOGICAL EXAMINING TABLE*	1
	8B - 2	GYNECOLOGICAL EXAMINING INSTURUMENT SET	1
	8B - 3	WASH BASIN STAND (2-BASIN)	1
	8B - 4	FOOT STOOL	1
	8B - 5	SUCTION UNIT	1
	8B - 6	COLPOSCOPE WITH CAMERA RESEARCH	1
9. UROLOGY			
9A. EXAMINING ROOM	9A - 1	STOOL	1
	9A - 2	EXAMINING COUCH	1
	9A - 3	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	9A - 4	WASH BASIN STAND (2-BASIN)	1
	9A - 5	EXAMINATION INSTRUMENT SET FOR UROLOGY	1
9B. TREATMENT ROOM	9B - 1	EXAMINING COUCH	1
	9B - 2	STOOL	1
	9B - 3	INJECTION DRESSING COUNTER	1
	9B - 4	DRUG CABINET	1
	9B - 5	INSTRUMENT CABINET	1
	9B - 6	INSTRUMENT TROLLEY	1
	9B - 7	INSTRUMENT STERILIZER	1
	9B - 8	TREATMENT INSTRUMENT SET FOR UROLOGY	1
10. DERMATOLOGY			
10A. EXAMINING ROOM	10A - 1	EXAMINING COUCH	1
	10A - 2	STOOL	1
	10A - 3	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	10A - 4	WASH BASIN STAND (2-BASIN)	1
	10A - 5	EXAMINATION INSTRUMENT SET FOR DERMATOLOGY	1
10B. TREATMENT ROOM	10B - 1	EXAMINING COUCH	1
	10B - 2	STOOL	1

Department	Item	Equipment	Qty
	10B - 3	INJECTION DRESSING COUNTER	1
	10B - 4	INSTRUMENT DRESSING TROLLEY	1
	10B - 5	DRUG CABINET	1
	10B - 6	INSTRUMENT CABINET	1
	10B - 7	REFRIGERATOR	1
	10B - 8	OINTMENT TABLE	1
	10B - 9	INSTRUMENT STERILIZER	1
	10B - 10	ELECTRO SURGICAL UNIT FOR DERMATOLOGY	1
	10B - 11	TREATMENT INSTRUMENT SET FOR DERMATOLOGY	1
10C. TREATMENT ROOM	10C - 1	EXAMINING COUCH	1
	10C - 2	ULTRA RED AND ULTRAVIOLET LAMP	1
11. EAR. NOSE & THROAT			
11A. EXAMINING ROOM	11A - 1	TREATMENT UNIT	1
	11A - 2	TREATMENT CHAIR	1
	11A - 3	WASH BASIN STAND (2-BASIN)	1
	11A - 4	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	11A - 5	INSTRUMENT CABINET	1
	11A - 6	INSTRUMENT STERILIZER	1
	11A - 7	EXAMINATION INSTRUMENT SET FOR ENT	1
11B. TREATMENT CORNER	11B - 1	EXAMINING COUCH	1
	11B - 2	STOOL	1
	11B - 3	NEBULIZER APPARATUS	1
	11B - 4	SUCTION UNIT	1
	11B - 5	TREATMENT INSTRUMENT SET FOR ENT	1
12. OPHTHALMOLOGY			
12A. EXAMINING ROOM, TEST ROOM	12A - 1	SLIT LAMP	1
	12A - 2	FUNDUS CAMERA	1
	12A - 3	AUTO TONOGRAPHY	1
	12A - 4	ARC PERIMETER	1
	12A - 5	KERATOMETER	1
	12A - 6	TRIAL LENS SET	1
	12A - 7	LENS METER	1
	12A - 8	EXAMINING COUCH	1
	12A - 9	INSTRUMENT CABINET	1
	12A - 10	EXAMINATION INSTRUMENT SET FOR OPHTHALMOLOGY	1
13. DENTISTRY			
13A. TREATMENT ROOM	13A - 1	DENTAL UNIT	1
	13A - 2	DENTAL CABINET	1
	13A - 3	DOCTOR'S STOOL	1
	13A - 4	ASSISTANT STOOL	1
	13A - 5	TREATMENT INSTRUMENT SET FOR DENTAL	1
13B. X-RAY ROOM	13B - 1	DENTAL X-RAY APPARATUS	1
	13B - 2	AUTOMATIC X-RAY FILM PROCESSOR	1
13C. STERILIZING CORNER	13C - 1	AUTO CLAVE (APPROX. 20L)	1
13D. DENTAL LABORATORY	13D - 1	POLISHING MACHINE	1
	13D - 2	PLASTER MACHINE	1
	13D - 3	CASTING MACHINE	1
	13D - 4	MODEL TREATMENT MACHINE	1
	13D - 5	WAX MACHINE	1
14. EMERGENCY TREATMENT ROOM			
14A. EMERGENCY TREATMENT ROOM	14A - 1	SHADOWLESS OPERATING LIGHT (MOBILE)	1
	14A - 2	DRUG CABINET	1
	14A - 3	INSTRUMENT CABINET	1
	14A - 5	STOOL	1
	14A - 6	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	14A - 7	METAL CABINET	1
	14A - 8	EXAMINING COUCH	1
	14A - 9	IRRIGATOR STAND	1
	14A - 10	DEFIBRILLATOR (MOBILE TYPE)	2
	14A - 11	OXYGEN TENT	1
	14A - 12	ANAESTHESIA APPARATUS WITH VENTILATOR	1
	14A - 13	ULTRASONIC NEBULIZER	1
	14A - 14	EMERGENCY CART	1
	14A - 15	EMERGENCY RESUSCIATION EQUIPMENT	1
	14A - 16	ENDOTRACHEAL SET	1
	14A - 17	ELECTROCARDIOGRAPH (3 CH)	2
	14A - 18	TREATMENT INSTRUMENT SET FOR EMERGENCY ROOM	2
15. FUNCTION TEST ROOM			
15A. ELECTROENCEPHALOGRAM ROOM	15A - 1	ELECTROENCEPHALOGRAPH	1
15B. ELECTROCARDIOGRAM ROOM	15B - 1	ELECTROCARDIOGRAPH (3 CH)	1
15C. ULTRASONIC DIAGNOSTIC ROOM	15C - 1	ULTRASONIC DIAGNOSTIC APPARATUS (CONVEX AND LINER PROBE, B/W, WITHOUT DOPPLER)	1

