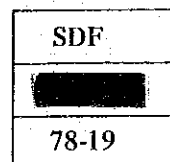


REPORT
ON
HOSPITAL FACILITIES IMPROVEMENT PROJECT
REPUBLIC OF INDONESIA

SUMMARY AND CONCLUSIONS

OCTOBER 1978

JAPAN INTERNATIONAL COOPERATION AGENCY





PREFACE

Under its First and Second Five Year Plans, the Government of the Republic of Indonesia has made great efforts to create and amplify a referral hospital system aimed primarily at improvement of hospital facilities in order to improve medical services, public health and sanitary conditions in the country. It has requested Japan's cooperation in the improvement of hospitals in South and North Sulawesi and North Sumatra.

In response to this request, the Government of Japan decided to cooperate on the said Hospital Facilities Improvement Project, and the Japan International Cooperation Agency (hereinafter referred to as "JICA") carried out a survey.

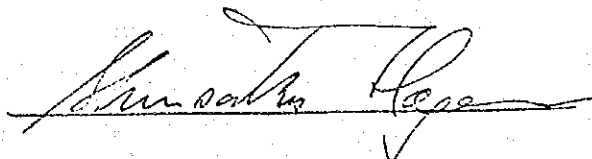
JICA sent two survey teams to Indonesia for the project; the preliminary survey team from October 23 to November 5, 1977 and the implementation survey team headed by Dr. Ryoichi Motoki, Associate Professor of Fukushima Medical School from April 27 from April 27 to June 15, 1978. This report, which is an outcome of the two surveys, was compiled by careful reviews and analyses of the findings of the survey teams after their return to Japan.

I hope that this report will prove to be useful for improving hospitals in Indonesia.

I wish to express my deep appreciation to the Indonesian authorities and officials concerned for their assistance extended to the survey teams.

国際協力事業団	
受入 月日 84.9.14	10800
登録No. 09650	98 S.D.F.

October 1978

A handwritten signature in dark ink, appearing to read 'Shinsaku Hogen', written over a horizontal line.

Shinsaku Hogen

President

Japan International Cooperation Agency

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I. Introduction

The implementation survey was conducted in continuation of the preliminary survey in October 1977 in order to collect data and information on the twenty (20) hospitals located in North and South Sulawesi and North Sumatra and map out an improvement and consolidation plan for such hospitals.

This report, which contains the findings of the survey, covers the analysis of the present condition of the said hospitals in specific reference to medical equipment, laboratory equipment, electrical facilities, water supply facilities, and so forth, as well as improvement plan and cost estimation of such hospital facilities. Results of examination of survey data are presented in each relevant chapter of this report.

II. Hospital Buildings and Facilities

1. Medical Equipment

(1) None of the 20 hospitals are provided sufficiently with basic instruments and appliances required for medical examination and treatment of outpatients and inpatients. Hence, prime importance is attached to the supply of basic instruments and appliances for emergency-surgery and obstetrical treatment including injectors and injection syringes.

(2) Basic equipment for medical examination and diagnosis such as X-ray apparatus and electro-cardiograph will be supplied.

(3) For installation at hospitals above class C, medical instruments to be operated by those with a fairly high level of medical knowledge and technology will be supplied to the extent that they can be utilized to the full in consideration of the level of each hospital.

(4) For the purpose of centralization of medical services, class B hospitals and some of class C hospitals will be supplied with medical equipment for improving sterilization process and operating rooms, with account taken of economy and utilization efficiency of such instruments.

2. Laboratory Equipment

(5) In view of the considerably frequent occurrence of infectious diseases in Indonesia, basic clinical examination equipment consisting mainly of those for microbiology will be supplied according to the scale of each hospital.

(6) It is to be noted that efficient utilization of the said equipment presupposes smooth and uninterrupted supply of water and electric power, larger space of examination rooms, and increased availability of services of medical experts and personnel as well as their retraining.

3. Electrical Facilities

(7) The improvement plan was so prepared as would be compatible with the power supply condition at each hospital, with consideration

given to PLN's electric power development programme.

(8) For those hospitals expected to receive ample power from PLN, contracted demand will be suitably increased and emergency generators will be installed. At other hospitals which cannot expect sufficient power supply from PLN, generators will be installed for constant operation.

(9) Measures will be enforced for qualitative improvement of power supply. These measures will include construction of new substations, integration of lead-in wires, separation of transformers for general circuits from those for X-ray system (hospitals above class C), installation of additional main lines, and improvement and new installation of interior wiring.

4. Water Supply Facilities

(10) There are few hospitals enjoying satisfactory water supply conditions in terms of quantity of water, service pressure and water quality. Medical services are greatly hampered at most hospitals by the constraints of some kind or other on water supply. Hence, the improvement plan is aimed at maintaining the medical instruments at the required functional level as well as at elevating their functional level to the maximum possible extent.

