

Country Name	The Project for Improvement of Medical Care Level in the Xinjiang Uygur Autonomous Region
People's Republic of China	

**I. Project Outline**

Project Cost	E/N Grant Limit: 1,158 million yen	Contract Amount: 970 million yen
E/N Date	July, 2004	
Completion Date	December 2005	
Implementing Agency	Responsible Agency : Ministry of Commerce of the People's Republic of China (Foreign Trade & Economic Cooperation Department of Xinjiang Uygur Autonomous Region) Implementing Agency : Health Bureau of Xinjiang Uygur Autonomous Region, Health Bureau of Hotan City Implementing Agency(Administering Authorities) : People's Hospital of Xinjiang Uygur Autonomous Region, People's Hospital of Hotan City	
Related Studies	Basic Design Study: March – November 2003	
Contracted Agencies	Consultant	INTEM Consulting, Inc.
	Suppliers	Marubeni Corporation, Ogawa Seiki, Co. Ltd.
Related Projects (if any)	Grant Aid : Improvement of Equipment for Shui Mo Gou Hot Spring Sanatorium In Ulumqi (1987), The Project for Promotion of Infectious Diseases in Western Seven Provinces (2002) Grant Assistance for Grassroots Human Security Projects : The Project for Supply of Medical Equipment for the People's Hospital of Xinjiang Uygur Autonomous Region (1998), The Project for Emergency Assistance for the Qianshan Township Hospital in Yiwu Country, Xinjiang Uygur Autonomous Region (2001)	
Background	<p>Located far from the central part of the People's Republic of China with the desert area being widely spread, Xinjiang Uygur Autonomous Region has lagged behind in the rapid Chinese economic development. The People's Hospital of Xinjiang Uygur Autonomous Region, serving as the top-referral hospital in the region as well as the training institute of those health professionals, have played the vital role not only to provide the emergency medical care to the entire region but also to deliver the medical services into the frontier area of the region. Since medical facilities and equipment of the hospital have been deteriorated across the ages and the maintenance and repair works have not been properly conducted due to the budgetary constraints, it has become difficult for the hospital to provide the top-referral services to its target population.</p> <p>Under these circumstances, the Government of China requested the Grant Aid Assistance to Japan to renovate the medical equipment in the People's Hospital of Xinjiang Uygur Autonomous Region. After the series of discussions, it was decided that, considering the benefits to the Xinjiang Uygur Autonomous Region which has a broad area, such assistance should also be intended to the People's Hospital of Hotan City which has assumed a role of a center hospital in southern area. And both hospitals have often collaborated through the referral network, such that the People's Hospital of Xinjiang Uygur Autonomous Region dispatched medical assistance team to the People's Hospital of Hotan City.</p>	
Project Objectives	Outcome To scale up the medical services as well as to raise its quality standards of the People's Hospital of Xinjiang Uygur Autonomous Region and the People's Hospital of Hotan City by provision and proper installment of adequate equipment.	
	Outputs Japanese side: Provision and proper installment of medical equipment to two targeted hospitals - 125 items of medical equipment to the People's Hospitals of Xinjiang Uygur Autonomous Region: C-arm Angiographic System, Anesthesia Machine, Microscope, Automatic Chemical Analyzer, Automatic Slide Stainer, Ultrasound Scanner for Cardiac examination, Holter system, ambulance, etc. - 30 items of medical equipment to the People's Hospitals of Hotan City: X-ray TV system, Automatic Film Developer, Respirator, etc. Chinese side: - To prepare the site to install the equipment - To secure the utilities to operate the equipment - To bear the cost of custom clearing, administrative process of equipment procurement - Proper operation and maintenance of equipment Japanese Side	

**II. Result of the Evaluation**

Summary of the Evaluation
Established in 1934, the People's Hospital of Xinjiang Uygur Autonomous Region, the top-referral hospital in the region, has made much effort to improve the medical wards and related facilities and equipment with the constructive assistance

from the regional government. However, the maintenance and repair works have not been properly conducted due to the budgetary constraints, it has become difficult for the hospital to provide the top-referral level services. The People's Hospital of Hotan City, established in 1986 as a clinic with only out-patient services at the beginning, has installed facility and equipment step by step, and served as the center hospital of the southern region to provide secondary level medical services. However, with the deteriorated medical facilities and equipment, it has become difficult to provide even the usual daily medical care.

