DR. LILLIAN LAU
Dept. of
Social & Preventive Medicine
Faculty of Medicine
University of Malaya
Kuala Lumpur, Malaysia.

A Review

OF THE

RURAL HEALTH SERVICES

IN

WEST MALAYSIA

by

DR L. W. JAYESURIA
Deputy Director of Medical Services
(Health)

Ministry of Health
Malaysia
Kuala Lumpur

A Review

OF THE

RURAL HEALTH SERVICES

IN

WEST MALAYSIA

by

DR L. W. JAYESURIA
Deputy Director of Medical Services
(Health)

Published by
THE MINISTRY OF HEALTH FOR THE NATIONAL HEALTH COUNCIL

DI-CHETAK DI-JABATAN CHETAK KERAJAAN
OLEH THOR BENG CHONG, A.M.N., PENCHETAK KERAJAAN
KUALA LUMPUR
1967

FOREWORD

The Ministry of Health in 1963 prepared a manual on "The Organisation of Rural Health Services in Malaya" which provided guidelines for developing a balanced and integrated curative and preventive health service and a better insight into matters of practical nature in rendering educational and technical health services to the people. The contents of the manual are flexible enough to enable public health administrators and field health workers to make changes in the light of experience as it accumulates with the progress of the rural health development programme and with the improvement in the social and economic conditions in the country. The Rural Health Services Scheme is not perfect and modern public health methods and techniques suitable to meet the current health needs and problems of the people are being formulated and tested. In the course of time, a pattern of rural health services would be gradually developed for the needs of the rural masses and for the achievement of a healthier and prosperous nation.

The objective of this paper on "A Review of the Rural Health Services in West Malaysia" is to assess the development progress made since the inception of the Rural Health Services Scheme. The views expressed and materials presented in this paper are in line with those prescribed in the manual on "The Organisation of Rural Health Services in Malaya" with emphasis on phases of the health programme which are consistent with the national objectives and policies on social and economic development of the country. This paper comments on the problems and difficulties encountered during the process of implementing the Rural Health Services Scheme and on the achievements in terms of objectives and accomplishments against set targets and work load. The statistical and informational data collected will show the impact and the effects of the health services on the health status of the people. The current rate of population growth is more than 3% with an over-all natural increase of 31 per thousand population. About 60% of the total population are under 20 years of age. The high increase in population will continue to grow as majority of the people are in the young age group. Although there has been a gradual decline in the mortality rates, there are still certain segments of the population and certain parts of the country, the so-called "dark areas", where mortality rates and incidence of diseases continue to be high.

The health programme achievements during the first and second five-year periods of the development plans have been largely due to the dedication, imagination and energy of the Ministry of Health Officials at the various levels of its organisation. We have to take into account the acute shortage of public health trained professional and auxiliary health workers, particularly during the transition period immediately after the country attained its

independence, and the time element to train personnel needed for the expansion and improvement of the medical and health services in the country.

The World Health Organisation has provided technical assistance in strengthening the organisation and operation of rural health services and health personnel training. UNICEF has extended material assistance to the Rural Health Development Programme envisaged under the Five-Year Development Plans in the form of equipment, supplies and transport.

This paper was presented during the meeting of the National Health Council at the Conference Room, Ministry of Health, 12 November, 1966.

TAN SRI DR MOHD. DIN BIN AHMAD, P.M.N.,

Setia-usaha Tetap/
Pengarah Perkhidmatan Perubatan,
Kementerian Kesihatan,
Malaysia

CONTENTS

APPENDICES—(*cont.*)

MEMBERS OF THE NATIONAL HEALTH COUNCIL, 1966

Yang Berhormat Enche' Bahaman bin Samsudin, Menteri Kesihatan, Malaysia (*Chairman*).

Representatives of the Malayan Medical Association—

Dr S. G. Rajahram.

Dr P. T. Arasu.

Dr Lim Kee Jin.

Dr Abdullah bin Ahmad.

Representative of the Malaysian Dental Association—

Dr Ibrahim bin Haji Mohd. Yassin.

Representative of the University of Malaya—

Professor T. J. Danaraj.

Representative of the Ministry of National and Rural Development

Enche' Ahmad bin Haji Omar.

Representative of the Ministry of Agriculture and Co-operatives—

Enche' S. Selvadurai.

Representative of the Ministry of Education—

Enche' S. V. J. Ponniah.

Representative of the Ministry of Local Government and Housing—

Enche' Mohd. Senawi bin Haji Zainuddin.

Representatives of the Ministry of Health—

Tan Sri (Dr) Mohd. Din bin Ahmad.

Dr L.W. Jayesuria.

Dr Abdul Karim bin Nawab Din.

Enche' Abdul Aziz bin Mohamed.

Dato' (Dr) R. P. Pillay.

Dr Ariffin bin Ngah Marzuki.

Tuan Syed Sidi Idid (*Secretary*).

A REVIEW OF THE RURAL HEALTH SERVICES

I—INTRODUCTION

In the social and economic development plans of the Government of Malaysia, top priority was given to expansion and development of adequate health services into the rural areas. The primary aim of the Government was to raise the health standard of the rural people who comprise about 75% of the total population. It had to be recognised that the lives and state of health of the rural people have economic values in terms of human economic productivity and in terms of Government's expenditure required for medical and health services to keep the people healthy to work and serve the country. Loss of lives or absence from work due to illness can bring economic loss not only to the country but to the family as well. This loss could be manifested in the lowering of standards of living, the necessity by the Government to provide more funds for medical assistance, and the loss or lack of manpower and money for the social and economic development projects. Poverty and health are reciprocally related. Poverty can be the direct cause of ill-health and long standing illness may result in poverty. Poverty in turn could influence the incidence of diseases and malnutrition by its association with ignorance and a negative social attitude. A vigorous attack on diseases and other conditions undermining health is fundamental in breaking the recurrent cycle of illness and poverty.

