

**Table 16.17 Estimated Project Cost**

(Unit 1,000 US\$)

Items	1st Year	2nd Year	3rd Year	Total
1) Personnel Expense	831	859	847	2,537
a. Technical Assistance/Consultant Fee (including direct personnel cost, general/technical expense, per diem, and international travel cost)	731	757	736	2,224
b. Local Expense of Project Implementation	100	102	111	313
2) Education & Training Cost	8	10	9	28
a. Overseas Training	6	6	6	19
b. In-country Training	2	4	3	9
3) Equipment & Renovation Cost	734	0	0	734
a. Equipment Installation	726	0	0	726
b. Renovation of Sanitary Utility	8	0	0	8
Total	1,573	869	856	3,298

Note: Foreign exchange rate is 1 US\$ = 120 Japanese Yen as of August 2003.

Price adjustments due to the inflation are not reflected.

Estimation is based on the international rates.

## 16.4 Improvement of Oblast Medical Services System and Oblast General Hospital

### 16.4.1 Background and Rationale

The land area of the Republic of Uzbekistan is 447,400 km<sup>2</sup>, or approximately 1.2 times that of Japan. There are 12 Oblasts (Region), 1 Tashkent City and autonomous Republic of Karakalpakstan.

Although top referral medical facilities and specialized institutes are located in Tashkent city, it is still very difficult to transfer the patients from Oblast to Tashkent city. Because the area of Uzbekistan is vast, availability of transportation infrastructure dominates patients' accessibility to medical facility. Poor transportation infrastructure may bear severely upon the patients in rural. Therefore, strengthening the medical services system at Oblast level is an urgent issue.

Medical services system of former Soviet Union period still remains in Uzbekistan. Within the existing medical services system at Oblast level are; several specialized medical services facilities (specialized dispensaries and polyclinics); in addition to the Oblast General Hospital, which is a core of Oblast medical services with specialized medical services department attached. Besides this, there is another emergency medical services center in Oblast, which also has specialized medical services department. Almost all the

medical facilities are in former Soviet Union style; its scale of buildings are large; each medical department is located in separate building. This is making the transfer of patients, samples, and the movement of hospital staff difficult and inefficient.

Such situation gives rise to inefficiency in various aspects; human resources (especially, specialized doctors), medical facilities and equipment, medical cost, and laboratory tests and diagnostic examinations.

These specialized medical facilities were separately established according to the diseases, not to the internal organs, and these facilities tend to focus on the subdivided specialized issues. In this system, it is concerned that patients may miss adequate treatment at right time, and that it is difficult to have physicians' capabilities develop. For instance, a patient with liver disease may be treated at infectious diseases hospital if the hepatitis virus is the cause, or at oncology hospital if he has a cancer, or at Oblast General Hospital in other cases. Furthermore, when a patient is suspected of disease that one specialized hospital is unable to identify, a request is made to other specialized hospital for sending a doctor and examining the patient. This system gives rise to many problems; too much time elapses till the final diagnosis is made; equipment necessary for specific examination may not be available at given time and place. Clearly, it is a complicated and inconvenient medical services system for both patients and doctors.

Moreover, although the number of beds is small, the scale of the buildings is too large for their actual activities and needs.

Out-patients with complications have to visit more than one specialized hospitals for medical treatment. In addition, when a person becomes sick, he himself first makes a choice of which hospital to visit; his wrong choice may lead him to a completely irrelevant specialized hospital, and adequate treatment at the initial stage of disease is most likely to be missed.

As described, it is important to strengthen the Oblast General Hospital, which takes a central role in Oblast level medical services, whereby medical services in Oblast as a whole will be improved. For this purpose, consolidation is suggested to be undertaken: Oblast General Hospital will have a centralized laboratory; specialized medical facilities are to be consolidated and merged with the Oblast General Hospital. This strategy aims at improving the efficiency of hospital management and quality of medical services so that

both hospitals and patients benefit from it. The Oblast General Hospital, which is a top referral facility at Oblast level, has a role of supervising, training and supporting of medical services for the lower referral facilities. Therefore, it is important to strengthen the Oblast General Hospital for the improvement of the medical services in Oblast as a whole.

#### **16.4.2 Overall Goal**

To establish the strengthened and effective Oblast medical services system for the improvement of health situation in Oblast, through the improvement of the Oblast General Hospital, which is a top referral facility at Oblast level.

#### **16.4.3 Objectives**

To establish overall program for the Oblast medical services model at Oblast General Hospital as a top referral facility. Results and know-how will be expanded to the nationwide level. The centralized and consolidated management hospital system common in the advanced countries are applied.

#### **16.4.4 Project Location**

Selection from the areas where the Baseline survey was implemented;

#### **16.4.5 Target Beneficiaries**

Target beneficiaries are inhabitants living in the project Oblast and medical personnel in Oblast General Hospital. In addition, if design and know-how obtained through the project implementation are to be expanded to other areas, likewise the target beneficiaries will be expanded to nationwide level.

#### **16.4.6 Project Duration**

Three and half years from 2004 to 2008 (3.5 years).

- a. Study and formulation of program: 6 months
- b. Detailed design and preparation of tender document: 4 months,

- c. Tender: 2 months
- d. Construction and procurement/installation of equipment: 1 year
- e. Training, monitoring, analysis and formulation of standard package model: 1.5 years

#### **16.4.7 Implementation Agency**

The implementation committee organized under the Deputy Minister of Health is the main implementation body at Republican level. The director of Oblast Health Department is Oblast level counterpart for administration. Director of recipient Oblast General Hospital is an actual implementation agency of this project. Moreover, implementing unit for the project will be organized with representatives of specialized medical facilities (hospitals, dispensaries and polyclinics), Oblast Emergency Center, Oblast General Hospital and Oblast Health Department, and coordination is expected among them.

#### **16.4.8 Project Components and Activities**

##### **(1) Stage-wise Programs**

This improvement program will apply a stage-wise approach. The initial stage of the project is to select the pilot study Oblast and implement the feasibility study to formulate the detailed design for pilot study. Next stage is to implement the improvement programs, to obtain the lessons learned (how to implement the pilot study, how to achieve the result successfully), and to formulate a package model for other areas. This stage also includes construction and/or renovation of hospital facilities and procurement of equipment for centralization and consolidation of medical services system in Oblast General Hospital. These processes will be carried out entirely within this proposed project. The expansion of the package model to other areas will be another project. The step-wise programs from the initial stage are shown below;

**Step 1 :** Formulation of pilot model program, detailed action plan and design for the Oblast medical services system and Oblast General Hospital

- a. Implementation of feasibility study on the centralization and consolidation of medical services system in the model Oblast and Oblast General Hospital, and formulation of improvement programs and action plans for the pilot study areas.

**Step 2 :** Establishment of hospital management system and medical services system at the model Oblast General Hospital

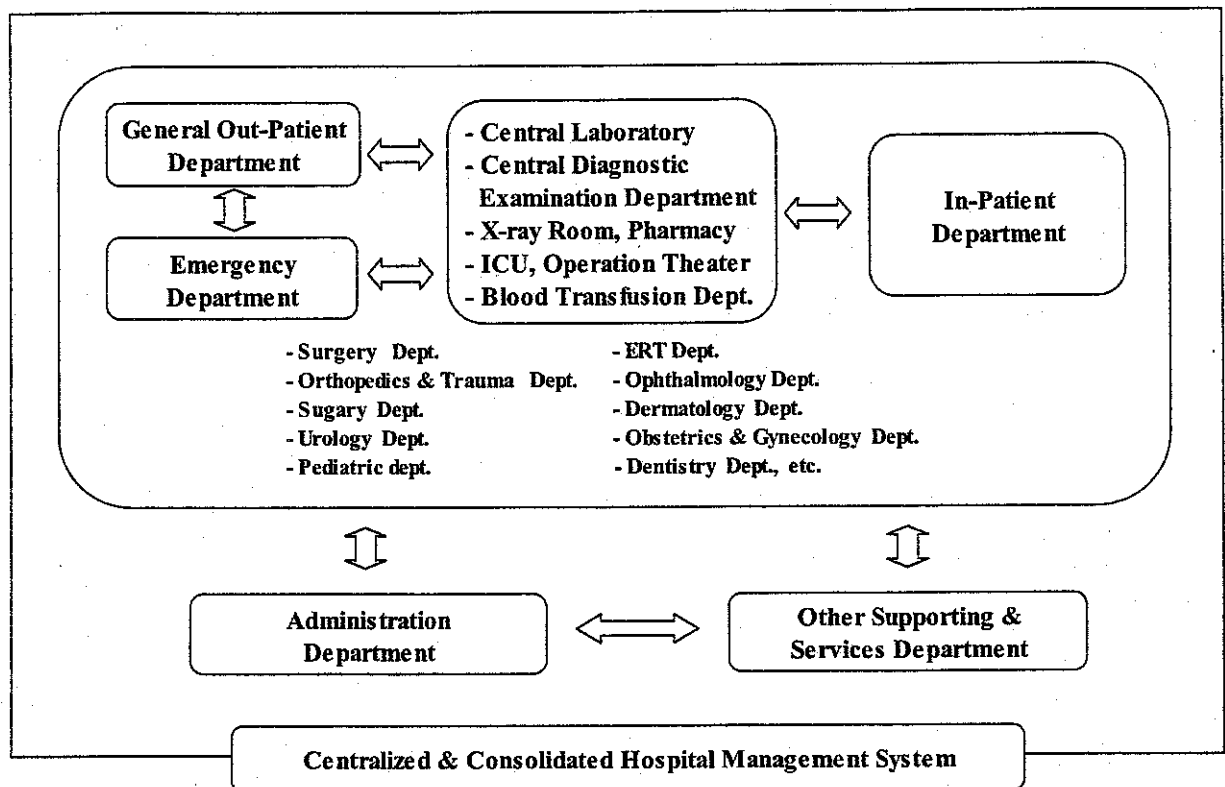
- a. Integration and improvement of hospital functions (layout of facility, movement line of patients and staff in hospital)
- b. Centralization /consolidation of laboratory functions (diagnostic/functional examinations) which are currently dispersed at each specialized medical facility, Oblast general hospital and at other facilities.
- c. Integration and rationalization of blood transfusion system at Oblast level
- d. Consolidation of Oblast General Hospital and other specialized medical facilities
- e. Consolidation of above Oblast General Hospital and Emergency Center
- f. Establishment of the medical services supporting system for Oblast as a whole
- g. Construction or renovation of hospital facilities and procurement of equipment, for centralization and consolidation of medical services system

**Step 3:** Formulation of package model for expansion to national level through the above program implementation and monitoring results

**Step 4:** Expansion of model hospital/system to other Oblasts (recommendation of another project)

**(2) Logical Framework of the Project**

The image of the proposed centralization and consolidation of Oblast General Hospital function is shown below;



**Figure 16.7 Project Image of Proposed Oblast General Hospital Structure**

The framework of the proposed project is shown in Table 16.18.

**Table 16.18 Framework of the Improvement Program of  
Oblast Medical Services System**

Narrative Summary	Indicators	Data Sources	Assumptions
<p><b>Overall Goal</b> To establish the strengthening and effective Oblast medical services system for the improvement of health situation in Oblast, through the improvement of the Oblast General Hospital which is a top referral facility in Oblast level</p>	<ul style="list-style-type: none"> <li>-Health indicators &amp; Disease structure (especially cardiovascular, renal, respiratory and infectious diseases)</li> <li>- Model package (education and the training of financial management, the diagnosis and treatment management, and the medical staffs are appropriately done)</li> </ul>	<ul style="list-style-type: none"> <li>-Health statistics, demography &amp; health data</li> <li>-Program paper</li> </ul>	<ul style="list-style-type: none"> <li>- Stability of government &amp; health reform policy</li> </ul>
<p><b>Objectives</b> Establishment of overall program of Oblast medical services at the Oblast General Hospital for the expansion of results and know-how to countrywide, through the centralized and consolidated management hospital system popular in the developed countries.</p>	<ul style="list-style-type: none"> <li>- Structure of Oblast medical services system (referral system, health information system, central diagnosis system and financial management system)</li> <li>- Model package (case history management, team diagnosis and treatment, diagnosis and treatment policy, and cost management)</li> </ul>	<ul style="list-style-type: none"> <li>-Oblast report</li> <li>- Program paper</li> </ul>	<ul style="list-style-type: none"> <li>-Stability of needs for Oblast &amp; national health improvement</li> </ul>
<p><b>Outputs</b></p> <p><b>Step 1</b> Formulation of pilot model program, detailed action plan and design for the Oblast medical services system and Oblast General Hospital</p> <p><b>Step 2</b> Establishment of hospital management system and medical services system at model Oblast General</p> <p>a. Improvement of the in-hospital function of Oblast General Hospital</p> <p>b. Establishment of the reform/centralization/consolidation of highly referral facilities in Oblast</p>	<ul style="list-style-type: none"> <li>- Program (revenue and expenditure management and the capital investment management, an integrated diagnosis and treatment, a central diagnosis system are executed)</li> <li>- Action plan (execution of financial affairs monthly report, inspection record, and team diagnosis and treatment conference are executed)</li> <li>- Provision of infrastructure (covered filed &amp; area)</li> </ul> <p>a. -Improved personnel movement line</p> <p>-Improved facility function</p> <p>b. -Structure of Oblast medical services system</p> <p>-Structure of Oblast General Hospital</p> <p>-Results/records of medical activities, training &amp; supporting to lower referral</p>	<ul style="list-style-type: none"> <li>- F/S Report</li> <li>- Action &amp; detailed design paper</li> </ul> <p>a. -Record &amp; report</p> <p>-Facility layout</p> <p>b. -Record &amp; report,</p> <p>c. -Record</p> <p>-Financing sheet</p>	<ul style="list-style-type: none"> <li>-Stability of government &amp; health reform policy</li> <li>-Needs of Oblast &amp; national health improvement</li> <li>-Fully support from Uzbekistan side</li> <li>-Appointment of C/Ps properly</li> <li>-Macro-economy growing</li> <li>-Collaboration with donor activities</li> </ul>

Narrative Summary	Indicators	Data Sources	Assumptions
<p>c. Strengthening of managing and financing capability</p> <p>d. Strengthening of the laboratory tests &amp; diagnostic examinations in Oblast level</p> <p><b>Step 3</b> Formulation of package model for expansion to countywide through the above program implementation and results of monitoring</p>	<p>c. Improved resource allocation &amp; financing</p> <p>d.- Lab.test &amp; examination</p> <p>-Monitoring - Package model</p>	<p>d.-Record</p> <p>- Report - Program paper</p>	
<p><b>Activities</b></p> <p>(See Table 16.19)</p>	<p><b>Inputs</b></p> <p>(See "(3) Inputs of the Program")</p>		<p>(See Table 16.19)</p> <p><b>Preconditons</b></p> <p>- Needs of health improvement - No disaster &amp; plague</p>

## (2) Project Activities and Components

Project activities and components to be implemented during the Pilot Study period are shown in the table below. This is a comprehensive development program, aiming at improving the effectiveness of Oblast medical services system. Therefore, the activities and components of the project involve all sub-sectors of health care and medical services. The main activities are; capacity building of the effective and qualified medical services system at Oblast level through the centralization and consolidation of the medical facilities; technical transfer to the counterparts such as financing, administration and management; formulation of model programs; and to obtain the lessons learned. The activities are divided into three steps; 1) feasibility study and designing, 2) implementation, and 3) monitoring and package model formulation.