Department	Item	Equipment	Q'ty
16. ENDOSCOPE ROOM			
16A. ENDOSCOPE ROOM	16A - 1	ENDOSCOPIC TABLE	1
	16A - 2	ENDOSCOPIC LIGHT SUPPLY	1
	16A - 3	INSTRUMENT TROLLEY	1
	16A - 4	INSTRUMENT CABINET	1
	16A - 5	FIBERSCOPE CABINET	1
	16A - 6	STOOL	1
	16A - 7	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	16A - 8	METAL CABINET	1
	16A - 9	EXAMINING COUCH	1
	16A - 10	IRRIGATOR STAND	1
	16A - 11	GASTRO CAMERA	1
	16A - 12	FIBERCOLONOSCOPE	1
	16A - 13	FIBEROPTIC BRONCHOSCOPE	1
17. CLINICAL LABORATORY			
17B. LABORATORY	17A - 1	FUME HOOD	1
	17A - 2	SHELF	1
	17A - 3	WATER PURIFIER	1
	17A - 4	BIOCHEMICAL ANALYZER	1
	17A - 5	DEEP FREEZER	1
	17A - 6	REFRIGERATOR	1
	17A - 7	CENTRIFUGE	1
	17A - 8	WATER BATH	1
	17A - 9	BINOCULAR MICROSCOPE	1
	17A - 10	BALANCE	1
	17A - 11	SPECTROPHOTOMETER	1
	17A - 12	ELECTROLYTE ANALYZER	1
	17A - 13	COULOMETRIC TITRATION	1
	17A - 14	pH METER	1
	17A - 15	BLOOD GAS ANALYZER	1
	17A - 16	SHAKER	1
	17A - 17	MAGNETIC STIRRER	1
	17A - 18	AUTOMATED URINE ANALYZER	1
	17A - 19	BLOOD CELL COUNTER	1
	17A - 20	PLATELET COUNTER	1
	17A - 21	BLOOD COAGULATION TEST INSTRUMENT	1
	17A - 22	BILIRUBINOMETER	1
	17A - 23	GLUCOSE ANALYZER	1
17E. WASHING AND STERILIZING ROOM	17B - 1	ULTRASONIC CLEANER	1
	17B - 2	AUTO CLAVE (APPROX. 20L)	1
	17B - 3	DRY HEAT STERILIZER	1
	17B - 4	CONSTANT TEMPERATURE OVEN	1
	17B - 5	SHELF	1
	17B - 6	WATER PURIFIER	1
18. X-RAY DEPARTMENT			
18A. TOMOGRAPH & DIAGNOSTIC X-RAY RO	18A - 1	*FLUOROSCOPY DIAGNOSTIC X-RAY APPARATUS*	1
18B. CHEST & DIAGNOSTIC X-RAY ROOM	18B - 1	CHEST STAND DIAGNOSTIC X-RAY APPARATUS	1
18C. DARK ROOM	18C - 1	AUTOMATIC X-RAY FILM PROCESSOR	1
	18C - 2	CASSETTE EXCHANGE BOX	1
	18C - 3	FILM LOADING DESK	1
	18C - 4	DARK ROOM LAMP	1
19A. THE OTHERS			
	19A - 1	CASSETTE	1
	19A - 2	INTENSIFYING SCREENS	1
	19A - 3	X-RAY GRID	1
	19A - 4	PROTECTIVE GLOVES	1
	19A - 5	*PROTECTIVE APRON*	1
	19A - 7	LEAD GLASS	1
	19A - 8	THICKNESS CALIPER	1
	19A - 9	FILM MARKER	1
	19A - 10	PROTECTIVE FLOOR SCREEN	1
	19A - 11	PROTECTIVE GOGGLES	1
	19A - 12	X-RAY FILM PRESERVING BOX	1
	19A - 13	X-RAY FILM KEEPING SHELF	1
	19A - 14	INTERVAL TIMER	1
	19A - 15	FILM CUTTER	1
19A - 20	19A - 16	FILM HANGER	1
20. REHABILITATION			
20A. ELECTRO THERAPY ROOM	20A - 1	MICRO-WAVE THERAPY APPARATUS	1
	20A - 2	COMBINATION THERAPEUTIC LAMP	1
	20A - 3	LOW FREQUENCY THERAPY APPARATUS	1
	20A - 4	ULTRASONIC THERAPY APPARATUS	1
21. ICU ROOM			
21A. ICU ROOM	21A - 1	BEDSIDE MONITOR	1
	21A - 2	CENTRAL MONITOR	1
	21A - 3	IRRIGATOR STAND	1