Under these circumstances, the project was implemented with the purpose to scale up the medical services as well as to raise its quality standards of the People's Hospital of Xinjiang Uygur Autonomous Region and the People's Hospital of Hotan City by provision and proper installment of adequate equipment.

The project has largely achieved to improve the medical services in the Xinjiang Uygur Autonomous Region in both quantitatively and qualitatively. Indicators such as the average waiting days for operation, the total number of operations and the diagnostic accuracy have shown the great progress in comparison of the time before the project, the target year and at the time of ex-post evaluation. It was identified that progress of quantitative effects has also reflected on the improvement of overall patient satisfaction. Furthermore, it has become possible for both hospitals to newly practice the cardiac surgery and the gallstones as well as to give a rapid diagnosis of stomach cancer. And the technical standard (capacity) of clinical doctors has also been greatly improved and the referral network between two hospitals has been further strengthened. As a whole, it can be said that the project has largely achieved its intended purpose.

As for sustainability, the institutional, technical and financial sustainability have been secured, but there are some minor problems observed in terms of current status of operation and maintenance due to that the after-service cares by agent have not been available in China for some equipment. For relevance, the project has been highly relevant with China's development policy, development needs and Japan's ODA policy at the time of ex-ante evaluation and ex-post evaluation. For efficiency, the project period slightly exceeded the plan.

In light of the above, this project is evaluated to be satisfactory.

## 1 Relevance

This project has been highly consistent with China's development policy, such as the improvement of the medical services specified under the 12th Five-Year Plan for Health (2011-2015), and development needs to renovate the medical infrastructure of major hospitals maintaining the good quality of medical services in the Xinjiang Uygur Autonomous Region, as well as Japan's ODA policy at the time of both ex-ante and ex-post evaluation. Therefore, relevance of this project is high.

## 2 Effectiveness/Impact

The project has largely achieved to improve the medical services in both quantitatively and qualitatively. In both hospitals, indicators of quantitative effects, such as the average waiting days for operation, the total number of operations per year and the diagnostic accuracy have shown the great progress in comparison of the time before the project, the target year and at the time of ex-post evaluation. In both hospitals, the average waiting days for operation has been decreased to just about three days in spite of the drastic increase of total volume of operations. Such positive changes have been partly attributable to the fact that the time required for diagnostic test has been reduced by providing equipment, and improvement of quantitative ability for operations by effective utilization of those equipment. As a whole, the technical capacity of surgery has been greatly improved by proper utilization of medical equipment provided by the project. In order to cope with the increasing demand of medical services, the People's Hospital of Xinjiang Uygur Autonomous Region has made further efforts to upgrade the medical equipment through independent procurement, such as the Automatic Chemical Analyzer in 2011. It was identified that those independent procurement has also contributed to improvements of indicators. According to the clients' satisfaction survey investigated by both hospitals, the satisfaction level of the patients has been improved because of reduction of waiting time for consultation and inspection as well as better services and respectful attitude toward clients by the health professionals in both hospitals. As a whole, it can be said that the project has largely achieved its intended purpose for qualitative effects.

As for the impacts, it has become possible for both hospitals to newly practice the cardiac surgery and the gallstones as well as to give a rapid diagnosis of stomach cancer. And the technical standard (capacity) of clinical doctors has been greatly improved. Medical doctors of the People's Hospital of Xinjiang Uygur Autonomous Region, who have often given the technical guidance and training for those doctors working in other hospitals of the region, have transferred the technologies using equipment provided by the project. Also, the referral network between two hospitals has been streamlined and their collaboration mechanism has been further strengthened. One of the examples is that the patients of the People's Hospital of Hotan City can receive the remote diagnosis services from the People's Hospital of Xinjiang Uygur Autonomous Region. And if the patients need to be transferred to the People's Hospital of Xinjiang Uygur Autonomous Region, they are served with priority. More than 100 patients, such as those seriously cases, can now receive such rapid diagnosis and priority treatment. Therefore, effectiveness/impact of this project is high.

