

No. 1

STUDY REPORT
ON
THE PROJECT FOR IMPROVEMENT OF
MEDICAL EQUIPMENT FOR CHILD CARE
IN
THE REPUBLIC OF UZBEKISTAN


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Chapter 1 Background of the Project

The Republic of Uzbekistan (hereinafter referred to as Uzbekistan) is a landlocked country in central Asia and it achieved independence following the August 1991 coup d'etat in the Soviet Union. Uzbekistan has a mono-cultural economic structure centered around the cultivation of raw cotton and it is facing a tight fiscal situation due to the effects of inflation and so on. In the area of public health and medical care, a number of problems, such as a lack of medicines, a lack of medical equipment and an inability to replace deteriorated equipment, have become apparent. Moreover, most of the medical equipment in the country was made in the former East Germany, Poland and Hungary and much of it is in need of renewal due to deterioration. Furthermore, the procurement of spare parts for such equipment is almost impossible.

Realizing the urgent need to improve such a situation, the Government of Uzbekistan held discussions on the renewal of medical equipment in the country's hospitals with officials of the Government of Japan and also with the Project Economic Survey Team that visited Uzbekistan in March 1994. As a result of these discussions, the Government of Japan decided to investigate the provision of grant aid for the improvement of medical equipment in two pediatric hospitals in and around the capital. This was decided in view of the fact that this was the first instance of a Japanese grant aid project in Uzbekistan.

Following this, the Government of Uzbekistan prepared a project for the improvement of medical equipment in two specialist pediatric hospitals (Pediatrics Research Center Hospital and the Second Attached Hospital of the Pediatrics Research Center) located in the capital of Tashkent, and requested the provision of grant aid for this project to the Government of Japan.

Chapter 2 Contents of the Project

2-1 Objectives of the Project

The objective of the Project is to improve the medical equipment in the two target hospitals, which act as the top two pediatric referral hospitals in Tashkent. By renewing the deteriorated medical equipment and supplying the lacking equipment to the two target hospitals, the Project aims to restore the declining functions of the hospitals and lead to an improvement in the provision of child care services in not only Tashkent but also throughout the whole of Uzbekistan.

2-2 Basic Concept of the Project

The child medical care system of Uzbekistan is constructed upon a referral system that has the two Project target hospitals (Pediatrics Research Center Hospital and the Second Attached Hospital of the Pediatrics Research Center) at its peak. Sick children and children that are found to be ill in examinations are referred in order from each area's lower level hospital to each state's higher level hospital, and then finally to the Pediatrics Research Center Hospital and the Second Attached Hospital of the Pediatrics Research Center. Thus, the two target hospitals treat child patients from not only Tashkent but also from areas around the Aral Sea and all other regions of the country, and so the equipment that will be provided under the Project needs to be capable of being used in the treatment of children from all over Uzbekistan.

The medical technical levels of the two target hospitals and their doctors are high, however, the continued fiscal difficulties in Uzbekistan following its independence in 1991 have meant that spare parts for medical equipment and expendable items such as medicine samples are in short supply. It is forecast that it will

take at least five years for the two target hospitals to become able to procure spare parts and medicine samples etc. with their own finances. It is therefore necessary to also consider the provision of spare parts and expendable items as a temporary measure until the hospitals do achieve financial independence, in order to ensure that the Project for the Improvement of Medical Equipment for Child Care is successful.

2-3 Basic Design

The Project aims to provide medical equipment through grant aid and in order to ensure that equipment selection is in line with the requirements of the grant aid system, the following criteria were adopted:

1. Give priority to basic equipment,
2. Reduce the quantities of high level equipment,
3. Give as much priority as possible to wide purpose investigative equipment,
4. Also include training and research equipment,
5. Give priority to equipment for which expendable items and sample medicines can be procured locally.

Chapter 3 Implementation Plan

3-1 Procurement Plan

Indiscriminate procurement of Japanese equipment shall be avoided and consideration shall be given to the local conditions to ensure that the equipment can be maintained properly after Project implementation. Moreover, the equipment to be provided includes artificial dialysis machines, for which the maker must be specified in order to avoid confusion and major accidents when used by the medical staff, and these items shall be planned in consideration of conformity with existing equipment. The equipment included in the procurement plan is as follows.