Department	Item	Equipment	Q'ty
21B. WORKING CORNER, INSTRUMENT STO	21B - 1	INSTRUMENT STERILIZER	1
21C. DIRTY UTILITY	21C - 1	URINALS RACK	1
	21C - 2	BEDPAN WASHER & STERILIZER	1
21D. MEDIDAL INSTRUMENTS	21D - 1	RESPIRATOR	1
21D - 2	21D - 2	OXYGEN TENT	1
21D - 3	21D - 3	DEFIBRILLATOR (MOBILE TYPE)	2
21D - 4	21D - 4	OXYMETER	1
21D - 5	21D - 5	ULTRASONIC NEBULIZER	1
21D - 6	21D - 6	ELECTROCARDIOGRAPH (3 CH)	2
22. DELIVERY DEPARTMENT			
22A. OBSTETRIC DELIVERY ROOM	22A - 1	SHADOWLESS OPERATING LIGHT (CEILING TYPE)	1
	22A - 2	OBSTETRIC DELIVERY TABLE	1
	22A - 3	IRRIGATOR STAND	1
	22A - 4	FOOT STOOL	1
	22A - 5	INSTRUMENT TROLLEY	1
	22A - 6	INSTRUMENT TRAY STAND	1
	22A - 7	VACUUM EXTRACTOR	1
	22A - 8	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	22A - 9	FETAL INTENSIVE CARE UNIT	1
	22A - 10	VACUUM EXTRACTOR	1
	22A - 11	DRESSING DRUM STAND	1
	22A - 12	WASH BASIN STAND (2-BASIN)	1
	22A - 13	INSTRUMENT CABINET	1
	22A - 14	INFANT WARMER	1
	22A - 15	ANAESTHESIA APPARATUS WITH VENTILATOR	1
	22A - 16	INFANT SCALE	1
	22A - 17	INSTRUMENT SET FOR DELIVERY	1
22B. DELIVERY & OPERATING ROOM	22B - 1	SHADOWLESS OPERATING LIGHT	1
	22B - 2	OBSTETRIC DELIVERY TABLE	1
	22B - 3	IRRIGATOR STAND	1
	22B - 4	FOOT STOOL	1
	22B - 5	INSTRUMENT TROLLEY	1
	22B - 6	INSTRUMENT TRAY STAND	1
	22B - 7	VACUUM EXTRACTOR	1
	22B - 8	FETAL MONITOR	2
	22B - 9	DRESSING DRUM STAND	1
	22B - 10	WASH BASIN STAND (2-BASIN)	1
	22B - 11	ANAESTHESIA APPARATUS WITH VENTILATOR	1
	22B - 12	ELECTRO SURGICAL UNIT	1
	22B - 13	RESUSCITATOR	1
	22B - 14	INSTRUMENT CABINET	1
	22B - 15	X-RAY FILM ILLUMINATOR (2xFILMS)	1
	22B - 16	INSTRUMENT TRAY STAND	1
	22B - 17	MANUAL RESUSCITATOR SET	1
22C. PREPARATION CORNER	22C - 1	INSTRUMENT STERILIZER	1
22D. SCRUB UP CORNER	22D - 1	ULTRA-VIOLET WATER STERILIZER	1
	22D - 2	SOAP DISPENSER	1
	22D - 3	BRUSH STERILIZER BOX	1
23. PREPARATION CORNER			
23A. LABOUR ROOM	23A- 1	LABOUR BED	1
24. NEW BORN NURSERY ROOM			
24A. NEW-BORN NURSERY ROOM	24A - 1	INFANT BASSINET COT	1
	24A - 2	IRRIGATOR STAND	1
	24A - 3	INFANT DRESSING TABLE	1
	24A - 4	INFANT WARMER	1
	24A - 5	WASH BASIN STAND (2-BASIN)	1
	24A - 6	DIAPHRAGM PUMP	1
24B. MILK KITCHEN	24B - 1	NURSING BOTTLE STERILIZER	1
	24B - 2	NURSING BOTTLE WARMER	1
	24B - 3	REFRIGERATOR	1
24C. LACTATION ROOM	24C - 1	TABLE	1
	24C - 2	DRESSING TABLE	1
	24C - 3	INFANT WEIGHING SCALE	1
	24C - 4	BREAST PUMP	1
24D. BATHING ROOM	24D - 1	INFANT BATH	1
	24D - 2	DRESSING TABLE	1
	24D - 3	WEIGHING SCALE	1
24E. PREMATURE NURSERY	24E - 1	INFANT INCUBATOR	1
	24E - 2	PHOTOTHERAPY UNIT	1
	24E - 3	NEONATAL MONITOR	1
	24E - 4	INSTRUMENT TROLLEY	1
	24E - 5	ULTRASONIC NEBULIZER	1

Department	Item	Equipment	Q'ty
	24E - 6	RESPIRATOR	1
	24E - 7	WASH BASIN STAND (2-BASIN)	1
24F. NURSE STATION	24F - 1	MEDICAL REFRIGERATOR	1
	24F - 2	INSTRUMENT CABINET	1
	24F - 3	DRUG CABINET	1
	24F - 4	KARTE RACK	1
	24F - 5	METAL CABINET	1
	24F - 6	LOCKER	1
	24F - 7	REFRIGERATOR	1
	24F - 8	CUP BOARD	1
25A. THE OTHER	25A - 1	STRETCHER	1
	25A - 2	WHEEL CHAIR	1
	25A - 3	DRESSING TROLLEY	1
	25A - 4	INSTRUMENT TROLLEY	1
	25A - 5	CHART FILES & X-RAY FILM CART	1
	25A - 6	HAIR WASHING CART	1
26A. AMBULANCE VEHICLE	26A - 1	EQUIPPED AMBULANCE	1
	26A - 2	EMERGENCY AID KIT FOR AMBULANCE	2
	26A - 3	DEFIBRILLATOR (MOBILE TYPE)	1
	26A - 4	ECG (3 CH)	1