The objectives of the Rural Health Services were not merely to reduce the number of deaths and incidence of diseases but also the attainment of optimum health by all the people. In the achievement of the objectives, the definition of "HEALTH" by the World Health Organisation would have to be considered in all its entirety. The definition states that "Health is the state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." The human factor is therefore fundamental to national progress and the protection and promotion of health and well-being of the people must underlie any programme to raise the standard of living. If maximum benefits are to be derived from concerted efforts of Government and people to raise the standard of living in the country, health must go hand in hand with other social and economic development programmes and a dynamic balance must be maintained as development programmes move onwards.

II—RURAL HEALTH DEVELOPMENT PLANS

1. In the Development Plans, 1954-1956, the then Government of the Federation of Malaya formulated a tentative national rural health programme. The basic plan called for:

(*a*) trained rural midwives, one per 2,000 people;

(*b*) a sub-district health centre, one per 10,000 persons, including health centre staff and the five midwives of the area; and

(*c*) district health centre, one per 50,000 persons serving as a sub-district health centre in its own area and as head-quarters for four other sub-district health centres.

For a rural population of 4½ million, 90 district health centres and 360 sub-district health centres were envisaged in the plan. These plans were to be financed by the Colonial Development Fund.

1.1. It was contemplated to establish 25 health centres but only 8 district health centres were constructed during the period 1954-1956.

1.2. Large scale staff recruitment and training was considered as an essential part of the development plan and it would take many years to carry out the training programmes necessary to meet the requirements for the pre-existing and future services. A rural health training school was established at Jitra, north of Alor Star, Kedah, with assistance from the World Health Organisation and UNICEF.

1.3. The development of a comprehensive rural health service was complicated by the national emergency, especially by the resettling of 10% of the country's population to new villages and resettlement areas. The resettling created new health hazards and needs by bringing together families accustomed to living in widely scattered areas.

1.4. The administrative and financial problems of the Government of the Federation of Malaya during these periods necessitated the re-consideration of the future development plans for the country.

1.5. In January 1954, a mission organised by the International Bank for Reconstruction and Development was commissioned by the Government of the Federation of Malaya to assess the resources available for future developments, to consider how the resources might best contribute to the social and economic developments of Malaya, and to make recommendations for practical measures to further such development.

2. The First Five-Year Plan, called the General Plan of Development, 1956-1960, was created for the Federation of Malaya. The Rural Development Plan was embodied in this First Five-Year Plan. The mission recommended that the rural health development programme be given high priority and be carried forward vigorously. It was suggested that 24 rural health centres be developed in the years 1956-1960 and a second rural health training school be established in the south for the development of staff needed for these and future health centres.

2.1. In August 1957, upon attainment of independence, a new constitution was introduced which entailed changes in the Government machinery. The assumption of the executive authority by the Ministry of Health did not take effect until the 1st January, 1958. The administration of medical and health services was transferred from each State Government to Federal Government's responsibility, with the exception of health and preventive work in local authority areas where the local body has assumed the responsibility. It was necessary for the Ministry of Health to establish new policies on the organisation and administration of the medical and health services including the Rural Health Services and public health training programmes, at the federal and state, district, local and rural health centre levels of administration.

2.2. Land being a State Government responsibility, the Federal Government had difficulties in obtaining land for siting the rural health centres and midwives' clinic cum quarters.

2.3. Training programmes which were State responsibility prior to independence, were also held back due to delay in recruitment and lack of local people who would like to work in public health. Moreover, the training programmes were not organised, coordinated and geared to meet the required personnel for the pre-existing and future needs of the health services. The second rural health training school as recommended by the mission was not established during the First Five-Year period of the plan.

2.4. In the implementation of the Rural Health Services Scheme, each State encountered problems related to:

(*a*) organisation and administration of the rural health services;

(*b*) obtaining state land for siting the rural health centres and midwives' clinic-cum-quarters;

(*c*) frequent changes and transfer of staff;

(*d*) supply of qualified and public health trained professional staff and auxiliary workers;

(*e*) adequacy of supervision, particularly over the auxiliary health workers;

(*f*) lack of transport for more mobility of supervisory staff and of field workers; and

(*g*) the coordination or integration of previously existing static or travelling dispensaries and clinics, maternal and child welfare clinics or centres, dental clinics, etc., into the matrix of the rural main health centres or health sub-centres established in the area.

2.5. There were difficulties in putting the established district and sub-district health centres and midwives' clinic-cum-quarters into functional operation because of the acute shortage of trained local staff and of the sudden "Malayanisation" of the medical and health services immediately after the country attained its independence. During this transition period, it was not surprising to find many of the constructed health centres without their full complement of staff. However, the Government had made great efforts to provide at least the minimum staff available for these rural health centres, such as hospital assistants, staff health nurses and auxiliary workers like assistant nurse, Division II midwives and public health overseers. The Government of Malaya also recruited doctors from India.

2.6. The Government encountered financial difficulties as a result of the economic recession in 1958-1959 and of the continuing administrative and financial burdens of the National Emergency.

(*a*) The Government explored the use of local materials for building these health centres and clinics-cum-quarters.

(*b*) For financial reasons, it was found necessary to revise the original standard plans of physical buildings for district and sub-district health centres and midwives' clinic-cum-quarters. A review was also made on the

functions and how the facilities of these centres could be utilized to the full. The original standard plans of physical buildings for these centres were reduced in size as well as cost of construction.

(*c*) Many of the district and sub-district health centres were built in town areas and it was felt that the siting of future rural health centres and midwives' clinic-cum-quarters had to be carefully considered. The basic guideline in the siting of main health centres was to build the centre at the periphery of existing district or general hospitals. A referral system and co-operative arrangements with the hospitals and other facilities were arranged. Similarly, the sub-centres and midwives' clinic-cum-quarters were to be sited peripherally and radially away from each other and from the main health centre, thus establishing a network of coordinated medical and health services for the rural areas.