**Table 16.19 Activities and Components of the Project**

Activity/Component
<p><b>Step 1</b></p> <ol style="list-style-type: none"> <li>1. To implement the feasibility study on the strengthening of medical service system in the model Oblast, and formulate the improvement programs and action plans for the pilot study areas</li> <li>2. To formulate the detailed design of equipment procurement, and facility construction and/or renovation of Oblast General Hospital</li> <li>3. To implement the tendering and provision of equipment and facility for construction and/or renovation</li> </ol>
<p><b>Step 2</b></p> <ol style="list-style-type: none"> <li>a.1 To strengthen the hospital function, improvement of movement line of patients and staff at hospital</li> <li>a.2 To integrate and improve the hospital function (layout of facility, movement line of patients and staffs in hospital)</li> <li>b.1 To consolidate the Oblast General Hospital and other specialized medical facilities</li> <li>b.2 To consolidate the above Oblast General Hospital and Emergency Center</li> <li>b.3 To establish the medical services system in the Oblast General Hospital (establishment of general medical treatment department, improvement of diagnosis, improvement of specialized medical services, strengthening of follow up system for chronic stage and discharged patients, strengthening of training function)</li> <li>b.4 To improve the medical treatment activities (improvement of bed occupation rate, reduction of duration hospitalization of each inpatient, improvement of capability of specialized doctors, medical information system, drug management, etc.)</li> <li>b.5 To strengthen the collaboration and cooperation with CRHs and SVPs for the establishment of Oblast medical services and emergency medical system services</li> <li>b.5 To integrate and rationalize the blood transfusion system at Oblast level</li> <li>b.7 To improve the retraining and fostering system of managing/financing personnel and medical personnel (physician, nurses, para-medical, laboratory staff &amp; pharmacist)</li> <li>b.8 To remind the medical staffs' conscious change to "medical services for patients"</li> <li>c.1 To establish the system of effective use of medical resources (human resources, budget, facility and equipment) through the centralization and consolidation of hospital,</li> <li>c.2 To establish the hospital management system(outpatient, centralized laboratory test and diagnostic examination, inpatient)</li> <li>c.3 To strengthen the hospital administration and financing management capability for effective hospital activities and effective use of financing</li> <li>c.4 To establish the charged model and insurance system, and standardization of the cost/tariff for medical services and remuneration model</li> <li>c.5 To strengthen the operation and maintenance system for the facility and equipment</li> <li>c.6 To establish the management of health insurance system at Oblast level (request, payment and management of insurance association)</li> <li>d.1 To Centralize/consolidate laboratory functions which are currently dispersed at each specialized medical facilities, Oblast general hospital and others.</li> <li>d.2 To establish the integrated laboratory and diagnostic examination center</li> <li>d.3 To improve laboratory test and diagnostic examination, and to establish standard of tests and examinations centered on the Oblast General Hospital</li> <li>d.4 To strengthen laboratory tests, diagnostic examinations and quality control</li> </ol>
<p><b>Step 3</b></p> <ol style="list-style-type: none"> <li>1. To monitor and evaluate the pilot study implementation</li> <li>2. To analyze the result and identify the best practices, lessons learned.</li> <li>3. Formulation of package model for other Oblasts (manual/guideline for hospital management, financing, insurance, drug management, health information system, preventive medicine, equipment operation and maintenance, etc., standard equipment list, essential drug list, etc.)</li> </ol>
<p><b>Assumptions :</b> C/Ps and trainees will not leave their work, positions and health sectors</p>

Note : Heading number of each Activities/Components corresponds to Outputs

### **(3) Inputs of the Program**

For the implementation of this program, both the donor and Uzbekistan sides will input the following:

#### **1) Donor Side**

- Implementation of feasibility study on the strengthening of medical service system in model Oblast and formulation of improvement programs and action plans
- Technical assistance of hospital management, health financing/insurance, quality control, medical information, drug control, blood transfusion, and operation and maintenance of equipment.
- Establishment of integrated laboratory and diagnostic examination center
- Establishment of consolidated central Oblast General Hospital
- Provision of medical equipment and construction and/or renovation of facility
- Training for the medical staff (including overseas training)
- Training for the hospital management and administration staff (including overseas training)
- Training for the staff of laboratory tests and diagnostic examinations (including overseas training)

The recommended equipment list and building layout drawings are shown in Appendix Table 16.2 and Figure 16.1 – 16.4.

#### **2) Uzbekistan Side**

- Appointment of Counterparts
- Arrangement of the Office Space
- Tax exemption of equipment and material procurement necessary for the project implementation
- Organization of the steering, technical and coordination committee for the Project

### **(4) Timetable of implementation by the Activities Bundles**

The timetable of the program is shown below

**Table 16.20 Timetable of Project Implementation**

Activity/Component		1st Year	2nd Year	3rd Year	4th Year
<b>Step 1</b>					
1.	To implement the feasibility study on the strengthening of medical service system in model Oblast and formulate the improvement programs and action plans for the pilot study areas				
2.	To formulate the detailed design of equipment procurement and facility construction and/or renovation of Oblast General Hospital				
3.	To implement the tendering and providing for equipment and facility construction and/or renovation				
<b>Step 2</b>					
a.1	To strengthen the hospital function, improvement of movement line of patients and staffs at hospital				
a.2	To integrate and improve the hospital				
b.1	To consolidate the Oblast General Hospital and other specialized medical facilities				
b.2	To consolidate the above Oblast General Hospital and Emergency Center				
b.3	To establish the medical services system in the Oblast General Hospital				
b.4	To improve the medical treatment activities				
b.5	To strengthen the collaboration and cooperation with CRHs and SVPs for the establishment of Oblast medical services and emergency medical system services				
b.5	To integrate and rationalize the blood transfusion system in Oblast level				
b.7	To improve the retraining and fostering system of managing/financing personnel and medical personnel				
b.8	To remind the medical staffs' conscious change to "medical services for patients"				
c.1	To establish the system of effective use of medical resources				
c.2	To establish the hospital management system				
c.3	To strengthen the hospital administration and financing management capability for effective hospital activities and effective use of financing				
c.4	To establish the charged model and insurance system, and standardization of the cost/tariff for medical services and remuneration model				
c.5	To strengthen the operation and maintenance system for the facility and equipment				
c.6	To establish the management of health insurance system in Oblast level				
d.1	Centralization /consolidation of laboratory functions which are currently dispersed at each specialized medical facilities, Oblast general hospital and others				
d.2	Establishment of Integrated laboratory and diagnostic examination center				
d.3	Improvement of laboratory test and diagnostic examination, and establishment of standard of tests and examinations centered on the Oblast General Hospital				
d.4	Strengthening of laboratory tests, diagnostic examinations and quality control				
<b>Step 3</b>					
1.	To monitor and evaluate the pilot study implementation				
2.	To analyze the result and identify the best practices, lessons learned.				
3.	Formulation of package model for other Oblast				
<b>Step 4</b>					
1.	To expand the package model to the other Oblasts (Recommendation of another project)				

**(4) Assignment and Schedule of the Technical Assistance and Consultant**

The assignment and schedule of the consultant and/or expert for the feasibility study, supervising of the construction/renovation and equipment installation, technical assistance and model program formulation are shown below:

**Table 16.21 Assignment of the Consultant/Expert**

Expert/Specialty	1st Year			2nd Year			3rd Year			4th Year		
1 Project Manager	[Shaded]											
2 Hospital Management/Financing	[X]	[X]		[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
3 Equipment/Facility Management	[X]	[X]	[X]	[Shaded]			[X]	[X]	[X]	[X]	[X]	[X]
4 Drug Management	[X]	[X]				[X]	[X]	[X]	[X]	[X]	[X]	[X]
5 Laboratory Test/Quality Control	[X]	[X]				[X]	[X]	[X]	[X]	[X]	[X]	[X]
6 Health Information	[X]	[X]				[X]	[X]	[X]	[X]	[X]	[X]	[X]
7 Coordinator	[Shaded]											

**16.4.9 Project Management Issues**

- This project will directly appoint Deputy Minister head of project implementation.
- For the success of the project, collaboration and coordination among Ministry of Health, medical facilities in the Rayon and Oblast will be expected..
- This project will organize the steering and technical committee for designing programs, monitoring, analyzing, establishing the standards and guidelines, and formulating the model package.
- Coordination committee will be organized involving representative of Oblast health department, Oblast General Hospital, specialized medical facilities and Oblast emergency center and CRHs.

**16.4.10 Other Development Issues**

The purpose of this project containing a pilot study is to establish a model for consolidated and centralized medical services system, in order to strengthen all of the Oblast medical services system, in which the Oblast General Hospital is designated to play a central role. Therefore, this system is expected to be expanded to other Oblast. The effective and qualified medical services are main concept of the health care reform in Uzbekistan including cost effectiveness. This project aims to achieve the establishment of the appropriate model Oblast medical services system. Therefore, this project is a first step of health care reform in Uzbekistan. Meanwhile, during the project implementing period, it

has to consider the package model for further expansion, and to formulate the adequate package model through the project. This M/P recommends the implementation of “Step 4 Project” following this Project.

#### 16.4.11 Estimated Project Cost

The Project consists of two pillars; construction of the new hospital buildings for consolidated and centralized system; and renovation of the existing building for more effective use. The total project cost of construction estimated at approximately US\$ 19,016,000 (nineteen million, and sixteen thousand dollars); renovation estimated at US\$ 7,516,000 (seven million, five hundred and sixteen thousand dollars). The details are shown in the following table.

**Table 16.22 Estimated Project Cost**

Items	(Unit 1,000 US\$)				
	1st Year	2nd Year	3rd Year	4th Year	Total
1) Personnel Expense	877	864	837	554	3,132
a. Technical Assistance/Consultant Fee (include direct personnel cost, general/technical expense, per diem, and international travel cost)	802	809	779	493	2,883
b. Local Expense of Project Implementation	76	54	58	61	249
2) Education & Training Cost	8	8	9	8	34
a. Abroad Training	6	6	6	6	25
b. In-country Training	2	2	3	2	9
3) Equipment Cost	0	1,485	0		1,850
4) Construction of Building	0	14,000	0		14,000
4') Renovation of Building	0	2,500	0		2,500
Total (Construction Case)	886	16,722	846	562	19,016
Total (Renovation Case)	886	5,222	846	562	7,516

Note: Foreign exchange rate is 1 US\$ = 120 Japanese Yen in August 2003.

Price adjustments due to the inflation are not reflected upon.

Estimation is based on the international rates.

### 16.5 Establishment of Health Management Information System

#### 16.5.1 Background and Project Rationale

Uzbekistan republic historically has a strong health care system, which has been controlled centrally. To support the **centralized management** strong information system had been developed and sustained.

HIS follows the pattern of the **health care services delivery** like regular hospitals system, sanitary and epidemiology system, specialized hospitals system and so. The Justice ministry manages population registration system and it has offices from rayon level. Besides these, the general statistical system functions at all levels. All these bodies exchange information between them at regular intervals

But, Health Management Information System (HMIS) in Uzbekistan suffer from some deficiencies like manual system with aggregated data, lack of quality auditing, and absence of performance indicator system and feedback mechanism. There are again some problems in sharing health information between the donors, different government departments and intra department. Added to this are the non-availability of stationary, formats etc. Organizationally sufficient numbers of qualified personnel are available at each level, but the support, training and tools available to them are very limited. With the result, objective and qualitative data is not generally available for decision making at all the levels. Many of the issues have to do with the general system of governance in the country. Like, lack of performance-based incentives, absence of disincentives for non-performance, irrational and ad hoc decision making are some of the issues to name a few. With the result the crucial decisions in the core functional areas of health systems management like personnel, equipment, drugs management, program monitoring may not be effective. Government of Uzbekistan has taken note of these issues and has started seriously attending to the development of a sound HMIS with the help of donors and UN agencies.

### **16.5.2 Project Goal**

To increase the ability of the health administrators to plan, monitor and take corrective action in the management of health care services.

### **16.5.3 Objectives**

Making available timely, updated and interrelated information on all aspects of health and family welfare services delivery to all levels of health management

#### **16.5.4 Project Location**

The project aims to attend to the inadequacies and issues with each of the health institution.