Appendix Table 15.3 Recommended Essential Drug List for PHC Level

	Name	Form	Unit
1	Acetylsalicilic acid	Tab	500mg
2	Paracetamol	tab	500mg
3	Aminophyllin	Amp	25mg/ml, 10ml
4	Salbutamol	Inhaler	0.1mg/dose
5	Ampicillin	Bottle	0.5g
6	Co-trimoxazole	tab	480mg
7	Procain Benzylpenicillin	vial	3MU/1MU
8	Chloramphenicol	tab	250mg
9	Amoxycillin	tab	250mg
10	Amoxycillin	Sus	50mg/ml, 100ml
11	Metronidazol	tab	200-250mg
12	Promethazine	Amp	25mg/ml, 2ml
13	Glucose	Bottle	5%, 500ml
14	NaCl solution	Bottle	5ml
15	Trinitroglicerine	Tab	0.5mg
16	Enalapril	Tab	100mg
17	Proplanolol	Tab	40mg
18	Digoxin	Amp	0.25mg, 1ml
19	Adrenalin	Amp	10%
20	Furocemid	Amp	20mg/2ml
21	Insulin	Bottle	40ED/ml, 10ml
22	Alminum hydroxide	Sus	500mg, 170ml
23	Senna	tab	7.5mg
24	Oxytocin	Amp	1ml, 10ED
25	Oral Rehydration Salt	Packet	1 dosage
26	Ferrous salt + Folic acid	tab	60/0.25mg
27	Ascorbic acid	tab	50mg/100mg
28	Prednisolone	Amp	60mg, 1ml
29	Dexamethasone	Amp	4-5mg/ml, 1ml
30	Water for injection	Bottle	10ml
31	Lidcain	Amp	10% 2ml
32	Tetracycline	Ointment	1%, 5g
33	Ethanol	Bottle	70%, 50ml
34	Iodine	Bottle	1%, 50ml
35	Nystatin	tab	500U
36	Piperazine	tab	100mg
37	Metoclopropamid	amp	5mg/ml, 2ml
38	Pyridoxine hydrochloride	tab	
39	Cyanocobalamin (Hydroxycobalamin)	inj	1mg/ml

Appendix Table 16.1 Equipment List of Priority Program for Central Rayon Hospital