2.7. The Government was able to implement about 25% of the Rural Development Programme. The Rural Health Plan fell short of the target set in the First Five-Year Plan, 1956-1960. At the end of 1960, there were 8 district health centres, 8 health sub-centres and 26 midwives' clinic-cum-quarters constructed. The construction programme of physical buildings had not been geared with the training intake and output of professional and auxiliary personnel. In this respect, the time factor was important as it takes a longer period to train various types of health personnel than to build the physical buildings for these health centres and midwives' clinic-cum-quarters.

2.8. However, the economic recession was short-lived and the national emergency was put to an end in July, 1960. These events enabled the Government to accelerate the tempo of implementing the rural health development programme.

(*a*) The Ministry of Rural Development was established in 1960 and the National Development Operation Room was organised in 1961 as the Government Centre for directing rural development plans including the Rural Health Services Scheme. The Government planning machinery at all levels of administration was strengthened and closer coordination between ministries and departments was established by the organisation of the National and Rural Development Council at federal level and of the State and District Rural Development Committees in each State. The planning of the Rural Health Units was coordinated in each State by the Chief Medical and Health Officer with the State Rural Development Committee while the Medical Officer of Health would coordinate with the District Rural Development Committee at each district level. At the village or "kampong" level, the Medical and Health Officer in charge of the Rural Health Unit or his representative would coordinate with the Village or "Kampong" Development Committee. These rural health centres and midwives' clinic-cum-quarters were related to the existing medical and health facilities and to other services, such as, community centres, schools, playgrounds, etc., through the "RED BOOK" in the Rural Development Plans of the Ministry of National and Rural Development.

(*b*) The Ministry of Health is responsible for the over-all planning. The available vital and health statistics and informational data were the basis upon which health planning and its objectives were framed. The health plans and activities were co-ordinated with the activities of the Government machinery for general and economic planning through the Economic Planning Unit of the Prime Minister's Department. Officials have been assigned from time to time to represent the Ministry of Health in the general and economic planning activities. Close and frequent consultations are maintained through the Economic Planning Unit between the National Development Planning Committee and the Ministries and Departments. The Ministry of Health makes its representation when necessary or when called upon by the planning unit.

3. In pursuance of the Government's declared policy to develop the rural areas, the country embarked on the Second Five-Year Social and Economic Development Plan, 1961-1965. Under the Rural Development Plan, the Ministry of Health had envisaged the expansion and development of integrated curative and preventive health services by establishing a network of 100 Rural Health Units to serve 5 million rural population. Each Rural Health Unit comprising of a Main Health Centre with an administrative block for the basic health staff, 4 health sub-centres, and 20 midwives' clinic-cum-quarters, will cater to 50,000 rural population. With this goal in view, 100 main health centres, 400 health sub-centres, and 2,000 midwives' clinic-cum-quarters would have to be established. The Ministry of Health had planned to establish 37 main health centres, 148 health sub-centres and 652 midwives' clinic-cum-quarters under the Second Five-Year Plan, 1961-1965. The Plan was also aimed to consolidate and develop the programme undertaken during the First Five-Year Plan, 1956-1960.

(*a*) In the Second Five-Year Plan, 1961-1965, forty million dollars for Rural Health Development had been allocated.

Estimated Cost of a Rural Health Unit—

(1) Total estimated capital expenditure ...	$1,000,000
Main Health Centre:	
Clinic building	35,000
Administrative block	20,000
Quarters for staff, garage and storeroom	270,000
Land	10,000
Furniture and equipment	25,000
Total ...	$360,000
Health Sub-Centres (4 for each unit):	
Clinic building	$ 35,000
Quarters for staff, garage and storeroom	110,000
Land	5,000
Furniture and equipment	10,000
Total ...	$160,000
Total for (4) ...	$640,000

Midwives' Clinic-cum-Quarters (20 for each unit):	
Building	$ 13,000
Land	500
Furniture and equipment	1,500
Total ...	$ 15,000
Total for (20) ...	$300,000
(2) Total Estimated Annual Recurrent Expenditures	$335,000
Main Health Centre:	
Personal Emoluments	95,000
Other Charges Annual Recurrent ...	40,000
Total ...	$135,000
Health Sub-Centres (4 for each unit):	
Personal Emoluments	$120,000
Other Charges Annual Recurrent ...	80,000
Total ...	$200,000

The estimated costs of land and of construction work may vary from state to state according to accessibility and availability of materials within the area.

(*b*) There was no basic change in the plan except that the functional organisation which would be extended ultimately into all the areas of the country and would constitute as the outposts of an administrative and supervisory network of health organisation from the Ministry of Health to the periphery, would be *the Rural Health Unit.*

(*c*) The idea behind the Rural Health Services Scheme was to provide a working base like the health centres and midwives' clinic and defined operational areas of "kampongs" or villages and homes for the teams of rural health workers.

(*d*) The family units would be the focal point of personal health approach in meeting the needs and problems of the rural people. The villages or "kampongs" and homes would be the site of operational area for field work in community health approach to raise the standard of health in the rural areas.

(*e*) Under this health scheme, it was envisaged to provide and develop the rural health staff of these health units as the frontline rural or community health workers rendering both educational and technical services to the people. For these services to be effective and maintained, the rural health workers would have the basic technical knowledge and skill to apply such knowledge for the benefit of the people to be served. The villages or "kampongs" covered by the rural

health units would be the nucleus of a rural health development area which would also be a part of or within the development area for other services, such as education, agriculture, etc. The front-line rural health staff (medical and health officer, dental officer, public health nurse, public health inspector, hospital assistant, dental nurses, assistant nurses, staff midwives, public health overseers and other auxiliary workers) would effectively serve as rallying points for rural health development approach.