1. RIAC (Republican Information and Analytical Center), TASHKENT
2. OHSB (Oblast Health Statistics Bureau)
3. ROMU (Central Rayon Hospital, Organizational And Methods Unit)
4. SVP

#### **16.5.5 Target Beneficiaries**

Beneficiaries:

Program managers and policy makers at all levels in the MOH at Tashkent, Oblasts and Rayons

Staff of RIAC, Tashkent

Staff of Oblast health statistics bureau

Staff of Rayon organisation and methods unit

#### **16.5.6 Project Duration**

Four years and in the 5<sup>th</sup> year the review of the implementation is to be conducted

#### **16.5.7 Implementation Agency**

The director of RIAC, Tashkent is the main counterpart at Republican level. The director (OHSB) Oblast Health Statistics Bureau at the oblast level and the head of ROMU (Rayon Organizational and Methods Unit) at the rayon level are the counterparts at oblast and rayon level.

Short-term consultant for 24 months for design of HMIS, training, monitoring of MEDSTAT/SOFTWARE development and implementation will lend technical assistance.

### **16.5.8 Expected Benefits/Outcomes**

- Streamlined HMIS at all levels, that means the availability of data for decision making to the health staff at all levels.
- Reduced workload of ROMU, OHSB, RIAC (since automatic consolidation and quality checking is done by the MEDSTAT software integration)
- Improved quality of data in terms of timing and dependability
- Availability of DISAGGREGATED DATA of rayon and levels below for health planning and detailed monitoring.
- Increased interactions with the ZAGS system, Sanitary and Epidemiology system for data sharing and comprehensive health planning.

### **16.5.9 Project Activities**

#### **(1) Framework of the Proposed Strategy**

Any improvements and refinements to the existing system will have to work within the framework of the existing system. To this extent the strategy should be a pragmatic one. The following are the basics of the outlined strategy are:

- It will be a simple but most feasible one.
- It will work for slow and sustained improvements over a period of time - say in a five years' time frame.
- It aims to inculcate a sense of data culture and rationality in decision-making.
- It aims to utilize the existing investments in computers and personnel.
- It aims to reduce costs and ad-hocism in the management of health care services delivery

#### **(2) Limitation of the Proposed Strategy**

Health management information system (HMIS) is only one component of the total health management system. It must function harmoniously with the existing administrative machinery. HMIS is a subset of general management system and is closely linked to the planning and monitoring process. The interdependence is such that there cannot be an isolated HMIS from the general management system. Its strengths, capabilities and performance depend on the ability of managers at all levels to drive the system for updated, useful information for management decision-making and continuous feedback to the



system. To this extent, management training and development has to go on concurrently with the HMIS development. There should be commensurate delegation of tasks and decentralization of authority to the levels below to plan, execute, modify and finally to produce results. In brief, information should have linkages to action.

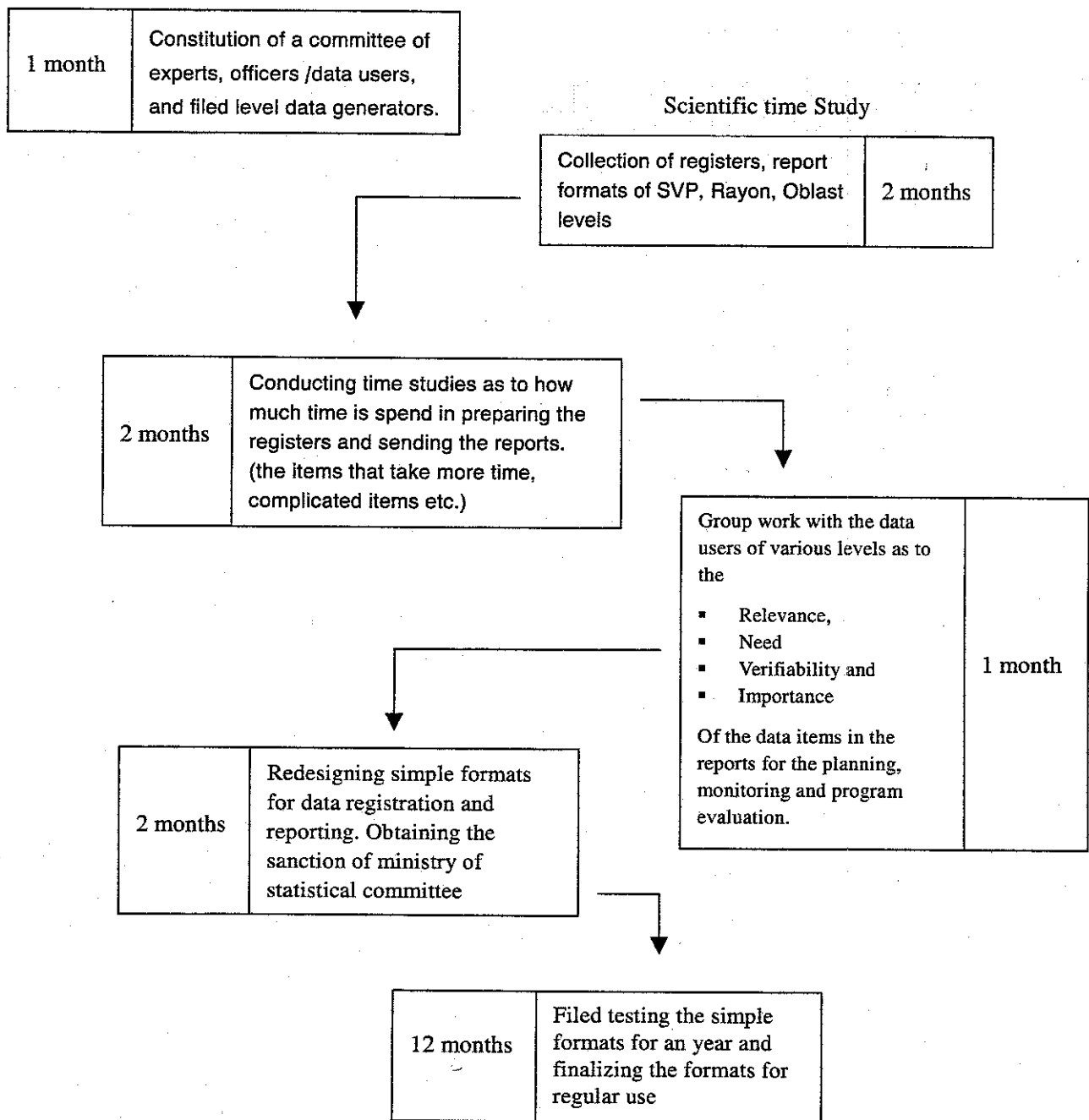
(3) **HMIS Action Plan – List of Components and Explanation**

**Table 16.23 List of Components and Explanation**

Activity/component	Explanation	Issues	Remarks
1. Simplification of registers and reports	At present the record maintenance at SVP is very heavy. Since disaggregated data will be available through computerization, it is proposed to simplify the number and column of reports and registers.  Figure * on page 16-67* explains the process of simplification of registers.	This process may take around 2 to 3 years to get adopted in to the registration and reporting process	Simplification of registers needs the permission of the ministry of statistical affairs.
2. Development of feedback system	Feedback should include the performance/indicators of other SVP/RAYON/OBLASTs in such a way that a particular institution is aware of where does it stand in respect to others. This will create a feeling of collective work and clear any misunderstanding about many issues regarding performance and goals etc.	It is proposed to develop automated feedback through the MEDSTAT program	The feedback system will follow the lines of the performance indicator system
3. Developing performance indicator system	A system of performance indicators will have to be developed and introduced.		World Bank Health II project aims to address this subject
4. Training of the key HMIS personnel	The current/proposed computerization of data at oblast and rayon levels will make the manual tasks of data entry, aggregation and other calculations redundant. Hence the statistical staff has to develop skills in quality checking, analysis and presentation tools. Trainings and reorientations to the HMIS staff on statistical analysis and to management staff on the utilization of data and rational decision-making and programmer on the computer programming will have to be undertaken.	TIPME has the technical capability but does not have the capacity to undertake large volume of training. Regional training institutes may be encouraged.	The training capacity needs to be developed in TIPME and it is suggested to open a training department in RIAC with suitable infrastructure and equipment
5. Equipping the oblasts and rayons with computers	It is proposed to equip some oblasts and rayons with hardware and minimum software and provide for networking equipment	It is proposed to exclude the health I and health II project oblasts and rayons.	

Activity/component	Explanation	Issues	Remarks
6. Refinement and Installation of MEDSTAT in oblasts and Rayons.	The MEDSTAT program developed by RIAC needs to be refined with FEEDBACK MODULE, connections to RDBMS system, and a set of scientific validation rules for the data quality maintenance and then installed in all oblasts and rayons to ensure automatic consolidation, report generation and transmission and develop disaggregated regional and national databases for in-depth analysis.	Some of the activities like simplification of registers and developing performance indicators can be attempted in their suitable time frame.	The Program refinement can be immediately undertaken so that it can be installed in the oblasts where sufficient hardware is available through the Health I project.
7. Establishing interdepartmental coordination mechanism	Inter departmental coordination mechanism with the ZAGS system, Sanitary and Epidemiology system for data sharing and comprehensive health planning needs to be established.	Coordination has to be more of data sharing through standardized protocols.	Some form of coordination is already in practice but needs to be formalized.
8. Review of the HMIS	<p>Through continuous review is proposed during the project implementation, a final review will be more useful in terms of experiences and expectations.</p> <p>The review could cover the impact, usefulness, utilization and participation by the concerned managers and others etc.</p>		

Note: Some of the above activities are independent and some of them are linked with others and need sequencing. Simplification of registers and reports is a very tricky issue and may need more support from the top management, however the other activities like MEDSTAT program refinement, feedback module development, training etc can be carried on and when it is possible, the simplification of registers can be attempted.



**Figure 16.8 Flow Chart on the Simplification of Registers and Reports**

**Table 16.24 Training Program Components and Brief Explanation**

Name of the Training	Content	Targeted Trainees	Comments	Issues
Technical training HMIS	HMIS principles Bio-statistics, epidemiological analysis, computers, databases, Techniques of data collection, developing reliable mechanisms for validation, updation. Data analysis tools, techniques, presentation tools and methods,	Economists, statisticians	15 to 20* days in two sessions. TIPME, Tashkent and RIAC But, their training content has to be evaluated and may be redesigned.	TIPME offers training on HIS, but need to increase capacity to accommodate the increased numbers. RIAC will open a training division
Technical training Databases and computers etc.	MS ACCESS programming, visual basic programming and RDBMS like oracle etc.	Computer programmers and others	90* days intensive training. In Tashkent and the respective ones in OBLASTS through reputed computer training institutes	
HMIS Management training	Data analysis tools, techniques, presentation tools and methods, Utilization of data for decision-making. Emphasis will be on planning and monitoring tools and techniques.	All functional officers at the Rayon, oblast and republican levels.	7* days fulltime. TIPME, Tashkent and RIAC	

Remark: \*) The number of days training proposed is only indicative and needs to be further examined through a systematic training need analysis

(4) **HMIS Year Wise Activity**

**Table 16.25 Year Wise Activity**

Year	1	2	3	4	5	6	7
Activity →							
1. Simplification of registers and reports	■	■					
2. Development of feedback system		■	■				
3. Developing performance indicator system	■						
4. Training of the key HMIS personnel		■					
5. Equipping the oblasts and rayons with computers and communication system	■						
6. Refinement and installation of MEDSTAT in oblasts and Rayons.			■	■			
7. Establishing interdepartmental coordination mechanism					■		
8. Review of HMIS					■		

**16.5.10 Verifiable indicators**

- The number of decisions based on objective data and analysis.
- Timely submission of reports, quality and reliability of the information
- Readily available data on programs and on women and child health indicators.
- Reduced time spend in maintaining the registers, submitting the reports.
- Availability of interrelated departments data with each participating department
- Regular feedback available to the levels below

**16.5.11 Project Inputs**

- Technical cooperation through short term consultants
- HMIS training to the technical people and HMIS orientation training to the Health managers and training on software to the programmers.
- Computers at OBLAST and RAYON health statistics bureaus
- Systems development and simplification of registers, reports and feedback mechanism

**Table 16.26 Project Inputs**

Action Plan	Item	Duration/Scale
1. Simplification of registers and reports	Consultants time	6 months
2. Development of feedback system	Consultants time	3 months
3. Developing performance indicator system	Consultants time	3 months
4. Training of the key HMIS personnel	Training Institutes/ RIAC	RIAC staff Oblast staff Rayon staff
5. Equipping the oblasts and Rayons with computers and communication system	Computers and Network	Five Oblasts 50 Rayons (the others are covered by WB I and II)
6. Refinement and installation of MEDSTAT in oblasts and Rayons.	Systems analyst	6 months of systems analyst
7. Review of HMIS	Consultants time	3 months
Project Cost	US\$ 944,000- (Nine Hundred and Forty-Four Thousand only)	

**16.5.12 Project Management Issues and Coordination with Other Departments – Suggestions**

**(1) Sequential Activities and Independent Activities**

Some of the above activities are independent and some of them are linked with others and need sequencing. Simplification of registers and reports is a very tricky issue and may need more support from the top management, however the other activities can be carryon and when it is possible, the simplification of registers can be attempted.

**(2) Computerization of Health Data**

The slow but inevitable process of computerization has been taking place. Starting with oblasts this year the MEDSTAT program is going to be installed in the oblasts.

**(3) Present Way of Working**

At present RIAC has a huge pool of data entry operators and computers to enter the manual data that is received from the oblasts. But, with the computerization and soft data flowing from the oblasts, some of these activities and consolidation work is not required.

**(4) Need to Improve Quality of Data**

But, at present the MEDSTAT program can only provide for reports generation as per the existing manual formats. Good number of validation rules will have to be developed so that

data errors and deviations are flagged of for human verification. This process is to be done carefully in cooperation with the statisticians in the RIAC and OBLASTS.

In a couple of years computers are planned to be installed at all the rayons (already there are good number of hardware in the World Bank supported Rayons for the population database and others work) and provide for the data entry software at the rayon level. Then the process of consolidation at oblast and republican levels is instant.