Department	Equipment	Q'ty
1. OPERATING DEPARTMENT		
1A. OPERATING ROOM (THEATRE)	SHADOWLESS OPERATING LIGHT	1
1A. OPERATING ROOM (THEATRE)	OPERATING TABLE	1
1A. OPERATING ROOM (THEATRE)	ANAESTHESIA APPARATUS WITH VENTILATOR	1
1A. OPERATING ROOM (THEATRE)	VENTILATOR (ADULT AND CHILD)	1
1A. OPERATING ROOM (THEATRE)	ELECTRO COAGULATOR	1
1A. OPERATING ROOM (THEATRE)	SUCTION UNIT	1
1A. OPERATING ROOM (THEATRE)	MEDICAL REFRIGERATOR	1
1A. OPERATING ROOM (THEATRE)	X-RAY FILM ILLUMINATOR (2xFILMS)	1
1A. OPERATING ROOM (THEATRE)	INSTRUMENT SET FOR SURGERY (LARGE SET)	2
2. CENTRAL STERILIZE SUPPLY DEPARTMENT		
2A. CSSD	HIGH PRESSURE STEAM STERILIZER (250L OR MORE)	1
2A. CSSD	ULTRASONIC CLEANER	1
2A. CSSD	DRYING OVEN	1
3. EMERGENCY TREATMENT ROOM		
3A. EMERGENCY TREATMENT ROOM	SHADOWLESS OPERATING LIGHT (MOBILE)	1
3A. EMERGENCY TREATMENT ROOM	X-RAY FILM ILLUMINATOR (2xFILMS)	1
3A. EMERGENCY TREATMENT ROOM	DEFIBRILLATOR (MOBILE TYPE)	1
3A. EMERGENCY TREATMENT ROOM	OXYGEN TENT	1
3A. EMERGENCY TREATMENT ROOM	ANAESTHESIA APPARATUS WITH VENTILATOR	1
3A. EMERGENCY TREATMENT ROOM	ULTRASONIC NEBULIZER	1
3A. EMERGENCY TREATMENT ROOM	EMERGENCY RESUSCIATION EQUIPMENT	1
3A. EMERGENCY TREATMENT ROOM	ENDOTRACHEAL SET	1
3A. EMERGENCY TREATMENT ROOM	ELECTROCARDIOGRAPH (6 CH)	1
3A. EMERGENCY TREATMENT ROOM	TREATMENT INSTRUMENT SET FOR EMERGENCY ROOM	1
4. FUNCTION TEST ROOM		
4A. ELECTROENCEPHALOGRAM ROOM	ELECTROENCEPHALOGRAPH	1
4B. ELECTROCARDIOGRAM ROOM	ELECTROCARDIOGRAPH (6 CH)	1
4C. ULTRASONIC DIAGNOSTIC ROOM	ULTRASONIC DIAGNOSTIC APPARATUS (2 TYPES PROBE, WITHOUT DOPPLER)	1
5. ENDOSCOPE ROOM		
5A. ENDOSCOPE ROOM	ENDOSCOPIC TABLE	1
5A. ENDOSCOPE ROOM	ENDOSCOPIC LIGHT SUPPLY	1
5A. ENDOSCOPE ROOM	GASTRO CAMERA	1
5A. ENDOSCOPE ROOM	FIBERCOLONOSCOPE	1
5A. ENDOSCOPE ROOM	FIBEROPTIC BRONCHOSCOPE	1
6. CLINICAL LABORATORY		
6A. LABORATORY	WATER PURIFIER	1
6A. LABORATORY	BIOCHEMICAL ANALYZER	1
6A. LABORATORY	DEEP FREEZER	1
6A. LABORATORY	REFRIGERATOR	1
6A. LABORATORY	CENTRIFUGE	1
6A. LABORATORY	BINOCULAR MICROSCOPE	1
6A. LABORATORY	SPECTROPHOTOMETER	1
6A. LABORATORY	pH METER	1
6A. LABORATORY	BLOOD GAS ANALYZER	1
6A. LABORATORY	AUTOMATED URINE ANALYZER	1
6A. LABORATORY	BLOOD CELL COUNTER	1
6A. LABORATORY	PLATELET COUNTER	1
7. X-RAY DEPARTMENT		
7A. TOMOGRAPH & DIAGNOSTIC X-RAY ROOM	FLUOROSCOPY DIAGNOSTIC X-RAY APPARATUS	1
7B. CHEST & DIAGNOSTIC X-RAY ROOM	GENERAL DIAGNOSTIC X-RAY APPARATUS	1
7C. DARK ROOM	AUTOMATIC X-RAY FILM PROCESSOR	1
7D. THE OTHERS	PROTECTIVE KITS	1
8. ICU ROOM		
8A. ICU ROOM	BEDSIDE MONITOR	1
8B. MEDIDAL INSTRUMENTS	RESPIRATOR	1
8B. MEDIDAL INSTRUMENTS	OXYGEN TENT	1
8B. MEDIDAL INSTRUMENTS	DEFIBRILLATOR (MOBILE TYPE)	1
8B. MEDIDAL INSTRUMENTS	OXYMETER	1
8B. MEDIDAL INSTRUMENTS	ULTRASONIC NEBULIZER	1
8B. MEDIDAL INSTRUMENTS	ELECTROCARDIOGRAPH (6 CH)	1
9. DELIVERY DEPARTMENT		
9A. OBSTETRIC DELIVERY ROOM	SHADOWLESS OPERATING LIGHT (CEILING TYPE)	1
9A. OBSTETRIC DELIVERY ROOM	OBSTETRIC DELIVERY TABLE	1
9A. OBSTETRIC DELIVERY ROOM	VACUUM EXTRACTOR	1
9A. OBSTETRIC DELIVERY ROOM	FETAL INTENSIVE CARE UNIT	1

Department	Equipment	Q'ty
9A. OBSTETRIC DELIVERY ROOM	ANAESTHESIA APPARATUS WITH VENTILATOR	1
9A. OBSTETRIC DELIVERY ROOM	INFANT SCALE	1
9A. OBSTETRIC DELIVERY ROOM	INSTRUMENT SET FOR DELIVERY	1
9B. DELIVERY & OPERATING ROOM	ELECTRO SURGICAL UNIT	1
9B. DELIVERY & OPERATING ROOM	RESUSCITATOR	1
10. NEW BORN NURSERY ROOM		
10A. NEW-BORN NURSERY ROOM	INFANT WARMER	1
10B. MILK KITCHEN	REFRIGERATOR	1
10C. PREMATURE NURSERY	INFANT INCUBATOR	1
10C. PREMATURE NURSERY	PHOTOTHERAPY UNIT	1
10C. PREMATURE NURSERY	NEONATAL MONITOR	1
10C. PREMATURE NURSERY	ULTRASONIC NEBULIZER	1
10C. PREMATURE NURSERY	RESPIRATOR	1

Appendix Table 16.2 Equipment List of Priority Program for General Oblast Hospital