(*f*) To meet the health priority needs and problems of the rural masses, the following programme of integrated curative and preventive health services would be organised and gradually developed at these main health centres and health sub-centres: maternal and child care including domiciliary midwifery and public health nursing; medical care and dispensary services; mental hygiene and improvement of nutritional status of mothers and children; health education and community organisation; rural environmental sanitation; control of communicable diseases; school health services; dental health; maintenance of proper health records and collection of vital and health statistics and informational data necessary for evaluation of health services rendered to the rural families.

3.1. Underlying the entire medical and health development programme was the expansion and acceleration of medical education and training. Among others, the Ministry of Health laid emphasis on organisation, expansion and improvement of public health training programmes and facilities. The facilities and training at the Rural Health Training School, Jitra, Kedah, was expanded to accommodate 54 trainees. A similar Rural Health Training School for 24 trainees was established and organised at Rembau, Negri Sembilan and was put into operation in early 1966. The training courses for public health nurses and public health inspectors were transferred to the newly constructed Public Health Institute for integration and consolidation under one roof and directorship. Training courses of various types would be organised and offered at this Institute.

(*a*) There was acute shortage of doctors to staff the rural health centres and very few liked to join the health services.

(1) Doctors were recruited from Korea, Philippines and from other countries.

(2) Doctors holding the Diploma of Public Health were given special monthly allowance of $350. Those gazetted as Medical Officers of Health without Diploma of Public Health were given monthly allowance of $175.

(*b*) Training intake for all categories of medical and health workers was doubled and accelerated.

3.2. In the light of the needs arising from the rapid expansion of health services and from advanced knowledge, techniques and methods in public health administration, the organisational structure of the Ministry of Health was strengthened by establishing additional posts for professional officers to head the newly created divisions.

(*a*) These officers would be responsible for planning programmes, formulating broad policies, and establishing uniform practices and procedures for their respective fields, for example, maternal and child including domiciliary midwifery and school health; health education and community health organisation; environmental health, communicable disease control; etc. These in turn would be the foundation and basis of operation and supervision of these services at the state, district and rural health unit levels of health organisation of the Ministry of Health. Respective heads of Division will co-ordinate their programmes and technical policies accordingly with each other and with other departments with related programmes.

(*b*) In view of the demands by the Rural Health Development programmes and the rapid expansion of the medical and health services,

(1) a Development Officer responsible for consolidating and co-ordinating the over-all medical and health development plans from all the states was posted at the Ministry of Health in 1960;

(2) an External Liaison Officer responsible for the increasing requests for international assistance, like technical experts, tutorial assistance, fellowships, equipment and supplies, etc., was established in 1960;

(3) a Training Officer responsible for consolidating, co-ordinating and planning the over-all training needs and personnel required for the expansion of medical and health services was established in late 1963; and

(4) a Senior Medical Records Officer was posted at the Ministry of Health to take charge of Records and Health Statistics.

(*c*) Planning and programming of health services are responsibilities of the Ministry of Health but the staff officials at the federal level of the Ministry of Health do not have executive functions. They are responsible for formulating technical policies, programmes and standards of procedures and techniques for their respective fields of specialities like, in public health nursing, maternal and child health care, health education, environmental health, etc.

(*d*) The Chief Medical and Health Officer of each State, consistent with the policies and objectives of the Central Government, through the Ministry of Health, plans, organizes, coordinates, directs, estimates the expenditures and executes medical and health programmes including the Rural Health Development Programmes. The plans and programmes are planned in consultation with the appropriate staff officers of the state, medical, health and dental services (State and Health Matrons, Principal Dental Officer, Senior Medical Officer of Health or Medical Officers of each District, Superintending Pharmaceutical Chemist and Development Officer) and in collaboration and coordination with the State Rural Development Committee.

(1) Every State is divided into administrative health districts. The Medical Officer of Health in charge of a District Health Office is responsible to the Chief Medical and Health Officer or to the Deputy Chief Medical and Health Officer in the State. He is responsible for the total health programme in his district with assistance from technical staff like, the public health sisters, public health inspectors, and hospital assistants. Dental Officers provide dental services to the areas within the district including services at the Rural Health Centres. The Medical Officer of Health with respective staff officers concerned have administrative and supervisory functions over their respective counterparts at the Rural Health Units.

(2) The Medical and Health Officer in charge of a Rural Health Unit would be the team leader of both basic and auxiliary health staff and the coordinator of the rural health services.

(*e*) All State plans and programmes are submitted to the Ministry of Health for review, processing and consolidation. Each State medical and health plans are reviewed in consultation with respective Chief Medical and Health Officer before the over-all plans are submitted to Government for financial allocations and approval.

3.3. In the Second Five-Year Social and Economic Development Plan, 1961-1965, 39 main health centres, 122 health sub-centres and 643 midwives' clinic-cum-quarters were established and put into operation. The basic health services are gradually being developed at these health centres and clinics.

(*a*) The staffing pattern of these Rural Health Units had been very much improved since end of 1965. Of the 39 main centres, 23 have been provided with medical and health officers who also periodically visit the sub-centres linked to the main health centre. The other main health centres and sub-centres are visited by either a medical officer of the district hospital or by a medical officer of health of the district health office. Korean doctors with public health training were posted either at the district health office or main health centre. The Government would be recruiting doctors from the Philippines and the United Arab Republic.

(*b*) The Rural Health Units are operating with either minimum staff or full complement of staff as provided in the "Organisation of Rural Health Services in Malaya", 1963. However, there are a number of health staff without public health training. There is a great need to accelerate and improve the training programmes for public health workers. Transport facilities are needed for mobility of the supervisory staff and of the front-line rural health workers. The field health staff would need transport in working in the villages and getting the participation of the rural people.