### Quantitative Effects

Indicators		Implemented Hospital	(Before the project) 2002 Actual	(After the project) 2006 Planned	2006 Actual	(Ex-post Evaluation) 2011 Actual
Indicator 1 Technical capacity	① Average waiting days for operation	PH of XUAR	5 days in avg	3 days in avg (Reduced 2days in avg)	n/a*	Approximately within 3 days
		PH of HC	4.6 days in avg	2.6 days in avg (Reduced 2days in avg)	2.8 days in avg	3.3 days in avg

of surgical operation	② Total volume of operations per year	PH of XUAR	9,000 cases/year	10,350 cases/year (15% increase)	Approximately 13,000 cases/year	Approximately 49,000 cases/year
		PH of HC	510 cases/year	612 cases/year (20% increase)	478 cases/year	1,517 cases/year
Indicator 2 Improvement of diagnostic accuracy		PH of XUAR	89%	95% (6 points increase)	n/a*	96% (7 points increase)
		PH of HC	93.9%	98.9% (5 points increase)	98%	98.9% (5 points increase)

(Source : People's Hospital of Xinjiang Uygur Autonomous Region and People's Hospital of Hotan City)

\* As the specific data for the year 2006 was not available, it is shown as "n/a".

PH of XUAR = People's Hospital of Xinjiang Uygur Autonomous Region

PH of HC = People's Hospital of Hotan City



C-arm Angiographic System  
(PH of XUAR)



X-ray diagnostic apparatus  
(PH of HC)



Anesthesia apparatus for operating room  
(PH of HC)

### 3 Efficiency

Although the project cost was within the plan (ratio against the plan: 84%), project period slightly exceeded the plan (ratio against the plan: 117%) because of much time required on the custom clearance of equipment. The outputs of the project were produced as planned. Therefore, efficiency of this project is fair.

### 4 Sustainability

The operation and maintenance of medical equipment provided by the project have been carried out by the People's Hospital of Xinjiang Uygur Autonomous Region and the People's Hospital of Hotan City. Health Bureau of Xinjiang Uygur Autonomous Region and its affiliated Bureau, Health Bureau of Hotan City, are responsible to supervise those two hospitals. The institutional, technical and financial sustainability of this project effect have been secured. In both hospitals, full-time staff has been assigned to the operation and maintenance of those equipment, and repair technicians and dedicated staff members have properly received the technical training, and the regular maintenance and check-up has been kept. Medical equipment provided by the project have been well utilized and spare-parts have been procured by themselves whenever needed; however, there are some equipment with which no aftercare services are available in China, and thus it has been difficult to procure its spare parts in local markets. In such cases, both hospitals have tried their best to do the minimum possible repairs by themselves or to set a limitation in use.

Therefore, there are some problems in the current status of operation and maintenance and the sustainability of this project effect is fair.

## III. Recommendations & Lessons Learned

### Recommendations for Implementing agency:

For equipment with which no aftercare services are available in China, these two hospitals has repaired them by themselves or set a limitation in use. Both hospitals should consider measures to solve the problem by directly contact with headquarters of manufactures if necessity arises.

### Lessons learned for JICA:

1. The project has provided and installed the medical equipment for both of the top-referral hospitals in the region as well as one of the core hospitals of the city in the region. It is considered as very effective to upgrade the medical equipment and facilities of two hospitals at the same time, in order that referral activities such as patient transfers between these two hospitals from city level to provincial level have carried out smoothly, serving to further strengthen the referral network as well. Therefore, it is proven to be effective to target two or more hospitals at the same time if they are linked together under the referral network.
2. In order for the smooth operation and maintenance of medical equipment, it is very important to examine the conditions of domestic aftercare services prior to the procurement and to obtain the mutual agreement with recipient hospitals.