Department	Equipment	Q'ty
1. OPERATING DEPARTMENT		
1A. OPERATING ROOM (THEATRE)	SHADOW LESS OPERATING LIGHT	1
	DETACHABLE OPERATING TABLE	1
	OPERATING MICROSCOPE	1
	ANAESTHESIA APPARATUS WITH VENTILATOR	1
	VENTILATOR (ADULT AND CHILD)	1
	ELECTRO COAGULATOR	1
	ANESTHETIC TROLLEY	1
	SUCTION UNIT	1
	MEDICAL REFRIGERATOR	1
	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	INSTRUMENT SET FOR SURGERY (LARGE SET)	1
2. CENTRAL STERILE SUPPLY		
2A. CSSD	HIGH PRESSURE STEAM STERILIZER (250L OR MORE)	1
	ULTRASONIC CLEANER	1
	DRYING OVEN	1
	WATER DISTILER 20L/H	1
3. PHARMACY		
3A. COMPOUNDING ROOM	MEDICAL REFRIGERATOR	1
	MEDICAL FREEZER	1
	WATER PURIFIER	1
	COUNTER BALANCE	1
4. THERAPEUTIC DEPARTMENT		
4A. EXAMINING ROOM	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	SPHYGMOMANOMETER	
	EXAMINATION INSTRUMENT SET FOR INTERNAL MEDICINE	
4B. TREATMENT ROOM	REFRIGERATOR	1
	STETHOSCOPE	1
	SPHYGMOMANOMETER	1
	TREATMENT INSTRUMENT SET FOR INTERNAL MEDICINE	1
5. PEDIATRICS		
5A. EXAMINING ROOM	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	EXAMINATION INSTRUMENT SET FOR PEDIATRIC	1
5B. TREATMENT ROOM	INSTRUMENT STERILIZER	1
	TREATMENT INSTRUMENT SET FOR PEDIATRIC	1
6. SURGERY		
6A. EXAMINING ROOM	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	EXAMINATION INSTRUMENT SET FOR SURGERY	1
6B. TREATMENT ROOM	INSTRUMENT STERILIZER	1
	TREATMENT INSTRUMENT SET FOR SURGERY	1
7. ORTHOPEDICS AND TRAUMA		
7A. EXAMINING ROOM	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	EXAMINATION INSTRUMENT SET FOR ORTHOPEDICS	1
7B. TREATMENT ROOM	INSTRUMENT STERILIZER	1
	TREATMENT INSTRUMENT SET FOR ORTHOPEDICS	1
7C. GYPSUM DRESSING ROOM	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	INSTRUMENT SET FOR GYPSUM DRESSING	1
8. OBSTETRICS & GYNAECOLOGY		
8A. EXAMINING ROOM	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	INSTRUMENT STERILIZER	1
	EXAMINATION INSTRUMENT SET FOR OBSTETRICS & GYNAECOLOGY	1
8B. GYNAECOLOGICAL EXAMINING	GYNECOLOGICAL EXAMINING TABLE	1
	GYNECOLOGICAL EXAMINING INSTURUMENT SET	1
	SUCTION UNIT	1
	COLPOSCOPE WITH CAMERA RESEARCH	1
9. UROLOGY		
9A. EXAMINING ROOM	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	EXAMINATION INSTRUMENT SET FOR UROLOGY	1
9B. TREATMENT ROOM	INSTRUMENT STERILIZER	1
	TREATMENT INSTRUMENT SET FOR UROLOGY	1

Department	Equipment	Q'ty
10. DERMATOLOGY		
10A. EXAMINING ROOM	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	EXAMINATION INSTRUMENT SET FOR DERMATOLOGY	1
10B. TREATMENT ROOM	REFRIGERATOR	1
	INSTRUMENT STERILIZER	1
	ELECTRO SURGICAL UNIT FOR DERMOTOLOGY	1
	TREATMENT INSTRUMENT SET FOR DERMATOLOGY	1
10C. TREATMENT ROOM	ULTRA RED AND ULTRAVIOLET LAMP	1
11. EAR. NOSE & THROAT		
11A. EXAMINING ROOM	TREATMENT UNIT	1
	TREATMENT CHAIR	1
	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	INSTRUMENT STERILIZER	1
	EXAMINATION INSTRUMENT SET FOR ENT	1
11B. TREATMENT CORNER	NEBULIZER APPARATUS	1
	SUCTION UNIT	1
	TREATMENT INSTRUMENT SET FOR ENT	1
11C. TEST ROOM	ELECTRO RESPONSE AUDIOMETER	1
11D. SOUND PREVENTION ROOM	SOUND PREVENTION UNIT	1
	AUDIOMETER	1
12. OPHTHALMOLOGY		
12A. EXAMINING ROOM, TEST ROOM	SLIT LAMP	1
	FUNDUS CAMERA	1
	PHOTO COAGULATION LASER	1
	ARC PERIMETER	1
	KERATOMETER	1
	TRIAL LENS SET	1
	LENS METER	1
	EXAMINATION INSTRUMENT SET FOR OPHTHALMOLOGY	1
	EXAMINATION INSTRUMENT SET FOR OPHTHALMOLOGY	1
	EXAMINATION INSTRUMENT SET FOR OPHTHALMOLOGY	1
13. DENTISTRY		
13A. TREATMENT ROOM	DENTAL UNIT	1
	TREATMENT INSTRUMENT SET FOR DENTAL	1
13B. X-RAY ROOM	DENTAL X-RAY APPARATUS	1
	AUTOMATIC X-RAY FILM PROCESSOR	1
13C. STERILIZING CORNER	AUTOCLAVE (APPROX. 20L)	1
13D. DENTAL LABORATORY	POLISHING MACHINE	1
	PLASTER MACHINE	1
	CASTING MACHINE	1
	MODEL TREATMENT MACHINE	1
	WAX MACHINE	1
14. EMERGENCY TREATMENT ROOM		
14A. EMERGENCY TREATMENT ROOM	MOBILE X-RAY UNIT	1
	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	IRRIGATOR STAND	1
	DEFIBRILLATOR (MOBILE TYPE)	2
	OXYGEN TENT	2
	ANAESTHETIC APPARATUS WITH VENTILATOR	1
	ULTRASONIC NEBULIZER	1
	EMERGENCY CART	2
	EMERGENCY RESUSCIATION EQUIPMENT	2
	ENDOTRACHEAL SET	1
	ELECTROCARDIOGRAPH (6 CH)	1
	TREATMENT INSTRUMENT SET FOR EMERGENCY ROOM	1
15. FUNCTION TEST ROOM		
15A. ELECTROENCEPHALOGRAM ROOM	ELECTROENCEPHALOGRAPH	1
15B. ELECTROCARDIOGRAM ROOM	ELECTROCARDIOGRAPH (6 CH)	1
15C. ULTRASONIC DIAGNOSTIC ROOM	ULTRASONIC DIAGNOSTIC APPARATUS (2 TYPES PROBE, WITHOUT DOPPLER)	1
15D. SPIROMETER ROOM	SPIROMETER	1
16. ENDOSCOPE ROOM		
16A. ENDOSCOPE ROOM	ENDOSCOPIC TABLE	1
	ENDOSCOPIC LIGHT SUPPLY	1
	INSTRUMENT TROLLEY	1