- 1) Intensive care unit machinery: ICU monitors, ICU beds, oxygen tents etc.
- 2) Investigative equipment for physiological functions: ECG recorders, ECG analyzers, ultrasonic diagnostic apparatus etc.
- 3) Surgical equipment: Operating tables, anesthetic apparatus, surgical lighting, artificial respirators, artificial heart and lung machines etc.
- 4) Radiation diagnostic equipment: X-ray diagnostic apparatus (photographic and fluoroscopic) etc.
- 5) Equipment for newborn infants: Automatic analyzers for newborns, blood gas apparatus etc.
- 6) Investigation room equipment: Biochemical automatic analyzers, blood gas apparatus etc.
- 7) Dialysis room equipment: Dialysis apparatus (including water treatment apparatus) etc:
- 8) Rehabilitation equipment: whirlpool apparatus, low frequency care apparatus, infra-red lamps etc.

3-2 Implementation Schedule

The implementation schedule will require 4.0 months from the E/N to the conclusion of the subcontractor contract and a further 7.0 months from then to the completion of the work.

The schedule is as indicated below.

| | Year 1995 | | | | | | | | | Year 1996 | | |
|-------------------------|-----------|---|---|---|---|---|----|----|----|-----------|---|---|
| | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| Signing of E/N ▼ | | | | | | | | | | | | |
| Consultant Agreement | | | ▼ | | | | | | | | | |
| Site Survey | | | | | | | | | | | | |
| Detailed Design (D/D) | | | | | | | | | | | | |
| Tendering | | | | | | | | | | | | |
| Supply Contract | | | | | ▼ | | | | | | | |
| Equipment Manufacturing | | | | | | | | | | | | |
| Transportation | | | | | | | | | | | | |
| Equipment Installation | | | | | | | | | | | | |
| Completion Work | | | | | | | | | | | | |

Chapter 4 Project Evaluation and Recommendation

4-1 Project Effect

Implementation of the Project will bring about the following kinds of improvements to the medical equipment that is necessary to the two target hospitals, which are in danger of losing their functions as the top pediatric referral hospitals in Uzbekistan:

- 1) The restoration of the hospitals' functions as top pediatric referral hospital functions,
- 2) As a result of the above, the maintenance of the existing medical care system in Uzbekistan,
- 3) The even more effective execution of the Medical Field Basic Policy being promoted by the Ministry of Health,
- 4) It will become possible to give proper treatment to peculiar illnesses such as intestinal malabsorption syndrome and hepatic dysfunction etc., of which there are many child patients in Uzbekistan,
- 5) By introducing the necessary repair tools to the maintenance divisions of the two target hospitals, the maintenance of the medical equipment by the maintenance staff will be possible.

4-2 Recommendation

- 1) The procurement of third country equipment, which would be advantageous in terms of ease of maintenance and cost, is highly possible but requires consideration of delivery schedules.
- 2) Hard water is supplied to the target hospitals and so it is necessary to incorporate water softening functions into the equipment.
- 3) The interior of the Pediatrics Research Center Hospital seems to be hygienic, however, the boundaries between clean areas such as the delivery room and premature infant room and unclean areas

such as corridors are unclear. It is therefore desirable that contamination prevention measures such as the provision of fore-rooms, air curtains and sticky mats etc. are implemented in these boundary areas. Moreover, according to a medical staff member at the hospital, although the operating room of the obstetrics department is fitted with one window cooler, the temperature in the room reaches as high as 40 °C in the summer and breakdown of the cooler exerts great physical stress on the operating staff and the patients.

4) Attention needs to be paid to the following points in the case of the Second Attached Hospital of the Pediatrics Research Center.

a) Voltage regulation at the hospital is more than 10% higher than rated voltage and so it is necessary to select the appropriate AVR specifications.

b) There is concern over whether or not a sufficient water supply can be provided for the artificial dialysis water treatment apparatus, and so the Uzbekistan side shall be made to promise that appropriate countermeasures are taken.

c) The hospital interior seems to be kept clean and very hygienic, however, the boundaries between clean areas such as the operating rooms, premature infant room and fluid manufacturing department etc. and unclear areas such as general corridors are unclear and there is concern over the risk of contamination. It is therefore desirable that contamination prevention measures such as the provision of fore-rooms, air curtains and sticky mats etc. are implemented in these boundary areas.