3.4. The National Health Council to the Ministry of Health was established in 1963 and several committees to deal with special problems or with certain technical phases of the health programme were organised.

3.5. The World Health Organisation provided technical assistance in developing projects for training health personnel and for organising the rural health services.

(*a*) At Jitra, a Rural Health Training School and a demonstration and training health centre (WHO/UNICEF assisted project) was established for the primary purpose of preparing auxiliary health personnel in rural or community health work. A similar training school and demonstration and training health centre is being organised in Rembau.

(*b*) WHO Medical Officer, Malaya—24 Project, had assisted in formulating policies on the organisation and administration of rural health services and in improving training and services for the promotion of health and prevention of diseases.

(*c*) A WHO Project Team, Malaysia--35, composed of WHO Medical Officer, Sanitarian and Public Health Nurse, had been giving assistance in strengthening the organisation and operation of rural health services and health personnel training. Emphasis had been on the development of the most important basic health services, such as, rural environmental sanitation, public health nursing, maternal and child care including domiciliary midwifery, and training programmes which will best meet the needs of the Rural Health Service Scheme.

(*d*) WHO Fellowships had also been given to Officers who are holding responsible positions to enable them to renew their scientific knowledge and contacts in their respective fields and to give opportunities in keeping up with the modern developments in public health methods and techniques and in public health administration.

3.6. In the past, UNICEF extended material assistance in equipping the expanding maternal and child welfare facilities and training schools. With integration of maternal and child health services with other fields of basic health services at the main health centres, health subcentres and midwives' clinics, UNICEF had increased its assistance to the Rural Health Services Scheme to include equipment, supplies and transports for dental health service, improvement of rural environmental sanitation—kits, water pumps and tools through Pilot Projects, health education, and other related needs such as refrigerators and books for training institutions. The Government requested continuing assistance from UNICEF in equipping the main health centres, health sub-centres and midwives' clinic-cum-quarters and training institutions to be constructed under the Five-Year Social and Economic Plans.

4. The Third Five-Year Plan called the "First Malaysia Plan" 1966-1970, was envisaged upon the birth of Malaysia in 1963 which included the States of Sabah, Sarawak and Singapore. However, Singapore became a Republic upon its separation in 1965. Due to financial burdens of confrontation by Indonesia, the expenditures for the development programmes had been cut

down. The Rural Health Development Programme provided the construction of 60 sub-centres and 450 midwives' clinic-cum-quarters and would deal mainly with arrears of maintenance of and improvements to existing installations—mainly hospitals. With the cutting down of construction programme for rural health centres, the Ministry of Health would consolidate and develop the rural health services at those established rural health centres and midwives' clinic-cum-quarters. Public health being an integral part of the social and economic development of the country, the pattern of public health administration has changed to emphasize positive approach in the organization of rural health services. Such positive approach is to create healthy environment and to educate the rural people for active participation in the improvement of their health conditions. The community health development approach would have to be applied by the technical service staff in the process of extending health services to the rural masses.

III—INTEGRATION OF SPECIAL PROGRAMMES

Programmes for special diseases such as yaws, malaria, leprosy, filariasis and other prevalent communicable diseases would, in due time, be integrated into the activities of the rural health staff concerned. Integration can be made possible by either:

(*a*) the special team for the control programme can be additional staff at the rural health centres and would carry on surveillance and control measures in areas where the disease had been prevalent; or

(*b*) the rural health staff of the rural health units would co-ordinate with the special team and would carry on the surveillance and control measures in areas where the incidence of disease had already been under control.

The Rural Health Units are serving as detector centres for these diseases by early recognition, prompt treatment or referral to the agency responsible for the special control programme, institution of hygienic measures for the control of the disease, investigation and follow up of cases and contacts and giving of immunization such as BCG, triple antigen, etc. The yaws campaign had now developed where the rural health staff is carrying on the work of surveillance of cases in those areas where the disease had been under control.

IV—STUDIES AND PILOT PROJECTS

1. Substantial reduction in incidence of many of the diseases which are attributable to defective environment in the rural areas could be attained by improving the environmental sanitation, even if confined to providing safe water supply and proper disposal of excreta and refuse. Recognising these problems in the rural areas, the Ministry of Health has decided to carry out pilot projects in improving the environmental sanitary conditions in each state before launching a nation-wide campaign. The purposes of the pilot projects are:

(*a*) to gather experiences and informational data on the most economical and effective methods of conducting sanitation campaigns in the rural areas;

(*b*) to gain knowledge on the technical aspects of well and latrine constructions, installations and maintenance of these facilities; and

(*c*) to obtain the participation of the people in planning and carrying out activities for solving sanitation problems.

As an initial step before launching the pilot projects in each state, public health inspectors and public health overseers involved in the project areas selected were given a training course. Three courses had already been held, one at the Rural Health Training School, Rembau, in August, 1966, the other two courses at Kuala Trengganu and at the Rural Health Training School, Jitra, respectively in September, 1966.

2. The Government, through the Food and Nutrition Committee of the National Health Council, is planning an Applied Nutrition Project with the following objectives:

(*a*) to demonstrate how the various resources and agencies can be co-ordinated and their activities integrated with community participation to improve their nutritional status under "Gerakan Maju";

(*b*) to serve as a training field in Applied Nutrition for various community extension workers and leaders; and

(*c*) to prepare for an expanded Applied Nutrition Programme based on the experience gained in the project.

The plan of operation for this Applied Nutrition Project will be submitted to the Ministry of National and Rural Development which will be the co-ordinating body for this project. A co-ordinated field services programme which will operate in a limited area and through health services, schools, agriculture and co-operative services, and rural development programme is being envisaged in this project. The selection of the pilot area for this Applied Nutrition Project is still under consideration. Further meetings are being held to determine the location and to finalise the plan of operation.