**These changes/improvements have lot of impact on the style, functioning and the kind of work the statistical bureaus function in Uzbekistan.** Traditionally they deal with the aggregation of the statistics at different levels with more focus on the timeliness of reporting and conformity to the formats and others. Computerization and automatic consolidation will make these tasks redundant. The availability of disaggregated data (RIAC can have RAYON data, may be even HOSPITAL LEVEL DATA, Oblasts will have rayon data and even hospital level data) will give new opportunities for in-depth analysis and quality improvements and effective feedback. If the quality check/auditing system is not developed, there might be a danger of errors and low quality data entering into the system through the automated process

#### **(5) Need for Reorientation and Training**

These tasks will require extensive training and reorientation to the statistical staff at all levels. The training will have be more focused on improvements in the quality, methods to do so, in-depth analysis of the disaggregated data and identification of any patterns and trends or hotspot regions on a particular indicator or disease.

#### **(6) Other Agencies Plans**

SES is developing its own vertical information system.

- UNICEF is funding the immunization component of the information system, where in the data entry and report generation software on immunization data, supplies etc will be initially done at the oblast SES (later at rayon SES for all the immunization points) and the data is transferred to the republican SES and UNICEF for better project monitoring.
- SES plans to slowly computerize the rayon SES in such a way that data on diseases, immunization and other indicators flows automatically to the oblast and

republican levels.

- At present the ZAGS system, which caters to the registration of births and deaths, seems to have no plans for the computerization at rayon level.

Overall the policy makers and program managers will have better access to online, qualitative data with which they can plan, monitor and take right decisions at the right time. Several simple but complicated issues of data monopoly, non-sharing among the required partners will have to be addressed slowly.



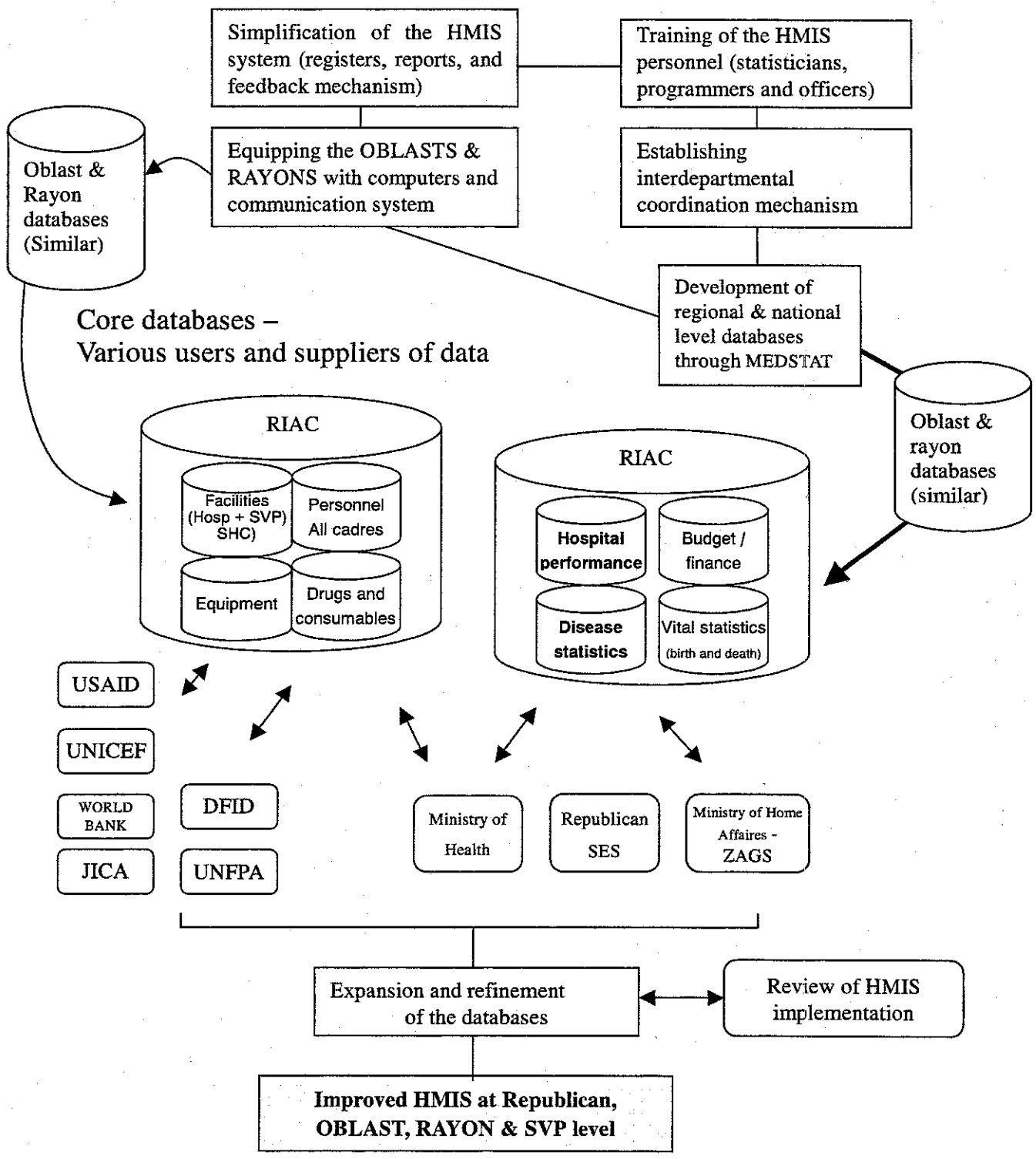


Figure 16.9 Project Image Chart for the HMIS

## **16.6 Improvement of Blood Transfusion System**

### **16.6.1 Background and Rationale**

The problems of blood transfusion system in Uzbekistan are; the blood demand with supply cannot be fully grasped in the existing system; the blood test system and its quality are questionable; the cost for blood transfusion is unreasonable.

In Uzbekistan, Republican Blood Center (RBC) is a central organization of the blood transfusion system. RBC is located adjacent to the Scientific Research Institute for Hematology and Blood Transfusions in Tashkent.

There are 23 Oblast Blood Center (BC) and 235 Blood Transfusion Unit (BTU) in Uzbekistan. At Oblast level, BCs manufacture blood products, and supply them to all medical facilities in recipient Oblast. BTUs are attached to the medical facilities.

BTU collects necessary volume of blood and supplies to the hospital where BTU is located within. BTU does not manufacture blood products, but Oblast BC supplies them to BTU whenever necessary.

The volume of blood sample collection is not very large at BC. By consolidating of the chain activities of blood transfusion (blood collection, blood test, storage, supply and appropriate use) will be carried out. As a result, it will contribute to more proper supply of safer blood and therefore more effective promotion of blood transfusion in clinical settings.

Furthermore, with the existing equipment, quality of blood test and safety in collecting blood at BTU are often insufficient; volume of blood collected at each BTU is small. Consolidation of blood test, storage and supply operated at each BTU into one Oblast BC will increase efficiency in activities. This is critical for keeping safety in blood and securing the balance of supply and demand of the blood transfusion at all Oblast level.

Infectious diseases by blood transfusion need to be discussed, as securing the safety in blood is an urgent matter.

First, although the incidence of hepatitis type B in recent years is relatively declining nationwide, it significantly increased in 2000 in Tashkent city and Bukhara Oblast.

The hepatitis type B can be infected through mother to infant route, process of medical

treatment and intravenous injection by drug addict. Moreover, the number of HIV carriers has been increasing rapidly in recent years as shown in the table below, and the main reason for this is intravenous injection by drug addict. The blood transfusion system in Uzbekistan is basically similar to those in advanced countries as blood donation system is commonly in place. However, blood is donated by patient's family, or the family buys blood from strangers. Importantly, drug addicts are high-risk group for HIV infection, and in fact the rate of these drug addicts among blood sellers is very high. This suggests the critical situation is occurring in the blood transfusion mechanism of this country.

Securing safety in blood is indispensable to preventing further HIV infections. Therefore, it is recommended that the blood donation system should be changed from familial and/or paid donors to non-familial, voluntary donors as early as possible nationwide, and the quality of blood testing for infectious diseases should be improved.

**Table 16.27 HIV Testing Result of Blood Donors**

Year	No. of Tested	Positive No.	Definitive No.	Positive/100,000
1998	261,723	71	2	0.76
1999	247,908	78	0	0
2000	224,345	87	6	2.68
2001	233,517	198	22	9.40
2002	215,287	343	100	46.05

### 16.6.2 Overall Goal

To strengthen the capability of blood testing, to establish safe blood supply, to secure the blood self-sufficiency of supply and demand, and to obtain the cost effective blood transfusion system by introduction of the non-familial, voluntary blood donation system nation-wide.

### 16.6.3 Objectives

For the establishment of the country-wise blood transfusion system, to establish the overall program for Oblast level blood transfusion system through strengthening of blood test capability and institutional building of blood transfusion system.

### 16.6.4 Project Location

Selection from the areas where Baseline survey was implemented, and surrounding Oblasts

of project area

#### **16.6.5 Target Beneficiaries**

Target beneficiaries are inhabitants living in the project areas. When design and know-how obtained through the project implementation are expanded to other areas, the target beneficiaries will be expanded to the nation level accordingly.

#### **16.6.6 Project Duration**

Three years from 2004 to 2007

- a. Study and formulation of program: 6 months
- b. Detailed design and preparation of tender document: 4 months,
- c. Tendering: 2 months
- d. Construction and procurement/installation of equipment: 1 year
- e. Training, monitoring, analysis and formulation of standard package model: 1 year

#### **16.6.7 Implementation Agency**

The main implementation body at Republican level will be the implementation committee organized under the deputy minister of Health. The director of Republican Blood Center will also be a member. The director of Oblast Health Department is the counterpart for administration at Oblast level. Director of Oblast level Blood Center and Oblast General Hospital are actual implementation body of this project.

#### **16.6.8 Project Components and Activities**

##### **(1) Stage-wise Programs**

This improvement program will apply stage-wise approach. First stage is to plan implementation program. Second stage is to implement the program including preparation of the infrastructure (equipment and facilities). Third stage is to monitor and evaluate the implemented program, and to formulate the package model to expand to national level. Through the implementation of program (pilot study), lessons learned (how to implement the pilot study, how to achieve the result successfully) will be obtained

and it will be reflected upon the appropriate package model for other areas. The final stage is to expand the package model to other areas, followed by phase II project. The step-wise programs are shown below:

**Step 1 :** Formulation of and preparation of the pilot model program, detailed action plan and design for the blood transfusion system at Oblast level

- a. Implementation of feasibility study on the consolidation of model blood transfusion system at Oblast level and formulation of improvement programs and action plans for the pilot study areas.

**Step 2 :** Establishment of model blood transfusion system at the model blood transfusion center at Oblast level.

- a. Establishment of the consolidated central blood test center and integrated blood transfusion center
- b. Establishment of the consolidated blood transfusion management (blood collection, blood test, storage and supply)
- c. Strengthening of the central blood test laboratory
- d. Promotion of the blood transfusion system by blood donation
- e. Integration and rationalization of blood transfusion system at Oblast level

**Step 3:** Formulation of package model for expansion to national level through the above program implementation and monitoring of results

**Step 4:** Expansion of model system to other Oblasts (recommendation of phase II project)

## **(2) Logical Framework of the Project**

The framework of the proposed project is shown below;

**Table 16.28 Framework of the Improvement Program of  
Blood Transfusion System**

Narrative Summary	Indicators	Data Sources	Assumptions
<p><b>Overall Goal</b> To strengthen the capability of blood testing, to establish safe blood supply, to secure the blood self-sufficiency of supply and demand, and to obtain the cost effective blood transfusion system by introduction of the non-familial, voluntary blood donation system nation-wide.</p>	<ul style="list-style-type: none"> <li>-Sufficient blood sample collection with safety for the urgent needs</li> <li>-No. of infectious diseases by blood transfusion</li> </ul>	<ul style="list-style-type: none"> <li>-Record &amp; report</li> <li>-Health indicator</li> </ul>	<ul style="list-style-type: none"> <li>- Stability of government &amp; health reform policy</li> </ul>
<p><b>Objectives</b> For the establishment of the country-wise blood transfusion system, to establish the overall program for Oblast level blood transfusion system through the strengthening of blood test capability and institutional building of blood transfusion system</p>	<ul style="list-style-type: none"> <li>-Structure of blood transfusion system with cost-effectiveness and safety</li> <li>-Model package (information system for urgent blood supply, establishment of laboratory system and storage-logistics system)</li> </ul>	<ul style="list-style-type: none"> <li>-Report</li> <li>-Program paper</li> </ul>	<ul style="list-style-type: none"> <li>-Stability of needs for Oblast &amp; national health improvement &amp; safety blood supply</li> </ul>
<p><b>Outputs</b></p> <p><b>Step 1</b> Formulation of and preparation of the pilot model program, detailed action plan and design for the blood transfusion system in Oblast level</p> <p><b>Step 2</b> Establishment of model blood transfusion system at the model blood transfusion center in Oblast level</p> <ul style="list-style-type: none"> <li>a. Integration and rationalization of blood transfusion system in Oblast level</li> <li>b. Establishment of consolidated blood transfusion management</li> <li>c. Strengthening of the central blood test laboratory</li> <li>d. Promotion of the voluntary donor blood transfusion system</li> </ul>	<ul style="list-style-type: none"> <li>- Program (establishment of blood transfusion center and unit, information system, safe blood transfer system and examination test system)</li> <li>- Action plan (laboratory standard system, epidemiological research system, Obligation system which protects patient information, safety inspection)</li> <li>- Provision of infrastructure (covered field &amp; area)</li> </ul> <ul style="list-style-type: none"> <li>a. -Blood sample Collection</li> <li>. -Function of blood transfusion center</li> <li>b.Improved resource allocation &amp; financing</li> <li>c. -Lab.test</li> <li>-Lab. technology</li> <li>d. Blood sample Collection</li> <li>-Promotion/guidance</li> </ul>	<ul style="list-style-type: none"> <li>- F/S Report</li> <li>- Action &amp; detailed design paper</li> </ul> <ul style="list-style-type: none"> <li>a.-Record &amp; report</li> <li>b.-Record &amp; report, -Financing sheet</li> <li>c.-Record</li> <li>-</li> <li>d.-Record</li> </ul>	<ul style="list-style-type: none"> <li>-Stability of government &amp; health reform policy</li> <li>-Needs of Oblast &amp; national health improvement &amp; safety blood supply</li> <li>-Fully support from Uzbekistan side</li> <li>-Appointment of C/Ps properly</li> <li>-Macro-economy growing</li> <li>-Collaboration with donor activities</li> </ul>

Narrative Summary	Indicators	Data Sources	Assumptions
<b>Step 3</b> Formulation of package model for expansion to countywide through the above program implementation and results of monitoring	-Monitoring - Package model	- Report - Program paper	
<b>Activities</b>  (See Table 16.29)	<b>Inputs</b>  (See "(3) Inputs of the Program")	(See Table 16.29)	<b>Pre-conditions</b>  -Needs of health improvement & safety blood supply -No disaster & plague

## (2) Project Activities and Components

Project activities and components to be implemented during the Pilot Study period are shown in the table below. This program aims at establishing effective blood transfusion system and capacity building at Oblast level through the centralization and consolidation of the functions. Also, it is to introduce the appropriate voluntary donor blood transfusion system and to establish the qualified blood test. The main components are technical transfer to the counterparts, formulation of model programs and obtain the lessons learned, and provision of infrastructure (laboratory and equipment). The activities are divided into three steps, 1) feasibility study and designing, 2) implementation, and 3) monitoring and package model formulation.

