

Terminal Evaluation

Asia

1. Outline of the Project

Country:

Sri Lanka

Project title:

Medical Equipment Maintenance & Troubleshooting

Issue/Sector:

Health/ Medicare

Cooperation scheme:

In-Country Training

Division in charge:

Southwest Asia Division, Regional Department II (East, Southwest, Central Asia, the Caucasus and Oceania)

Total cost:**Period of Cooperation**

Fiscal Year 1998 - 2001

Partner Country's Implementing Organization:

Biomedical Engineering Services, Ministry of Health (BES/MOH)

Supporting Organization in Japan:**Related Cooperation:****1-1 Background of the Project**

Biomedical Engineering Services of the Ministry of Health (BES/MOH) had the responsibility for maintenance and management of medical equipment of all the government hospitals (though there were some exceptions) in Sri Lanka. However, there were limitations that only BES repaired, maintained and managed the medical equipment in almost all of the government hospitals. In the meantime, the policy was announced that the functions of BES should be decentralized as part of decentralization of the Ministry of Health.

Under these circumstances, BES was to take care of only the medical equipment introduced in hospitals which come under the control of the central Ministry (MOH), and each province had to establish its own department to manage repair, maintenance and management of the hospital medical equipment.

The BES Head Office played a core role in the staff education of the newly established regional organizations under BES. Under these circumstances, the Government of Sri Lanka requested the Government of Japan to implement In-country Training to the personnel engaged in regional health care under BES on the repair and maintenance of medical equipment.

1-2 Project Overview

The Project implemented Training on medical equipment maintenance to the staff in six provinces (Central Province, Southern Province, North Western Province, North Central Province, Uva Province and Sabaragamuwa Province) in Sri Lanka in order to educate the staff of regional organizations under BES.

(1) Overall Goal

To improve the quality of health services through upgrading the maintenance of medical equipment at each medical service area and realizing the maximum durability, safety and utilization of medical equipment.

(2) Project Purpose

To improve the knowledge and skills of biomedical equipment of provincial maintenance staff in hospitals.

(3) Outputs

- 1) Participants can repair and maintain equipment at the basic level.
- 2) Participants can perform management functions utilizing the medical equipment management register at the medical facilities.
- 3) The Project contributes to the establishment of a nationwide maintenance and management system of medical equipment that is technically and financially efficient.

(4) Inputs

Japanese side:

Equipment	60 sets
Local Cost	3,190,330 Sri Lanka Rupee (approx. 4 Million Yen)

Sri Lankan side:

Counterparts	6 (3 medical staff and 3 technical staff)
Local Cost	1,639,703 Sri Lanka Rupee (approx. 2 Million Yen)

(5) Participant Country

Sri Lanka

2. Evaluation Team

Members of Evaluation Team

Local Consultant (statistics specialist): D. Paranagama
Local Consultant (biomedical engineering specialist): Indira Jayawardena

Period of Evaluation

Type of Evaluation:

Terminal Evaluation by Overseas Offices

3. Results of Evaluation

3-1 Summary of Evaluation Results

(1) Relevance

Distribution of the functions of BES to the provinces as a result of one of the decentralization policies of the Ministry of Health helped to improve the maintenance and repair techniques of the personnel in charge of regional health care. Hence, the Training was consistent with the policy of Sri Lanka. The target of the Training was the persons in charge of regional health service. Therefore, the Project was appropriate, because it was subject to the personnel who had little chance of acquiring specialized skills.

(2) Effectiveness

The effectiveness of the Project is recognized as follows. According to the questionnaire survey, more than 80 percent of ex-participants indicated that they acquired the techniques to the satisfactory level. Compared with the training examination results of FY 2001 and of FY 1999 at the commencement of the Training, the percentage of participants earning an A in the examination increased to 48 percent from 30 percent, and those earning a C decreased to 9 percent from 19 percent. Therefore, the participants' capabilities in equipment maintenance improved year by year, and the Project contributed to the original project purpose, "the staff acquires knowledge and improves techniques".

(3) Efficiency

The maintenance and management techniques for the medical equipment most frequently used at regional hospitals, such as sphygmomanometers, suction apparatus, and sterilizers were transferred to the participants of the Training, and the Training contents were appropriate. The cost of participation in the Training differed depending on the area, and in some areas the cost was higher than in other areas.

(4) Impact

After the completion of the Training program, the number of failures in medical equipment reported to the Division of Biomedical Engineering Services (BES) in Colombo decreased. In Central Province and North Central Province, in particular, there was a period during which the figure decreased significantly, and the decrease had a positive influence on the quality of the medical service. However, there were only a limited number of cases where the ex-participants were hired as the staff of regional BES. Therefore, it is required to make the Training more widely known.

(5) Sustainability

According to the answers to the questionnaire survey from the ex-participants, more than 80 percent of the respondents mentioned that they acquired high-quality techniques. Based on this fact, the Project has technical sustainability. After completion of the Project, BES will be able to provide funding only for the repair and maintenance. It is difficult for BES to support instruction costs for new repair facilities and for learning techniques.

3-2 Factors that promoted realization of effects

(1) Factors concerning Planning

N/A.

(2) Factors concerning the Implementation Process

N/A

3-3 Factors that impeded realization of effects

(1) Factors concerning Planning

N/A.

(2) Factors concerning to the Implementation Process

As the participants' background and skills were varied, it was necessary to spend more time for some addressing very basic issues. Therefore, some participants recommended changes in contents to make the Training more efficient.

3-4 Conclusion

Many participants are now engaged in the field of maintenance and repair of regional medical equipment through the Training. Some Provinces have introduced the efficient maintenance and management system of medical equipment, and there have been positive impacts on the improvement of the quality of the health care services in those Provinces because of the decrease in the number of equipment breakdowns.

3-5 Recommendations

The ex-participants of the Training can be expected to generate massive positive effects when hired as BES staff. Recruitment of the ex-participants by BES will be promoted by including the repair techniques of engineers as recruitment criteria. Comment on the accomplishment of each participant in the certificate is also necessary. The Provincial Government should aggressively supervise techniques and give guidance to those engaged in the repair and maintenance section in order to cope with the repair and maintenance of more complex facilities in the future.

3-6 Lessons Learned

It is strongly urged that the courses be divided according to the purpose and level of capability of the participants so that they can continuously attend the Training. The Training will be able to lead to upgrade the participants' level of capability by implementing the Training in the surrounding countries utilizing the specialized techniques and knowledge of the participants.

3-7 Follow-up Situation

N/A