3. Studies on the activities of various categories of health nursing staff at main health centres and health sub-centres are being carried out. These studies would provide some baseline to ensure the maximum contribution of health nursing personnel in strengthening the rural health services.

4. Plans to develop school health service as an integral part of the rural health services and as a continuing activity and programme of the rural health staff has been envisaged by the Ministry of Health. In many of the rural health centres where there is full complement of health staff, school health service has been started as a pilot project. However, to develop a school health programme of which school health service is a part, co-ordination and collaboration with the school authorities and participation of parents and the community as a whole are essential. A joint School Health Committee between the health and education ministries would have to be established. There are some aspects of the school health programme which would require co-ordination with other departments and voluntary organisations and community action and participation.

5. The Ministry of Health feels that pilot projects are most effective if they are associated with training activities. Hence the Ministry plans to carry out pilot projects and action research in the demonstration areas of the Rural Health Training Schools at Jitra, Kedah, and at Rembau, Negri Sembilan, and at the Public Health Institute, Kuala Lumpur. With this in view, there will be increasing numbers of trainees coming from all over the country who will gain experience at these pilot projects and who will eventually use these experiences for expansion to other areas. The newly created Public Health Institute is now planning to take over the technical supervision of the two Rural Health Training Schools and demonstration and training health centres at Jitra and Rembau with a view to co-ordinate action research aimed in strengthening the rural health services with special emphasis in improving methods of getting community participation.

V—TRAINING

For the rural community health programme to succeed, it is necessary to have properly selected and adequately trained community health workers. These health workers should familiarise themselves with the principles and techniques of working with groups and of community development. The Ministry of Health has made provisions in this respect, by establishing the rural health training schools and demonstration centres at Jitra and at Rembau and the Public Health Institute at Kuala Lumpur. In the theoretical and practical instructions, topics on health education methodology and community organisation, group work and the principles and techniques of community development had been included in the training courses provided at these institutions. This is important since in rendering their services, these front-line workers come into intimate contact with all sections of the community and this brings them in positions wherein they can exert the desired influence on the community. The rural health services had been planned on practical basis and rendered by personnel trained to do the job. Properly trained and supervised health personnel are necessary to apply the modern technical knowledge of preventive and curative services and the principles and techniques of community development. The most effective method of promoting the people's interest and gaining their confidence is the provision of sound health services directed to meet their basic needs. Unless health services produce tangible results, it will be hard to sustain the community's interest and confidence in the rural health staff. The principle that community health programme should "start with people as they are and the community as it is" can be applied anywhere.

VI—EVALUATION

1. There are various ways of evaluating the operational progress achieved in improving the standard of health of the people, depending on the types of services being provided and on the stated objectives. Evaluation of development plans would be done at frequent intervals by measuring performance against the objectives set in the plans. This would include the assessment of the

organisational and administrative aspects of the services as well as an appraisal of the operational activities and progress of the programme. Evaluation can be performed to measure:

(1) effort;

(2) performance;