**Table 16.29 Activities and Components of the Project**

Activity/Component
<b>Step 1</b> 1. To implement the feasibility study on the improvement of blood transfusion system in model Oblast and formulate the improvement programs and action plans for the pilot study areas 2. To formulate the detailed design of equipment procurement and facility construction of the blood transfusion center in the Oblast General Hospital complex 3. To implement the tendering and provision for equipment and facility construction
<b>Step 2</b> a.1 To establish the effective central blood test department/laboratory in Oblast level a.2 To improve the consolidated Oblast blood transfusion center a.3 To establish the effective use of resources (human resources, financing, laboratory equipment) through the centralization and consolidation of blood transfusion system a.4 To strengthen the information and database system of supply and demand of blood, and blood transportation for blood collection, storage and supply a.5 To strengthen the blood collection activities and functions at Blood center in rural areas b.1 To strengthen the rationalized and effective blood transfusion system (security of voluntary

Activity/Component
<p>blood donation mobile, collection of blood sample, laboratory tests, storage, supply) and security of blood balance of supply and demand in Oblast level</p> <p>b.2 To improve the blood transfusion activities/works (to establish the higher priority services in the limited budget)</p> <p>b.3 To strengthen the Blood transfusion center's administration and financing management capability and system for effective blood transfusion activities and effective use of financing</p> <p>b.4 To strengthen the collaboration and cooperation with Blood center and medical facilities for the establishment of Oblast blood transfusion system</p> <p>b.5 To establish the monitoring system for the blood transfusion reaction for the patients after blood transfusion</p> <p>c.6 To strengthen the operation and maintenance system for the facility and equipment</p> <p>b.7 To establish the education and training system for securing the safety in blood transfusion</p> <p>c.1 To strengthen the blood test capability and quality control at the central laboratory</p> <p>c.2 To improve the retraining and fostering system of the Blood laboratory technician (there are many cases that compatible blood tests are carried out by physicians and nurses in the medical facilities)</p> <p>d.1 To enlighten and promote the voluntary donor blood transfusion system to the inhabitants</p>
<p><b>Step 3</b></p> <p>1. To monitor and evaluate the pilot study implementation</p> <p>2. To analyze the result and identify the best practices, lessons learned.</p> <p>3. Formulation of package model to other Oblasts (manual/guideline for blood transfusion management, financing, blood donation promotion, quality control of blood test, blood collection-test- storage-supply management, equipment operation and maintenance, standard equipment list, etc.)</p>
<p><b>Assumptions :</b> C/Ps and trainees will not leave their work, positions or health sectors</p>

Note : Heading number of each Activities/Components corresponds to Outputs

### (3) Inputs of the Program

For the implementation of this program, both of the donor and Uzbekistan sides will input the following:

#### 1) Donor Side

- Implementation of feasibility study on the improvement of the blood transfusion system in model Oblast and formulation of improvement programs and action plans
- Technical assistance of the blood transfusion management, quality control of laboratory test, and operation and maintenance of equipment
- Establishment of consolidated central blood laboratory and central blood transfusion center (see Appendix Figure 16.2.1 and 16.2.2)
- Provision of equipment for blood transfusion (see Appendix Table 16.3)
- Training for the blood transfusion management and administration staff (including overseas training)
- Training for the staff of blood laboratory tests (including overseas training)



2) Uzbekistan Side

- Appointment of Counterparts
- Arrangement of the Office Space
- Tax exemption of equipment and material procurement for the project implementation
- Organization of the steering, technical and coordination committee for the Project

The recommended equipment list for this project and drawings of central blood laboratory/central blood transfusion center are attached in Appendix Figure 16.2.1-16.2.4 and Appendix Table 16.3.

Also, the flow chart of the recommended blood transfusion system (collection -examination -test -processing -storage -supply) is shown below;

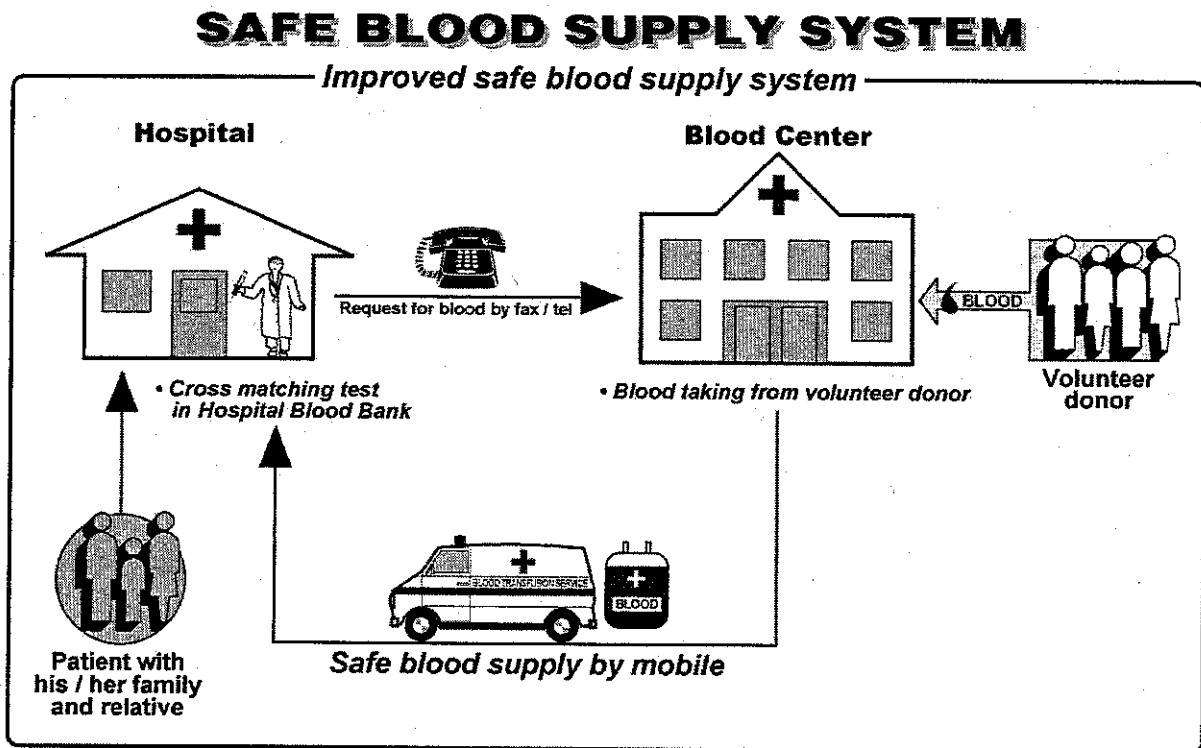


Figure 16.10 Recommended Blood Transfusion System

**(4) Timetable of implementation by the Activities Bundles**

The timetable of the program is shown below;

**Table 16.30 Timetable of Project Implementation**

Activity/Component		1st Year	2nd Year	3rd Year
<b>Step 1</b>				
1.	To implement the feasibility study on the improvement of blood transfusion system in model Oblast and formulate the improvement programs and action plans for the pilot study areas			
2.	To formulate the detailed design of equipment procurement and facility construction of the blood transfusion center in the Oblast General Hospital complex			
3.	To implement the tendering and providing for equipment and facility construction			
<b>Step 2</b>				
a.1	To establish the effective central blood test department/laboratory in Oblast level			
a.2	To improve the consolidated Oblast blood transfusion center			
a.3	To establish the effective use of resources (human resources, financing, laboratory equipment) through the centralization and consolidation of blood transfusion system			
a.4	To strengthen the information and database system of supply and demand of blood, and blood transportation for blood collection, storage and supply			
a.5	To strengthen the blood collection activities and functions at Blood center in rural areas			
b.1	To strengthen the rationalized and effective blood transfusion system			
b.2	To improve the blood transfusion activities/works			
b.3	To strengthen the Blood transfusion center's administration and financing management capability and system for effective blood transfusion activities and effective use of financing			
b.4	To strengthen the collaboration and cooperation with Blood center and medical facilities for the establishment of Oblast blood transfusion system			
b.5	To establish the monitoring system for the blood transfusion reaction for the patients after blood transfusion			
b.7	To strengthen the operation and maintenance system for the facility and equipment			
c.1	To strengthen the blood test capability and quality control at the central laboratory			
c.2	To improve the retraining and fostering system of the Blood laboratory technician (there are many cases that compatible blood tests are carried out by physicians and nurses in the medical facilities)			
d.1	To enlighten and promote the voluntary donor blood transfusion system to the inhabitants			
<b>Step 3</b>				
1.	To monitor and evaluate for the pilot study implementation			
2.	To analyze the result and identify the best practices, lessons and learns			
3.	Formulation of package model to other Oblasts			
<b>Step 4</b>				
1.	To expand the package model to the other Oblasts (recommendation of phase II project)			

**(4) Assignment and Schedule of the Technical Assistance and Consultant**

The assignment and schedule of the consultant and/or expert for the feasibility study, supervision of the construction and equipment installation, technical assistance and model program formulation are shown below;

**Table 16.31 Assignment of the Consultant/Expert**

Expert/Specialty	1st Year			2nd Year			3rd Year		
1 Project Manager	[Shaded]								
2 Blood Transfusion Management	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]
3 Equipment/Facility Management	[Shaded]	[Shaded]	[Shaded]	[Shaded]			[Shaded]	[Shaded]	[Shaded]
4 Laboratory Test/Quality Control	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]	[Shaded]
5 Coordinator	[Shaded]								

### 16.6.9 Project Management Issues

- This project will directly appoint the deputy minister head of project implementation.
- For the success of the project, collaboration and coordination among Ministry, Oblast, Oblast General Hospital and Republican Blood Center are desirable.
- This project will organize the steering and technical committee for designing programs, monitoring, analyzing, establishing standards and guidelines, and formulating the model package.
- Rationalization, centralization and consolidation of the blood transfusion center are critical, thus, it is necessary to establish central blood test laboratory at Oblast level.
- This project aims at introducing the voluntary blood transfusion system to Uzbekistan; therefore Ministry of Health should fully support the introduction of new system.
- Several donors and NGOs are implementing and planning HIV programs. Therefore, collaboration and partnerships with these donors and NGOs programs are desirable for the effective implementation of the proposed project.

### 16.6.10 Other Development Issues

The purpose of this project involving a pilot study is to establish the model for consolidation and centralization of the blood transfusion system, and to introduce voluntary blood transfusion system at Oblast level so that they will be expanded to other Oblasts. It is very important to avoid the expansion of infectious diseases in terms of securing the safety in blood transfusion. In addition, main activities of this project are institutional building and capacity building for Oblast level blood transfusion system. Therefore, it considers the expansion of package model during the pilot study implementation period.

This M/P recommends the implementation of the Phase II Project (expansion to the countrywide) after this Project.

For the introduction of voluntary blood transfusion system, the community organization of Mahalla may be given a viable role. The enlightenment and promotion for voluntary donor blood transfusion system to the inhabitants is important activities of this project to secure the appropriate blood samples. Therefore, the project requires cooperation and collaboration between Mahalls and blood transfusion center.

### 16.6.11 Estimated Project Cost

The total estimated project cost is approximately US\$ 4,432,000 (four million, four hundred and thirty-two thousand dollars). The details are shown in the following table.

**Table 16.32 Estimated Project Cost**

(Unit 1,000 US\$)

Items	1st Year	2nd Year	3rd Year	Total
1) Personnel Expense	797	820	750	2,367
a. Technical Assistance/Consultant Fee (include direct personnel cost, general/technical expense, per diem, and international travel cost)	723	767	691	2,181
b. Local Expense of Project Implementation	74	154	58	186
2) Education & Training Cost	8	8	8	25
a. Overseas Training	6	6	6	19
b. In-country Training	2	2	2	6
3) Equipment Installation	0	1,080	0	1,080
4) Construction	0	960	0	960
<b>Total</b>	<b>805</b>	<b>2,869</b>	<b>758</b>	<b>4,432</b>

Note: Foreign exchange rate is 1 US\$ = 120 Japanese Yen in August 2003.

Price adjustments due to the inflation are not factored on.

Estimation is based on the international rates.

## 16.7 Monitoring, Evaluation and Cost Estimation of the Priority Program

### (1) Monitoring and Evaluation for the Priority Programs Implementation

The indicators of monitoring and evaluation how much improvement was made in the health care and medical services situation by implementing of the proposed priority program is to be prepared.

Setting of indicators, evaluation on execution performance, and social needs concerning the priority program of M/P, will be selected.