Department	Equipment	Q'ty
	INSTRUMENT CABINET	1
	FIBERSCOPE CABINET	1
	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	IRRIGATOR STAND	1
	GASTRO CAMERA	1
	FIBERDUODENOSCOPE	1
	FIBERCOLONOSCOPE	1
	FIBEROPTIC BRONCHOSCOPE	1
17. CLINICAL LABORATORY		
17A. LABORATORY	FUME HOOD	1
	WATER PURIFIER	1
	BIOCHEMICAL ANALYZER	1
	DEEP FREEZER	1
	REFRIGERATOR	1
	HIGH SPEED REFRIGERATED CENTRIFUGE	1
	CENTRIFUGE	1
	WATER BATH	1
	BINOCULAR MICROSCOPE	1
	BALANCE	1
	SPECTROPHOTOMETER	1
	ELECTROLYTE ANALYZER	1
	pH METER	1
	BLOOD GAS ANALYZER	1
	SHAKER	1
	MAGNETIC STIRRER	1
	AUTOMATED URINE ANALYZER	1
	BLOOD CELL COUNTER	1
	PLATELET COUNTER	1
	BLOOD COAGULATION TEST INSTRUMENT	1
	PIPETTE (VARIABLE TYPE)/SET	
	BILIRUBINOMETER	1
	GLUCOSE ANALYZER	1
17B. WASHING AND STERILIZING ROOM	ULTRASONIC CLEANER	1
	AUTOCLAVE (APPROX. 20L)	1
	DRY HEAT STERILIZER	1
	CONSTANT TEMPERATURE OVEN	1
	WATER PURIFIER	1
18. POST-MORTEM ROOM		
18A. POST-MORTEM ROOM	AUTOPSY TABLE	1
	SHADOWLESS LIGHT	1
	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	WORK TABLE	1
	MORTUARY REFRIGERATOR	1
	INSTRUMENT SET FOR AUTOPSY	1
18B. PATHOLOGY LABORATORY	AUTO-STAIN	1
	DEEP FREEZER	1
	FREEZING MICROTOME	1
	AUTOMATIC MICROTOME KNIFE SHARPNER	1
	VACUUM TISSUE PROCESSOR	1
	PARAFFIN OVEN	1
	STRETCHING HOT PLATE	1
	SHAKER FOR TISSUE FIXATION	1
	BINOCULAR MICROSCOPE	2
	CENTRIFUGE	1
	REFRIGERATOR	1
	INCUBATOR	1
19. X-RAY DEPARTMENT		
19A. TOMOGRAPH & DIAGNOSTIC X-RAY	FLUOROSCOPY DIAGNOSTIC X-RAY APPARATUS	1
19B. CHEST & DIAGNOSTIC X-RAY ROOM	GENERAL DIAGNOSTIC X-RAY APPARATUS	1
19C. MAMMOGRAPHY ROOM	MAMMOGRAPHY UNIT	1
19D. DARK ROOM	AUTOMATIC X-RAY FILM PROCESSOR	1
	CASSETTE EXCHANGE BOX	1
	FILM LOADING DESK	1
	DARK ROOM LAMP	1

Department	Equipment	Q'ty
19E. THE OTHERS	CASSETTE	1
	PROTECTIVE KITS	1
20. REHABILITAITON		
20A. ELECTRO THERAPY ROOM	MICRO-WAVE THERAPY APPARATUS	1
	COMBINATION THERAPEUTIC LAMP	1
	LOW FREQUENCY THERAPY APPARATUS	1
	ULTRASONIC THERAPY APPARATUS	1
21. ICU ROOM		
21A. ICU ROOM	BEDSIDE MONITOR	1
	CENTRAL MONITOR	1
	IRRIGATOR STAND	1
21B. WORKING CORNER, INSTRUMENT	INSTRUMENT STERILIZER	1
21D. MEDICAL INSTRUMENTS	RESPIRATOR	1
	OXYGEN TENT	1
	DEFIBRILLATOR (MOBILE TYPE)	1
	MOBILE X-RAY UNIT	1
	OXYMETER	1
	ULTRASONIC NEBULIZER	1
	ELECTROCARDIOGRAPH (6 CH)	1
22. DELIVERY DEPARTMENT		
22A. OBSTETRIC DELIVERY ROOM	SHADOWLESS OPERATING LIGHT (MOBILE)	1
	OBSTETRIC DELIVERY TABLE	1
	IRRIGATOR STAND	1
	VACUUM EXTRACTOR	1
	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	FETAL INTENSIVE CARE UNIT	1
	VACUUM EXTRACTOR	1
	INFANT WARMER	1
	ANAESTHESIA APPARATUS WITH VENTILATOR	1
	INFANT SCALE	1
	INSTRUMENT SET FOR DELIVERY	1
22B. DELIVERY & OPERATING ROOM	SHADOWLESS OPERATING LIGHT	1
	OBSTETRIC DELIVERY TABLE	1
	IRRIGATOR STAND	1
	VACUUM EXTRACTOR	1
	FETAL INTENSIVE CARE UNIT	2
	FETAL MONITOR	1
	ANAESTHESIA APPARATUS WITH VENTILATOR	1
	ELECTRO SURGICAL UNIT	1
	RESUSCITATOR	1
	X-RAY FILM ILLUMINATOR (2x FILMS)	1
	MANUAL RESUSCITATOR SET	1
22C. PREPARATION CORNER	INSTRUMENT STERILIZER	1
22D. SCRUB UP CORNER	ULTRA-VIOLET WATER STERILIZER	1
23. PREPARATION CORNER		
23A. LABOUR ROOM	LABOUR BED	1
24. NEW BORN NURSERY		
24A. NEW-BORN NURSERY	IRRIGATOR STAND	1
	INFANT WARMER	1
	DIAPHRAGM PUMP	1
24B. MILK KITCHEN	REFRIGERATOR	1
24C. LACTATION ROOM	INFANT WEIGHING SCALE	1
	BREAST PUMP	1
24D. BATHING ROOM	INFANT BATH	1
	WEIGHING SCALE	1
	REFRIGERATOR	1
24E. PREMATURE NURSERY	INFANT INCUBATOR	1
	PHOTTHERAPY UNIT	1
	NEONATAL MONITOR	1
	INSTRUMENT TROLLEY	1
	ULTRASONIC NEBULIZER	1
	RESPIRATOR	1
24F. NURSE STATION	MEDICAL REFRIGERATOR	1
	REFRIGERATOR	1