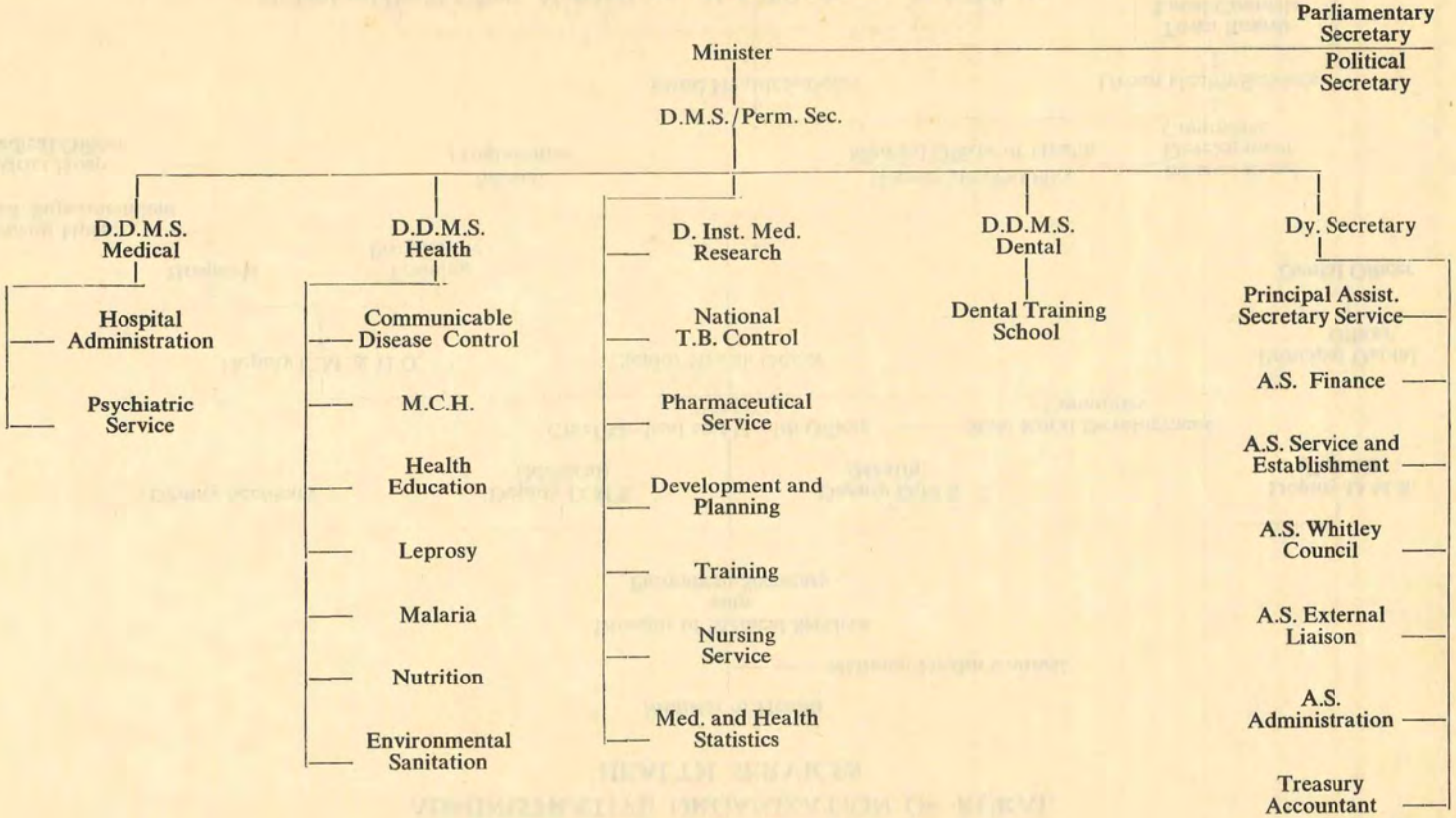
(3) adequacy of performance; and

(4) efficiency.

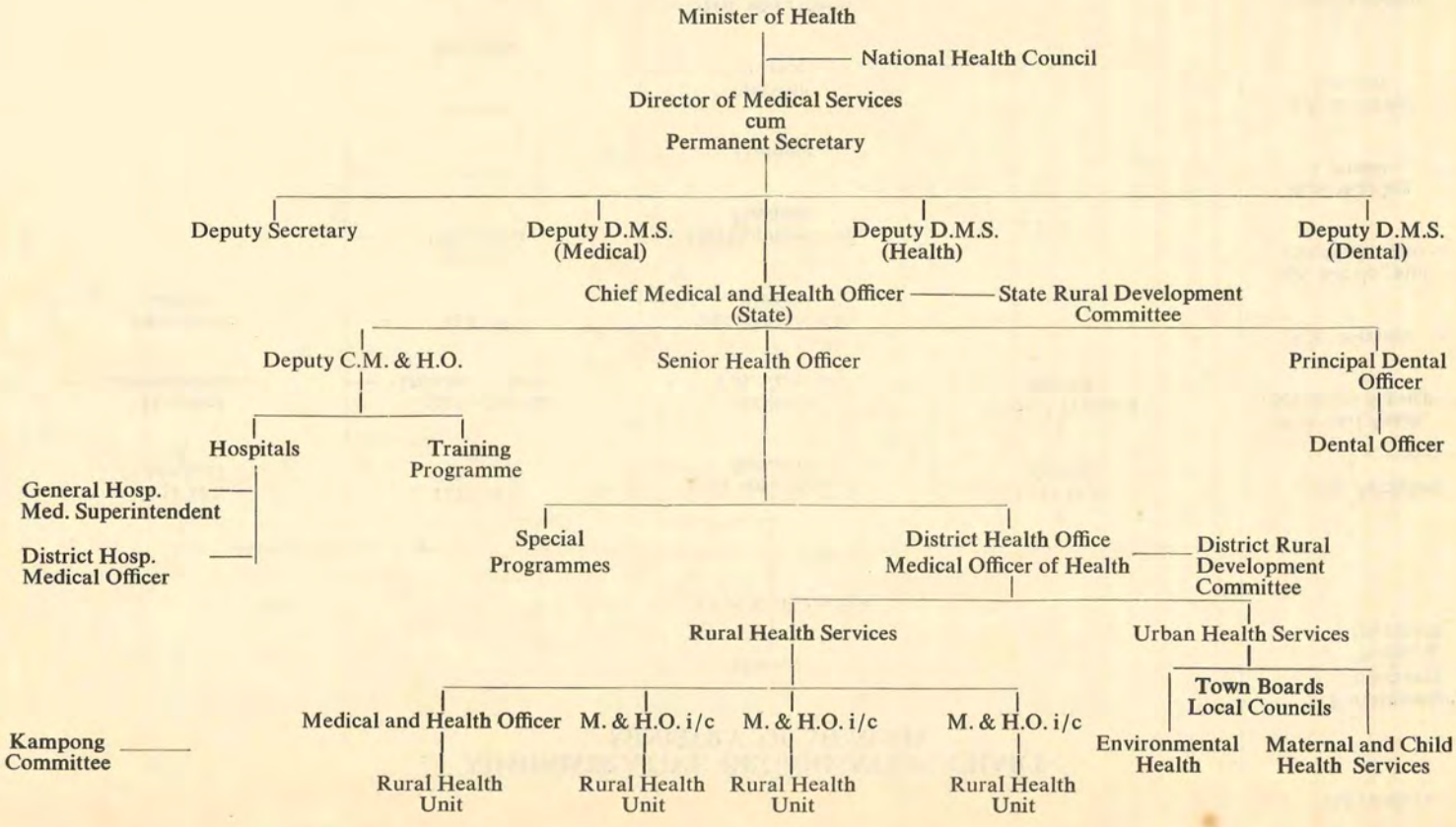
It is important to study the total impact of health programmes on the rural community and to note the great diversity of ways and means of rendering health services to the people and the ways the people participate, react and accept the responsibility in improving their own health standard. Evaluation could be enormously helpful in adjusting programmes, changing priorities, balancing efforts of the Government and the people, and making it possible to curtail unproductive activity.