Main concept of the setting of the indicators is to confirm and identify the effectiveness of

priority program implementation, meet with social needs, and relevance (justification) of the program. Main points of the evaluation and monitoring indicators are shown below;

- 1) Monitoring and Evaluation for Social Aspect
  - Equity of the beneficiaries for the social services aspect (gender and poverty issues)
  - Covering area for the contribution of improvement of the medical services
  - Minimization of medical resources spending
- 2) Monitoring and Evaluation for PHC Aspect
  - Contribution of the improvement of health care situation and public health at PHC level (community level)
  - Sustainability of the program implementation

3) Monitoring and Evaluation for Improvement of Health Indicators

Monitoring and evaluation of the priority program are to be carried out quantitatively : how much improvement was made in the health indicator at recipient area and/or Uzbekistan by the implementation of the priority program.

From these viewpoints, each item of the development objectives, strategies and activities of this M/P is to be examined with overall viewpoint; how it is achieved or is improved through the implementation of priority program. The indicators for overall monitoring and evaluation are shown in the table below.

The monitoring and evaluation indicator in individual program, is described in PDM of each priority program.

**Table 16.33 Relation with Objectives/Strategy/Activities and Programs**

<b>Objective A "Improvement of the quality of medical services and enhancement of equal access to medical services for all population "</b>		
<b>Strategy A1</b>	<b>Activities</b>	<b>Monitoring Indicator</b>
"Improvement and establishment of the qualified Primary Health Care and Maternal and Child Health Care services"  <i>16.2: Health Insurance Program</i> <i>16.3:Rayon Medical Services</i> <i>16.4:Oblast Medical Services</i>	A1.1 Establishment and improvement of the function and facility of SVP, SVA, and GVP, which are, first access point for the out-patients	No. of the patient is increasing
	A1.2 Establishment of the equity of the medical services level among urban- rural, and public- private medical facilities, through the strengthening of supervising and managing capability of government.	No. of the trained manager is increasing (including of the project "Health I, II" training)
	A1.3 Improvement of the technology, skill and capability of the medical provider (physicians, nurses, para-medical staffs and so on)	No. of the technical transferred staff who is increasing (including of the project "Health I, II" training)
	A1.4 Strengthening of health promotion and IEC activities to inhabitants, and sanitary and epidemiological control in communities	No. of the home visit and seminars in SVP is increasing
	A1.5 For the MCH services, to improve the CRH capabilities which is first access point of in-patients in rural level	No. of the pre/ante-natal care services is increasing
	A1.9 Strengthening of visiting family doctors, nurses and midwives system	No. of the home visit is increasing
<b>Strategy A2</b>	<b>Activities</b>	<b>Monitoring Indicator</b>
"Improvement of the quality for clinical services and administrative capability of medical facilities"  <i>16.2: Health Insurance Program</i> <i>16.3:Rayon Medical Services</i> <i>16.4:Oblast Medical Services</i> <i>16.6:Blood Transfusion System</i>	A2.1 Improvement of facilities and equipment for the availability of high quality of medical services	Condition of drug and equipment supply
	A2.2 Strengthening of management capability for administration, financing, and medical record	Inventory and financial record are in placed
	A2.3 Development of guidelines for clinical services and preventive medicine	No. of seminar and existing of guidebook
	A2.4 Development of standard for executive essential drug and equipment for effective qualified medical services, and strengthening of drug management, and operation and maintenance system	Inventory and drug record are in placed
	A2.5 Development of the standard for human resources allocation for every level of medical facilities	No. of medical staff and employment allocation
	A2.6 Training and fostering of the physician, nurses, lab. technician, pharmacist, para-medical, staffs managing staff, financing staff, operation and maintenance staff, other categories of staff as necessary	No. of trained medical staff and employment allocation
	A2.7 Strengthening of laboratory tests and diagnostic examination capabilities	Condition of drug and equipment supply No. of seminar and trained medical staff
	A2.8 Development of the adequate and safe blood transfusion system	No. of blood transfusion station
<b>Strategy A3</b>	<b>Activities</b>	<b>Monitoring Indicator</b>
Improvement of the medical technology and research activities"	A3.1 Improvement of the State level specialized medical institutes for the researches activities and specialized doctors fostering functions	No. of the facility and doctors are decreasing

<b>16.4:Oblast Medical Services"</b> <b>16.6:Blood Transfusion System</b>	A3.2	Strengthening of capability of RIAC, SES and Institution for Health for medical statistics analysis, researches and methodology development	Area of computer network system is developing
	A3.3	Improvement of capability of personnel for medical technology and research, equipment, facilities and function of laboratories	No. of trained medical staff , seminar and new equipment allocation No. of basic diagnosis package is increasing
	A3.4	Establishment of guidelines for medical technology and research development, and organization of scientific medical committee in the Ministry of Health	No. of trained medical staff , seminar and guidebook allocation
	A3.5	Strengthening of the collaborations among universities, institutes, official and private organizations, NGOs and international organizations for the improvement of the medical technology and research activities	No. of trained medical staff , seminar and guidebook allocation
<b>Objective B "Establishment of effective system of medical services for the population's health"</b>			
<b>Strategy B1</b>	<b>Activities</b>		<b>Monitoring Indicator</b>
"Defining of the medical facilities referral and improvement of patients' referral system"  <b>16.3:Rayon Medical Services</b> <b>16.4:Oblast Medical Services</b>	B1.1	Simplifying and arrangement of medical facility referral (referral stage and facilities' number) and stage of patient referral for effective medical services	No. of the facility and doctors are decreasing No. of the referred patient
	B1.2	Optimization of the medical facilities and system such as disease based specialized medical facilities, in-patient and out-patient medical facilities, and separated system for general-specialized –emergency	No. of the facility and doctors are decreasing No. of the referred patient, inpatient and outpatient
	B1.3	Strengthening of SVP as first access point, and establishment of the patient referral to higher-level facilities, and improvement of patient transportation system	No. of the referred patient and outpatient of SVP
	B1.4	Strengthening of the function of RCH for the improvement of medical services at Rayon level, strengthening of the function of RCH	No. of the referred patient, inpatient and outpatient
	B1.5	Improvement and strengthening of the Oblast General Hospitals, for establishing medical services system at Oblast level	No. of treatment of each department No. of the referred patient, inpatient and outpatient
	B1.6	Improvement of the functions such as medical services, researches and fostering specialized doctors, in top referral specialized institutes at State level.	No. of the facility and doctors are decreasing No. of the referred patient, inpatient and outpatient
	B1.7	Optimization of emergency (medical facilities) and ambulance (call center) system for more effective emergency services	No. of order of ambulance No. of referred patient
<b>Strategy B2</b>	<b>Activities</b>		<b>Monitoring Indicator</b>
"Improvement and rationalization of Rayon and Oblast level medical services"	B2.1	Integration and consolidation of medical facilities with same specialties and out-patient and in-patient medical facilities	No. of the facility and doctors are decreasing No. of the referred patient
	B2.2	Transition of the specialized medicine from disease bases to organ bases	No. of the facility and doctors are decreasing No. of the referred patient

<b>16.3:Rayon Medical Services</b> <b>16.4:Oblast Medical Services</b> <b>16.6:Blood Transfusion System</b>	B2.3	Establishment of the integrated general hospital of CRH and Oblast General Hospital, consisting of specialized medical services departments, general out-patient department, in-patients departments, emergency department, and medical services supporting departments	No. of the facility and doctors are decreasing No. of the referred patient
	B2.4	Development of integrated laboratory test system at Oblast level (establishment of central laboratory), for the function of diagnostic examination to be centralized and established into the foregoing consolidation of CRH and Oblast General Hospital	No. of trained medical staff , seminar and new equipment allocation No. of basic diagnosis package is increasing
<b>Strategy B3</b>	<b>Activities</b>		<b>Monitoring Indicator</b>
"Improvement of medical facilities, equipment, drug supply and in-hospital functions"  <b>16.3:Rayon Medical Services</b> <b>16.4:Oblast Medical Services</b>	B3.1	Improvement of hospital function and movement line for patients and hospital staffs	No. of innovated facilities
	B3.2	Improvement of sanitary conditions of hospitals and provision of standard equipment for more effective and qualified medical services	No. of trained medical staff , seminar and new equipment allocation No. of basic diagnosis package is increasing
	B3.3	Strengthening of operation and maintenance system for the facility and equipment, and establishment of guidelines and manuals	No. of maintenance contract with Medtechnika No. of inventory and existing guidebook
	B3.4	Strengthening of drug management system (demand and supply, inventory), and establishment of executive essential drugs list, drug management guidelines and standards	Existing of inventory and drug record No. of seminar and trained staff
	B3.5	Training and fostering of the physicians, nurses, para-medical staffs, pharmacists and operation and maintenance staffs in order to strengthen in-hospital functions	No. of seminar and trained staff No. of inventory and existing guidebook
	B3.6	Improvement of drug logistics and equipment maintenance system at both state and Oblast level	No. of seminar and trained staff No. of inventory and existing guidebook
<b>Strategy B4</b>	<b>Activities</b>		<b>Monitoring Indicator</b>
"Establishment of health management information system"  <b>16.5:Health Information System</b>	B4.1	Simplifying the information flow of health, medical, sanitary and epidemiology, demography information and data	Area of computer network system is developing No. of seminar and trained staff
	B4.2	Improvement of the laboratory test and diagnostic examination capabilities for the quality control of data sources	How much quality control is regulated Record of inventory and surveillance data book
	B4.3	Development of integrated health information system database and software, and provision of the equipment for digital data processing to the Rayon level	Area of computer network system is developing
	B4.4	Training and fostering of the qualified health information system personnel and establishment of training system for the personnel in rural areas	Area of computer network system is developing No. of trained staff and seminar
<b>Objective C " "Improvement of the effective use of the health financing and introduction of new financing mechanism"</b>			
<b>Strategy C1</b>	<b>Activities</b>		<b>Monitoring Indicator</b>
"Improvement of effective use health budget"	C1.1	Minimization of medical expenditure through rationalization and centralization of medical facilities, referral system and laboratory test system	No. of facilities is decreasing Hospital expenditure is decreasing in some department



<b>16.1: Health Financing</b> <b>16.4: Oblast Medical Services</b>  <b>16.5: Health Information System</b> <b>16.6: Blood Transfusion System</b>	C1.2	Strengthening of management system for medical record and drug prescription record for avoiding duplicate and unnecessary medical treatment and cost	No. of examination and expenditure Inventory of diagnosis and patient history
	C1.3	Appropriate spending of medical financing on standardization of equipment and executive essential drugs, and improvement of management capability for inventory, log and maintenance books	No. of examination, drug and expenditure for consumables Inventory of diagnosis and patient history
	C1.4	Development of effective budget allocation system based on the health information system	No. of referred patient Comparison with expenditure and treatment cost
	C1.5	Minimization of medical cost in the medical facilities by providing more adequate and qualified medical services to the patients so that period of treatment and hospitalization will be shortened.	No. of patients and bed occupancy Hospital expenditure and no. of treatment
<b>Strategy C2</b>	<b>Activities</b>		<b>Monitoring Indicator</b>
"Strengthening of the financing management capability for governmental administration and medical facilities"  <b>16.1: Health Financing</b> <b>16.4: Oblast Medical Services</b> <b>16.5: Health Information System</b>	C2.1	Strengthening of health financing management system and monitoring capability in the governmental organizations	Change in the financing allocation for health facilities
	C2.2	Establishment of effective spending of expenditures at each medical facility to strengthen their financing and managing capability	Change in the allocation of health expenditure. No. of trained management staff
	C2.3	Establishment of system for monitoring and reporting of financing status and medical records at related organizations (state government, rural governments and medical facilities)	Change in the allocation of health expenditure.
	C2.4	Training and fostering of the financing and managing personnel at related organizations (state government, rural governments, medical facilities and insurance associations)	No. of trained management staff Covering area of insurance association
<b>Strategy C3</b>	<b>Activities</b>		<b>Monitoring Indicator</b>
"Improvement of the preventive medicine and encouragement of medical treatment at earlier stage, to minimize medical treatment cost"  <b>16.3: Rayon Medical Services</b> <b>16.4: Oblast Medical Services</b> <b>16.6: Blood Transfusion System</b>	C3.1	Strengthening of health promotion and IEC activities to inhabitants to minimize medical treatment cost	No. of seminar of IEC Change and tendency of health expenditure
	C3.2	Improvement of sanitary and epidemiological conditions in communities to reduce infectious diseases	No. of seminar of IEC No. of patient in SVP
	C3.3	Promotion of vaccination, EPI and DOTS program as preventive medicine	Coverage of vaccination and seminar of IEC
	C3.4	Improvement on the quality of GP, family doctor and emergency medical services system, and provision of medical information to the community inhabitants through strengthening the functions of SVPs and CRHs	No. of seminar of IEC No. of patient in SVP
<b>Strategy C4</b>	<b>Activities</b>		<b>Monitoring Indicator</b>
"Introduction of the new health financing system (universal coverage of health insurance) and establishment of Legislative Bases for it"	C4.1	Development of legislative bases and standards for the introduction of universal coverage of health insurance system	Covering area of insurance association
	C4.2	Establishment of the organization and system for the premiums collection, insurance request, and insurance disbursement	Covering area of insurance association

<b>16.2: Health Insurance Program</b>	C4.3	Training and fostering of the insurance managing personnel at related organizations (state government, rural government and medical facilities, insurance associations, makhallas)	Covering area of insurance association No. of trained insurance managing personnel
	C4.4	Establishment of system for monitoring and reporting of financing status and medical records at related organizations for introduction of insurance	Covering area of insurance association Comparison of insurance coverage and health expenditure
	C4.5	For the introduction of universal coverage of insurance, improvement of the quality and equity of medical facilities	Covering area of insurance association Comparison of insurance coverage and health expenditure Comparison of patient and insurance use
	C4.6	Development of standard tariffs of medical services and services packages for paid or free charged medical services	Covering area of standard tariffs and inventory Change and tendency of health expenditure
	C4.7	Promotion of knowledge and information for universal coverage insurance system to the inhabitants	Covering area of insurance association No. of seminar and trained inhabitants

## (2) Cost Estimation

### 1) Cost Breakdown of the Priority Programs

Cost breakdown of the each priority program is shown in the following pages; the priority programs which is to be expanded to the result of Pilot Study to the country, after implementation of the Pilot Study in certain area are shown.