Department	Equipment	Q'ty
25. THE OTHER		
25A. THE OTHER	STRETCHER	1
	WHEEL CHAIR	1
26. AMBULANCE VEICLE		
26A. AMBULANCE VEICLE	EQUIPPED AMBULANCE	1
	EMERGENCY AID KIT FOR AMBULANCE	2
	DEFIBRILLATOR (MOBILE TYPE)	1
	ECG (6 CH)	1

Appendix Table 16.3 List of Equipment

Function	Equipment	QTY
Donor selection	Micro pepette set	3
	Micro pipette stand	3
	Cell counter 4parameter	1
	Hemoglobinmeter	3
	Dressing drum	3
	Dressing tray	3
	Scissors for sterilize	6
	Sphygmomonometer	5
	Stethoscope	5
	Tourniquet	3
	Tweezers	10
	Weigh scales 135kg	3
	Arm rest	3
	Beaker set 500cc 250cc 100cc	3
	Bottle 5cc with cap(for blood sample)	1000
	Glass timel set	1000
Blood collection	Electric tube sealer	1
	Hemoquick	3
	Hand tube sealer	5
	Alumimum rings for hand tube sealer(4000pcs)	6
	Resuscitator	2
	Blood scale	8
	Clamp arterial type	8
	Dressing drum	3
	Dressing tray	3
	Scissors for sterilize	8
	Tourniquet	6
	Tweezers	8
	Arm rest	8
Laboratory	Micro pipette set	4
	Micro pipette stand	4
	Table top centrifuge with cell washing	3
	Standard microscope (Obj.10x,40x,100x)	2
	Water bath	2

	PH meter	1
	Auto desicater	3
	Refrigerator for medicine	2
	Incubator	2
	Rotator	2
	Hand tube sealer	2
	Aluminum reings for hand tube sealer (4000pcs)	6
	Viewing box	3
	Dressing drum	3
	Dressing tray	3
	Scissors for sterilize	8
	Squeezing bottle set reusable 100cc 250cc	5
	Tweezers	6
	Timer multiple 60-120 minute(change timer)	8
	Test tube rack(2x16, 4x16)	8
	Mathglass set 500cc 250cc 100cc	5
	Beaker set 500cc 250cc 100cc	5
	Bottle 5cc with cap(for blood sample)	2000
	Micro slide	2000
	Micro slide cover glass	
	Micro slide stand	10
	Test tube set 12x75mm 10x75mm	1200
	Petri dishes	10
	Glass tile set	5
	Yellow tips	1500000
	Micro plate jmixer	5
Production	Air blaster	1
	Refrigerated centrifuge for 6 blood bags	3
	Blood cell counter 8parameter	1
	Platelet Agitator	2
	Electric tube sealer	2
	Coagulation Analyzer for factor 8	1
	Laminar air flow	1
	Electric balance	2
	Maintenance tool set(for electronics and mechanics)	1
	Maintenance tool set(rpm, temparature, others)	1
	Cup for refrigerated centrifuge blood bag	18
	Low temparature water bath	2

	Electrolyte Analyzer	1
	Hand tube sealer	3
	Aluminum reings for hand tube sealer(4000pcs)	6
	Balance	3
	Blood scale	3
	Plasma extractor	4
	Tiimer multiple 60-120minute (change timer)	6
	Cleaner wet dry type	1
	Petri dishes	3
	Clamp arterial type	6
	Dressing drum	3
	Dressing tray	3
	Scissors	8
	Tweezers	8
	Trash can	3
	Cart	2
Storage	Deep freezer -30 450liters	2
	Cold box	3
Sterilization	Autoclave big	2
	Ultra sonic pipette washer	2
	Dry oven for sterilization 300x300x300	2
Others	Maintenance tool set(for electronics and mechanics)	1
	Facsimile	1
	Computer with printer and modem	1
	Typewriter	1
	Separation stand	1
Multi-purpose	Cool box for blood transportation	2
Blood collection	Blood collection stockers/cool	2
	PA/Speaker system	1
Donor transport	PA/Speaker system	1
Meeting room	Risograph	1
	Photocopy machine	1
	Overhead projector with screen	1
	Audio visual equipment set (video projector etc)	1
	Sound system	1