(11) In order to secure sufficient water supply, studies were made for increasing the water delivery on the basis of PAM's future water works plan as well as for realizing more efficient utilization

of existing facilities (e.g., improvement of reservoir tanks and pumps).

(12) Studies were made for each hospital on a number of methods for maintaining the required service pressure such as water tower method, pressure tank method, tankless direct pumping system, and direct supply coupling system.

(13) In planning the improvement of drinking water quality, specific emphasis was placed on the maintenance of acceptable turbidity and chromaticity as well as on the extermination of bacterial coli groups. Further, installation of a suitable treatment unit was planned for each place demanding supply of high quality water.

5. Kitchen Facilities

(14) The kitchen is superannuated and small in space at most hospitals, and its facilities are far short of demand. In formulating its improvement plan, therefore, supply of basic facilities was planned with consideration given to new or re-construction of kitchen building. As for fuel, electric power and steam will be used at hospitals at Gunung Wenang, Ujung Pandang and Medan, and Kerosene at other hospitals.

6. Laundry Facilities

(13) The laundry is also superannuated and small in space, and some hospitals have no laundry rooms. Its facilities are likewise old and not sufficient in quantity. In formulating its improvement

plan, therefore, emphasis was placed on securing greater laundry space required for installation of new fundamental facilities selected according to the heat source and scale of each hospital, with prime consideration given to hygienic aspects.

7. Solid Disposal Facilities

(16) As none of the 20 hospitals are equipped with solid disposal facilities, new installation of such facilities was planned for all hospitals.

8. Boiler

(17) Boiler is not available at most of the hospitals. New boiler room facilities will be installed at hospitals at provincial centers (Gunung Wenang, Ujung Pandang and Medan) because their large functional scale calls for the use of large type sterilizer and abundant pure water supply and also because the use of steam is advantageous for large-scale kitchen and laundry facilities.

9. Cooling Facilities

(18) Despite the high atmospheric temperature and humidity, only few hospitals are equipped with air-conditioning facilities. Separate window-type air-coolers will therefore be installed in the operating room, X-ray room, parturition room and ICU according to the class of each hospital.

10. Workshop

(19) A workshop equipped with facilities for simple electric, mechanical and wood working work will be installed at hospitals at provincial centers (Gunung Wenang, Ujung Pandang and Medan).

11. Hospital Building

(20) Improvement of the hospitals calls for new construction, modification or improvement, and reconstruction of a considerably large number of buildings. As for buildings accommodating medical instruments (e.g., laboratory and sterilization room), improvement will be effected mainly by reconstruction as it is possible to make use of the space of existing buildings. However, buildings of other related facilities such as generator room, kitchen, laundry and boiler room will be newly constructed because there is no such possibility.

III. Cost Estimation

(21) The foreign currency portion of the project cost is estimated at ¥6,109 million.

(22) In the total local currency portion of the project cost, the cost of building facilities such as electrical and water supply facilities is estimated to amount to Rp 2,855 million. However costs for custom's clearance; inland transportation, part of equipment installation, etc. are not estimated.

VI. Problems and Recommendations

(23) Repletion of not only medical instruments but also other facilities such as electrical and water supply facilities is indispensable for any hospital to exhibit its functions to the full. It is therefore recommended that the project be put in execution under an integrated implementation plan so that all hospital facilities will be consolidated as a whole and not separately.

(24) In order for medical instruments and related facilities to be utilized to the full, it is very important that they are operated in an adequate and correct way and given suitable maintenance services. For this purpose, it is imperative to secure a sufficient number of personnel and give them retraining.

(25) The foreign currency portion of the project cost considering priority of improvement of hospitals may be reduced to ¥3,783 million at the present stage.

(26) With reduction of the foreign currency portion the local currency portion may be reduced to Rp. 2,306 million. However, costs for custom's clearance, inland transportation, part of equipment installation, etc. are not included.

Member List of the Survey Team

Leader	Dr. Ryoichi Motoki	Associate Professor Department of Surgery Fukushima Medical School
Member	Dr. Yasuyuki Hayashi	Associate Professor Department of Clinical Pathology School of Medicine Juntendo University
ditto	Dr. Chiharu Ibukiyama	Associate Professor Department of Internal Medicine Tokyo Medical College
ditto	Mr. Akira Nagashima	Mechanical Engineer Supply and Equipment Section Medical Affairs Bureau Ministry of Health and Welfare
ditto	Mr. Goro Iwamoto	Mechanical Engineer General Affairs Department National Medical Center Hospital Ministry of Health and Welfare
ditto	Mr. Kenzo Ito	Mechanical Engineer Nihon Architects Engineers & Consultants Inc.
ditto	Mr. Yutaka Saito	Mechanical Engineer Nihon Architects Engineers & Consultants Inc.
ditto	Mr. Kooichi Miyoshi	Staff Japan International Cooperation Agency