### 2) Initial Capital Investment for the Priority Project Expansion

#### a. Health Insurance System

The cost of expansion to the national level is already included in the total project budget.

	4,054,000 US\$
i. Cost for the improvement of the finance base	850,000 US\$
ii. Cost for market reform	443,000 US\$
iii. Cost of the development and introduction of health insurance	1,290,000 US\$
vi. Strengthening of the capabilities for health financing reform	1,471,000 US\$

#### b. Rayon Level Medical Services System

Investment Cost for Central Rayon Hospital 734,000 US\$/each

i. Equipment Installation 726,000 US\$

(See the equipment list of Appendix Table 16.1)

ii. Renovation of Sanitary Utility 8,000 US\$

(Area of lavatory renovation is 40 sq.m)

c. Oblast Medical Services System

Investment Cost for Oblast General Hospital

i. Construction Case	15,850,000 US\$/each
- Equipment Cost	1,850,000 US\$/each
(See the equipment list of Appendix Table 16.2)	
- Construction of Building	14,000,000 US\$/each
(Total area of construction is 16,250 sq.m, see the drawings of Appendix Figure 16.1.1)	
ii. Renovation Case	4,350,000 US\$/each
- Equipment Cost	1,850,000 US\$/each
(See the equipment list of Appendix Table 16.2)	
- Renovation of Building	2,500,000 US\$/each
(Total area of renovation is 6,500 sq.m)	

d. Health Management Information System

The cost of expansion to the national level is already included in the total project budget.

	944,000 US\$
i. Simplification of registers and reports	120,000 US\$
ii. Development of feedback system	45,000 US\$
iii. Developing performance indicator system	45,000 US\$
iv. Training of the key HMIS personnel	480,000 US\$
v. Equipping with computers and communication system	200,000 US\$
vi. Refinement and installation of MEDSTAT in Oblasts and Rayons	24,000 US\$
vii. Review of HMIS	30,000 US\$

e. Blood Transfusion System

Investment Cost for Central Blood Transfusion Center	2,040,000 US\$/each
i. Equipment	1,080,000 US\$/each
(See the equipment list of Appendix Table 16.3)	
ii. Construction	960,000 US\$/each
(Total area of construction is 770 sq.m, see the drawings of Appendix Figure 16.2.1 & 2)	

**Table 16.34 Details of the Project Cost Estimation on the Priority Program for Rayon Level Medical services System**

**Table Expert Assignment and Fee (man/month)**

Expert/Specialty	1st Year	2nd Year	3rd Year	Total	Expert Grade (**** is high)
1 Project Manager	4.0	4.0	4.0	12.0	****
2 Hospital Management/Financing	4.0	4.0	4.0	12.0	****
3 Equipment/Facility Management	6.0	4.0	4.0	14.0	***
4 Drug Management	4.0	4.0	3.0	11.0	***
5 Quality Control	1.0	3.0	3.0	7.0	***
6 Preventive Medicine/PHC	3.0	3.0	3.0	9.0	**
7 Health Information/Hospital Data Management	3.0	3.0	3.0	9.0	**
8 Community Participation	3.0	3.0	3.0	9.0	**
9 Human Resources Development	2.0	3.0	3.0	8.0	**
10 Coordinator	2.0	2.0	2.0	6.0	*
M/M Total	32.0	33.0	32.0	97.0	
Fee Total (1,000 US\$)	546	561	543	1,650	

**Table Cost Breakdown**

(Unit :1,000 US\$)

	1st Year	2nd Year	3rd Year	Total
1 Consultant Fee	546	561	543	1,650
2 Per diem *	120	124	120	364
3 Transportation (International Air)	65 26 flight	73 29 flight	73 29 flight	210
4 High Level Assistant/Office Manager **	48 4 person	48 4 person	48 4 person	144
5 Low Level Assistant ***	6 14 man/month	7 18 man/month	7 17 man/month	20
6 Car Rental ****	12 23 unit/month	12 23 unit/month	12 23 unit/month	35
7 Abroad Training	6 2 person/month	6 2 person/month	6 2 person/month	19
8 In-country Training/Study Tour	2 10 person/week	4 20 person/week	3 15 person/week	9
9 Others (office/study expenses)	35	35	45	115
10 Equipment *****	726	0	0	726
11 Renovation *****	8	0	0	8
Total	1,573	869	856	3,298

Note: \* 125 US\$/day

\*\* 1,000 US\$/month

\*\*\* 400 US\$/month

\*\*\*\* 500 US\$/unit.month

\*\*\*\*\* see the equipment list of Appendix Table 16.1

\*\*\*\*\* Area of lavatory renovation is 40 sq.m

**Table 16.35 Details of the Project Cost Estimation on the Priority Program for Oblast Medical Services System**

**Table Expert Assignment and Fee (man/month)**

Expert/Specialty	1st Year	2nd Year	3rd Year	4th Year	Total	Expert Grade (**** is high)
1 Project Manager	12.0	12.0	12.0	6.0	42.0	****
2 Hospital Management/Financing	3.0	2.5	4.0	2.5	12.0	****
3 Equipment/Facility Management	5.0	12.0	4.0	2.5	23.5	***
4 Drug Management	3.0	1.0	2.0	2.5	8.5	***
5 Laboratory Test/Quality Control	3.0	1.0	3.0	2.5	9.5	***
6 Health Information	2.5	1.0	2.0	2.0	7.5	**
7 Coordinator	12.0	12.0	12.0	6.0	42.0	*
M/M Total	40.5	41.5	39.0	24.0	145.0	
Fee Total (1,000 US\$)	618	636	598	378	2,229	

**Table Cost Breakdown**

(Unit :1,000 US\$)

	1st Year	2nd Year	3rd Year	4th Year	Total
1 Consultant Fee	618	636	598	378	2,229
2 Per diem *	152	156	146	90	544
3 Transportation (International Air)	33 13 flight	18 7 flight	35 14 flight	25 10 flight	110
4 High Level Assistant/Office Manager **	24 2 person	24 2 person	24 2 person	12 2 person/6 month	84
5 Low Level Assistant ***	5 11.5 man/month	2 5.5 man/month	4 11 man/month	4 9.5 man/month	15
6 Car Rental ****	12 24 unit/month	8 16.5 unit/month	10 19 unit/month	6 11 unit/month	35
7 Abroad Training	6 2 person/month	6 2 person/month	6 2 person/month	6 2 person/month	25
8 In-country Training/Study Tour	2 10 person/week	2 10 person/week	3 15 person/week	2 10 person/week	9
9 Others (office/study expenses)	35	20	20	40	115
10 Equipment *****	0	1,850	0	0	1,850
11 Construction *****	0	14,000	0	0	14,000
12 Renovation *****	0	2,500	0	0	2,500
Total (Construction Case)	886	16,722	846	562	19,016
Total (Renovation Case)	886	5,222	846	562	7,516

Note: \* 125 US\$/day

\*\* 1,000 US\$/month

\*\*\* 400 US\$/month

\*\*\*\* 500 US\$/unit.month

\*\*\*\*\* See the equipment list of Appendix Table 16.2

\*\*\*\*\* Total area of construction is 16,250 sq.m (see the drawings of Appendix Figure 16.1.1)

\*\*\*\*\* Total area of renovation is 6,500 sq.m

**Table 16.36 Cost Breakdown for the Project  
on the Establishment of Health Management Information system**

Action plan	Item	In US \$
8. Simplification of registers and reports	Consultants time	6 months 120,000 (@ 20,000 per month)
9. Development of feedback system	Consultants time	3 months 45,000 (@ 15,000 per month)
10. Developing performance indicator system	Consultants time	3 months 45,000 (@ 15,000 per month)
11. Training of the key HMIS personnel	Training institutes/ RIAC	RIAC staff 30,000 (@ 1,000 for 30 staff) Oblast staff 150,000 (@ 1,000 for 150 staff) Rayon staff 300,000 (@ 750 for 400 staff) Sub Total 480,000
12. Equipping the Oblasts and Rayons with computers and communication system	Computers And Network	Five oblasts 50,000 (the others are covered by WB I and II) @ of 10,000 each 50 Rayons 150,000 (the others are covered by WB I and II) @ of 3,000 each Sub Total 200,000
13. Refinement and installation of MEDSTAT in Oblasts and Rayons.	Systems analyst	6 months of systems analyst 24,000 (@ of 2,000 per month)
14. Establishing interdepartmental coordination mechanism		No budget needed
15. Review of HMIS	Consultants time	3 months 30,000 (@ 10,000 per month)
<b>Total</b>		<b>944,000 US\$</b>

**Table 16.37 Details of the Project Cost Estimation on the Priority Program for Blood Transfusion System**

**Table Expert Assignment and Fee (man/month)**

Expert/Specialty	1st Year	2nd Year	3rd Year	Total	Expert Grade
1 Project Manager	12.0	12.0	12.0	36.0	****
2 Blood Transfusion Management	4.5	2.5	4.0	11.0	****
3 Equipment/Facility Management	5.0	12.0	4.0	21.0	***
4 Laboratory Test/Quality Control	3.0	1.0	3.0	7.0	***
5 Coordinator	12.0	12.0	12.0	36.0	*
MM Total	36.5	39.5	35.0	111.0	
Fee Total (1,000 US\$)	561	604	533	1,698	

**Table Cost Breakdown**

(Unit :1,000 US\$)

	1st Year	2nd Year	3rd Year	Total
1 Consultant Fee	561	604	533	1,698
2 Per diem *	137	148	131	416
3 Transportation (International Air)	25 10 flight	15 6 flight	28 11 flight	68
4 High Level Assistant/Office Manager **	24 2 person	24 2 person	24 2 person	72
5 Low Level Assistant ***	3 7.5 man/month	2 4.5 man/month	4 11 man/month	9
6 Car Rental ****	12 24unit/month	8 15.5unit/month	10 20unit/month	30
7 Abroad Training	6 2 person/month	6 2 person/month	6 2 person/month	19
8 In-country Training/Study Tour	2 10 person/week	2 10 person/week	2 10 person/week	6
9 Others (office/study expenses)	35	20	20	75
10 Equipment *****	0	1,080	0	1,080
11 Construction *****	0	960	0	960
Total	805	2,869	758	4,432

Note: \* 125 US\$/day

\*\* 1,000 US\$/month

\*\*\* 400 US\$/month

\*\*\*\* 500 US\$/unit.month

\*\*\*\*\* See the equipment list of Appendix Table 16.3

\*\*\*\*\* Total area of construction is 770 sq.m (see the drawings of Appendix Figure 16.2.1 & 2)

3) **Running Cost (administrative cost) for the Priority Project by Uzbekistan Side**

a. **Health Insurance System**

-Main running cost is administration cost 6,000 US\$/each  
of the new Oblast health insurance association

b. **Rayon Level Medical Services System**

-Running cost for new investment 7,260 US\$/each  
-% for the annual budget 4.9 %

-Most investment will be put into the renewal of existing equipment. Thus, the running cost may remain the same or slightly increase (Increased cost shall be in accordance with the number of examinations).

c. Oblast Medical Services System

- Running cost for new investment 18,500 US\$/each
- % for the annual budget 4.6 %

-Main concept is to consolidate and centralize medical facilities. Thus, the cost will be reduced by at least 20~30% (80,000~120,000sumUS\$) accordingly.

d. Health Management Information System

- Running cost will be mostly seminar/  
training and transfer of data/information 6,000 US\$/year by Central Government  
2,150 US\$/year by each Oblast Government

e. Blood Transfusion System

- Running cost for new investment 21,600 US\$/each

-Main concept of this project is consolidation and centralization of Blood Transfusion System. After consolidation, the running cost will be increased in accordance with the number of blood samples. Above cost is estimated after establishment of the voluntary blood donation system (1% of inhabitants will donate).

Main objective of this priority program aims at rationalizing the financing, making it more effective in use. Therefore, when salary increase needs to be considered for medical workers with more improved skills alongside the implementation of the programs, financial incentive can be re-allocated to them using the budget surplus made available by cost reduction. It can be achieved through more effective medical service, appropriate allocation of human resources, and improved skill in hospital management. Thus, increase of personnel cost is not included in the estimate of the priority programs.

**(3) Economic Evaluation**

The economic evaluation method is not applicable to the social sector development program like health care and medical services improvement. Therefore, priority programs were evaluated in terms of equitable distribution of limited medical resources to the beneficiaries. The consolidation and centralization of the medical facilities, laboratory function and blood testing system will contribute to an effective use of limited medical resources. The medical resources to the PHC level such as CRHs, which are the first access points for in-patients, will be more effectively allocated from the stand point of wider accessibility and early treatment for the beneficiaries- it will contribute to the

improvement of overall social welfare. Points of economic evaluation are shown below:

1) Delivery of the Health Care and Medical Services

Increase of the benefit to patients in the program coverage area by the provision of effective and better quality of medical services and cost reduction of the medical services

2) Coverage of the Health Insurance

Effective use of limited health financing for increased benefit to patients in the program coverage area

Expansion of the health insurance application, coverage of the insurance and situation of insurance benefits by the introduction of the health insurance system

3) Institution and Organization

Reduction of the cost by effective and rational of the organization in health administration

Saving cost at the medical facilities to enable more effective and rational medical services by the improvement of their functions

4) Human Resources

Effective use of human resources to put into practice more effective and better quality of medical services, and cost/time reduction in the medical services

5) Financial Resources

a. Revenue

Revenue will be increased by securing the health insurance (beneficiary's willingness pay)

Status of insurance premiums collection (collection rate), and increase of the insurance coverage, medical facilities with coverage and membership of the insurance

b. Expenditure:

Effective control of the total expenditure for health financing

Better financial management on salary, pharmaceuticals, food, cost allocation of equipment



c. **Operation and Maintenance**

Reduction of cost by centralization and consolidation of the medical services and test system; by the better the medical services; by the better facility and equipment operation and maintenance

d. **Annual Plan**

Establishment of sustainable financial management

6) **Facilities and Equipment**

Effective use of the facilities and equipment for patients, and reduction of cost in the facilities and on equipment operation and maintenance

7) **Hospital Management**

Effective use of limited human resources and financial resources to bring about more benefit to patients

8) **Referral System**

Effective use of medical resources to put into practice more effective and better quality of medical services; cost reduction by more efficient referral system, and by wider accessibility and early treatment

9) **Epidemiological Approach**

Accurate identification of the cause of disease by centralized and qualified laboratory test for appropriate treatment and reduction of cost

10) **Health Information System**

Timely and appropriate planning by strengthening Health Information System, to effectively use medical resources and implement the early countermeasures

11) **Community Level**

More effective use of PHC facilities, improvement of accessibility to medical services and drugs, cost saving by the preventive medicine and early treatment

**(4) Financial Evaluation**

1) **Health Insurance System**

As mentioned before, by the year 2010, the budget deemed necessary for introducing the

medical insurance system will be US\$4,054,000 for constructing the system, and US\$173,000 for equipment.

In the target year of 2010, total medical cost is expected to be 987.7 billion sums (1,007.9 million US\$, 1 US\$ = 980 sums), provided that the medical insurance system is introduced according to the proposed priority program. The Ministry of Finance has pledged to inject tax into 20% of medical insurance finance. And given that this is covered by the collected insurance fees, the remaining 80% will be 790.2 billion sums or 28,200 sum/capita (28.8 US\$) with projected population of 28,000,000 in 2010. This is merely 2.0% of the expected per capita income in 2010 (1,411,000sums or US\$1,440). By this projection, the introduction of public medical insurance is feasible.

Insurance System will bring about great benefit to the total population of 28,000,000 in 2010. The cost to be injected into the introduction of insurance system (budget for priority program; 4,054,000 US\$) will be merely 0.4% comparing with the single year of 2010 (total insurance premiums; 1,007.9 US\$), the year that the insurance system is to be completely in shape. And this ratio (priority program budget to total amount of insurance premiums) is even expected to drop alongside the further operation of the insurance system. Because, total amount of insurance premiums which is the denominator of above ratio, increases due to the expansion of the insurance system to whole Uzbekistan.

On the short term basis, the pilot study for the introduction of insurance system will cost approximately US\$6,000 a year, given that it is implemented in Oblast with average number of population 1,800,000. This figure is assumed upon the covered population of 300,000 mainly in the Oblast hospitals at the monitoring period (after 2007). Main expenditure will be spent on the salary of the employees of insurance association and consumables for printing by computer processing. Staff of 10 people will work on data processing. The cost of receipt delivery is not included in the estimate, because the receipts from each hospital will be gathered and brought to the association by the hospital staff on a regular basis; regular "traffic" is already often made between each facility and upper referral, and therefore this can be utilized for the receipt delivery. This estimate of running cost is significantly small; 0.1% of the total amount of collected insurance fees US\$6,000,000. Thus, it is feasible to operate the system by the bank interest on the collected insurance fees.

## 2) Rayon Level Medical Services System

This priority program targets the Rayon of average scale; the population of 100,000, 200 beds at CRH, and 25 SVPs. The Number of staff totals 130; 35 doctors, 75 nurses, 20 for other category, using the results of the Baseline survey showing that per bed figures, doctor 0.18, nurse 0.39, and other category 0.11.

As follows, the results of the Baseline survey show the average annual expenditure of hospital with 200 beds.

**Table 16.38 Annual Expenditure of Hospital with 200 Beds**

(Unit:1,000 sums)

Revenue	2000 year <sup>1)</sup>		1)/2)	2001 year <sup>2)</sup>		2)/3)	2002 year <sup>3)</sup>	
	per/bed	200 bed		per/bed	200 bed		per/bed	200 bed
MOH subsidization	298.1	59,620	51.1%	470.7	90,060	39.0%	626.2	125,220
Payment from Patient	3.0	600	13.3%	3.4	680	782.4%	30.0	6,000
<b>Total</b>	<b>301.1</b>	<b>60,220</b>	<b>50.7%</b>	<b>453.6</b>	<b>90,740</b>	<b>44.6%</b>	<b>656.2</b>	<b>131,220</b>

Expenditure	2000 year <sup>1)</sup>		1)/2)	2001 year <sup>2)</sup>		2)/3)	2002 year <sup>3)</sup>	
	per/bed	200 bed		per/bed	200 bed		per/bed	200 bed
Salary	143.1	28,620	47.5%	211.1	42,220	46.6%	309.4	61,880
Pharmaceutical	33.6	6,720	56.3%	52.5	10,500	39.8%	73.4	14,680
Social Security	33.6	6,720	50.6%	50.6	10,120	39.1%	70.4	14,080
Utility	49.5	9,900	25.7%	62.2	12,440	29.9%	80.8	16,160
Food	19.5	3,900	94.9%	38.0	7,600	35.8%	51.6	10,320
Major and Minor Maintenance	7.3	1,460	19.2%	8.7	1,740	20.7%	10.5	2,100
Equipment and Furniture	1.2	240	25.0%	1.5	300	13.3%	1.7	340
Medical Consumables	13.3	2,660	118.8%	29.1	5,820	100.3%	58.3	11,660
<b>Total</b>	<b>301.1</b>	<b>60,220</b>	<b>50.7%</b>	<b>453.6</b>	<b>90,740</b>	<b>44.6%</b>	<b>656.2</b>	<b>131,220</b>

The cost for operation and maintenance, and consumables for renewing the equipment are the bulk of the running cost, specifically US\$7,260, for implementing the priority programs. The basic plan is to renew the existing equipment, and therefore the running cost only includes the estimate on the newly installed equipment. The cost estimate of the program applies market price of the equipment in Uzbekistan and international price.

This cost is merely 5.4% of the total hospital expenditure comparing to the year 2002, and also small comparing to the figure of average scale hospital, 9.1%. Based on this assumption, no critical issues seems to arise as a result of doubled running cost by more active medical activities in the future.

In 2010, maintenance cost at the targeted CRH is expected to be approximately 329,800,000 sum. The amount to be covered by the patient in the future will be

263,840,000sum, grant that 20 % will be covered by the government budget. This estimate indicates that the system is feasible, because insurance cost per patient is 2,640sum (not including SVP or third referral facility), which is 0.2% of per capita GDP.

The largest factor that enables the cost to be downsized can be attributed to the improved ability of examination and testing. Further, by strengthening the coordination with SVP, SVP will have better skills; preventive medicine can properly take place making possible early detection of disease and prevention of it. This will favorably leads to further reduction of cost. Total budget for SVP will be 504,510,000sum, based on the average operation cost of SVP, which is 8,040,000sum shown by the results of the Baseline survey. With the cost of 5,045sum on the per capita basis, the population of 100,000 can benefit from more strengthened PHC.

In addition, this program gives rise to the improved ability of hospital operation and management, which as a consequence leads to the further reduction of unnecessary cost.

Moreover, two more significant benefit can be anticipated; first, access to the most appropriate medical services will be improved by promptly transporting the patient in critical condition to the upper referral facility; second, access to drugs will be broadened, providing better medical services to the patient.

As described above, the remarkable benefit will be brought about to the population of 100,000 by shouldering 329,800,000sum for CRH, 504,510,000sum for SVP, total operation cost of 834,310,000sum; and on per capita basis CRH 2,640 sum and SVP 5,045, total 7,285 sum. In other words, approximately 0.54% of per capita GDP 1,411,000sum will be able to supply sufficient medical services at Rayon level.

47.1% of the total hospital expenditure is spent on salary for medical workers. With this ratio, financial incentive can be re-allocated to the medical workers, when reduction of cost makes budget surplus available. Such reduction can be achieved through more effective medical service, appropriate allocation of human resources, and improved skill in hospital management.

### 3) Oblast Medical Services System

This priority program targets the population of 1,800,000 in Oblast of average scale in 2010. The main concept of this program is to consolidate and centralize specialized

medical facilities. Based on the bed operation rate at the existing hospitals, consolidation will reduce the number of beds by 20-30 %. Upon this projection, the number of bed at Oblast General Hospital is 400.

And, the number of staff at Oblast General Hospital is 70 doctors, 155 nurses, 45 other staff, 270 in total, based on the results of the Baseline survey-per bed figure of doctor 0.18, nurse 0.39 and others 0.11.

The results of the Baseline survey provide the average annual expenditure of hospital with 400 beds as the table below shows;

**Table 16.39 Annual Expenditure of Hospital with 400 Beds**

(Unit:1,000 sums)

Revenue	2000 year <sup>1)</sup>		1)/2)	2001 year <sup>2)</sup>		2)/3)	2002 year <sup>3)</sup>	
	per/bed	400 bed		per/bed	400 bed		per/bed	400 bed
MOH subsidization	298.1	119,240	51.1%	470.7	180,120	39.0%	626.2	250,440
Payment from Patient	3.0	1,200	13.3%	3.4	1,360	782.4%	30.0	12,000
Total	301.1	120,440	50.7%	453.6	181,480	44.6%	656.2	262,440

Expenditure	2000 year <sup>1)</sup>		1)/2)	2001 year <sup>2)</sup>		2)/3)	2002 year <sup>3)</sup>	
	per/bed	400 bed		per/bed	400 bed		per/bed	400 bed
Salary	143.1	57,240	47.5%	211.1	84,440	46.6%	309.4	123,760
Pharmaceutical	33.6	13,440	56.3%	52.5	21,000	39.8%	73.4	29,360
Social Security	33.6	13,440	50.6%	50.6	20,240	39.1%	70.4	28,160
Utility	49.5	19,800	25.7%	62.2	24,880	29.9%	80.8	32,320
Food	19.5	7,800	94.9%	38.0	15,200	35.8%	51.6	20,640
Major and Minor Maintenance	7.3	2,920	19.2%	8.7	3,480	20.7%	10.5	4,200
Equipment and Furniture	1.2	480	25.0%	1.5	600	13.3%	1.7	680
Medical Consumables	13.3	5,320	118.8%	29.1	11,640	100.3%	58.3	23,320
Total	301.1	120,440	50.7%	453.6	181,480	39.1%	656.2	252,440

The cost of consumables for renewed equipment and of operation and maintenance is the bulk of the running cost for implementing this priority program. The cost estimate of this program applies the market price of equipment in Uzbekistan and international price.

This cost estimate is merely 7.33% of the total hospital expenditure comparing to that of 2002. This ratio is also small when comparing with that of the average scale hospital, which is 9.51%. These figures suggest no critical problem to occur. In 2010, operation cost of targeted CRH is expected to be approximately 695,400,000sum, making the running cost 2.5% of the entire expenditure.

As far as the operation cost for 2010 is concerned, the insurance amount to be shouldered by the patients will be 556,320,000sum in the future, given that 20% of 695,400,000sum is covered by the government budget. And therefore, this program is feasible as per capita amount will be only 310sum.

The largest factor for reducing the cost is consolidation of medical facilities and centralization of test system; specifically, cost reduction deriving from less number of beds, utilities commonly shared by indirect departments, and more centralized hospital management.

As can be seen, this program enables the hospitals to reduce the cost by improving their management skill. Drug inventory management will make possible the prompt procurement of appropriate drugs; the cost will be also reduced by strengthening the daily maintenance of equipment and maintenance system; the period of medication and hospitalization will be shortened by improved quality of medical services.

Patients can further benefit from this program; advanced medical services will be available at Oblast level. Besides, cost will be reduced by not often transporting the patients to Tashkent. As third referral medical facility, Oblast General Hospital accepts patients from the lower level facilities and provides services for them. Also, it oversees the total medical system and administration of Oblast, and provides education and training for medical workers of lower referral facilities. Hence, strengthening this hospital will bring about considerable benefit to the population in the region, and moreover total medical services in the Oblast will be more effective.

As mentioned above, operation cost of 695,400,000sum, namely 390sum insurance fee on per capita basis, will bring about remarkable benefit to the population of 1.8 million.

49.0% of the total hospital expenditure is spent on the salary of medical workers. With this figure, financial incentive can be re-allocated to the medical workers, when reduction of cost makes budget surplus available. Such reduction can be achieved through more effective medical service, appropriate allocation of human resources, and improved skill in hospital management.

#### 4) Health Management Information System (HMIS)

The cost required for implementing this program is total US\$944,000 for the period of 5 years or US\$188,800 per year; to train RIAC staff for establishing new system and procuring computers for database. On per capita basis, cost burden will only be 0.038 US\$ (37 sum).

Personnel expense is a major running cost after implementation of the priority program. However, this priority program intends to establish new HMIS by utilizing the existing labor and organization. New organization will still consist of same staff and similar scale of the present one, and therefore increased labor cost is not included in the discussion for introducing new HMIS.

At present, the document filled at SVP is manually transferred to the Rayon and Oblast level on a regular basis. As such, with this current manual system, the cost for transferring the digital data to the upper level institutions will not change. In the future, however, such cost may be reduced by using the internet.

The largest benefit brought about by the new HMIS is that detailed medical information system is promptly and accurately conveyed and processed. Health planning and policy making will become timely at the Ministry of Health and Oblast Health Department level, where all they can acquire now is the aggregated data and are excessively spending time just on tallying.

New HMIS will give rise to considerable benefit to the entire population of the country in various ways; further expansion of infectious disease may be prevented; countermeasure for new infectious disease may be taken promptly; provision of medical facilities and equipment will be equally allocated. In sum, it will greatly contribute to the promotion of national health and improvement of health condition, and moreover, it will benefit and support the introduction of medical insurance system.

The cost per capita for implementation of program and establishment of system is estimated at 0.038 US\$ (37 sum), which will bring about large benefit to the population of 28,000,000 in the entire country.