2. The Ministry of Health is continuously laying stress on the effectiveness of the health services provided to the people. In its effort in evaluating the effectiveness of the rural health services, it was felt that a sound practical system of recording the work done and the results obtained was necessary. The Ministry of Health has therefore designed booklets for recording general information and statistical data on the work load and accomplishments of the rural health staff of each main health centre, sub-centre and midwife's clinic and on the state of health of the people and community as a whole. This information and statistical data when properly utilized, collected, compiled and analysed can be used as a means of evaluation of the rural health programmes. The Booklets which were introduced early this year for the use of the rural health units would be an important administrative process to effect teamwork and co-ordination among the rural health staff. After a period of pre-testing the contents and formats, these would be reviewed to provide the necessary information and statistical data for evaluation purposes. To improve recording and reporting system at the health centres, the machinery and facilities for this system are necessary, such as, filing cabinets, systematic and organised record forms, clerk or record clerks, etc. The Ministry of Health has sought UNICEF assistance for providing equipment necessary for establishing an organised system of recording and reporting.

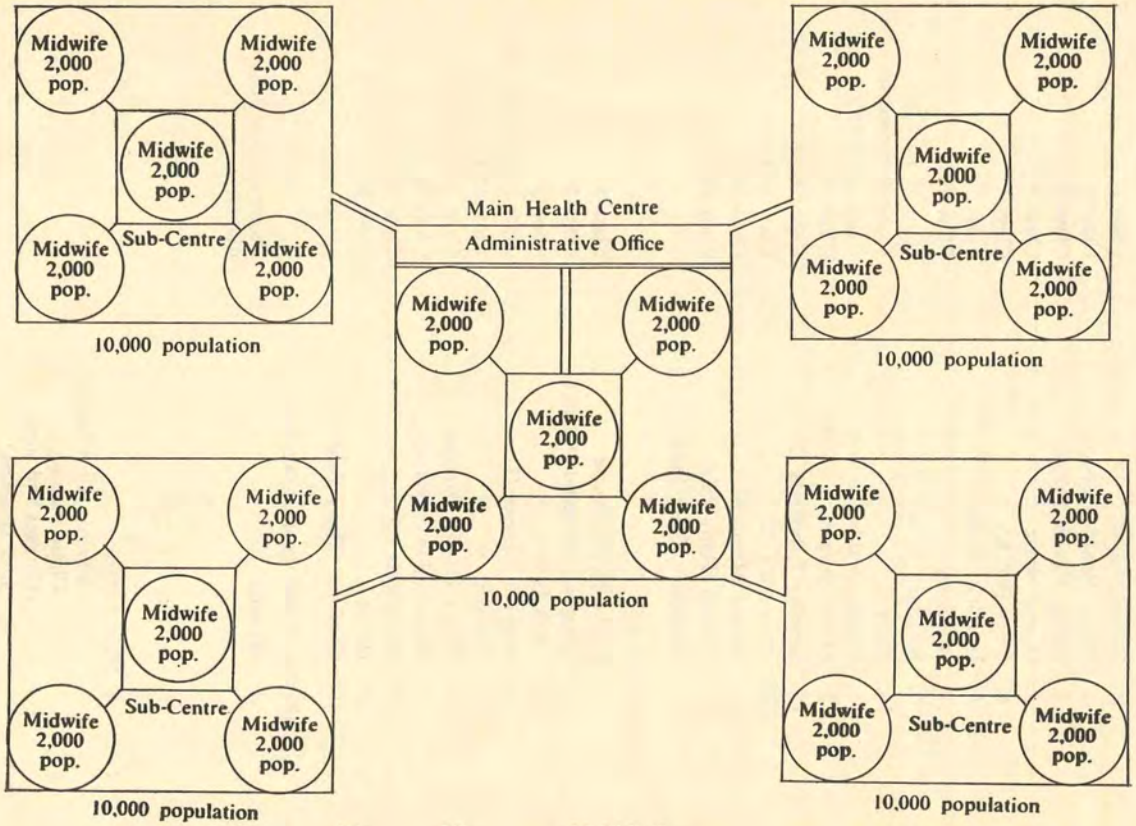
ADMINISTRATIVE ORGANISATION CHART— MINISTRY OF HEALTH



ADMINISTRATIVE ORGANIZATION OF RURAL HEALTH SERVICES



RURAL HEALTH SERVICES SCHEME



HEALTH UNIT FOR 50,000 POPULATION

APPENDIX "D"

STAFF FOR A RURAL HEALTH UNIT

Category of Staff	Type of Quarters
A. MAIN CENTRE:	
1. Medical and Health Officer	Class C modified
2. Dental Officer	Class C
3. Public Health Inspector	Class F
4. Public Health Nurse	Class F
5. Dental Nurse	Class F
6. Clerk (S.C.S.)	Class F
7. Hospital Assistant	Class F
8. Dispenser	Class F
9. Assistant Nurses (2)	Class H modified (2)
10. Midwife	Class H modified
11. Public Health Overseer	Class H modified
12. Dental Surgery Assistant	Class H
13. Sanitary Labourers (2)	Class H (2)
14. Attendants (2)	Class H (2)
15. Dental Attendant	Class H
16. Drivers (Daily Paid)	Class H (2)
17. Gardener (Daily Paid)	—
B. SUB-CENTRE:	
1. Public Health Nurse	Class F
2. Dispenser/Hospital Assistant ...	Class F
3. Clerk (S.C.S.)	Class F
4. Assistant Nurses (2)	Class H modified (2)
5. Midwife	Class H modified
6. Public Health Overseer	Class H modified
7. Sanitary Labourers (2)	Class H (2)
8. Attendants (2)	Class H (2)
9. Driver	Class H
10. Gardener (Daily Paid)	—
C. MIDWIFE CLINIC-CUM-QUARTERS:	
1. Midwife	Prototype clinic-cum-quarters

---

1 Main Centre—

1. Administrative block.
2. Clinic building.
3. Garages and store.
4. Staff Quarters.

4 Sub-Centres—

(For each sub-centre)

1. Clinic building.
2. Garage and store.
3. Staff Quarters.

20 Midwives Clinic-cum-Quarters—

Clinic-cum-Quarters.

APPENDIX "E"

PREVENTIVE AND CURATIVE FUNCTIONS OF A RURAL HEALTH UNIT

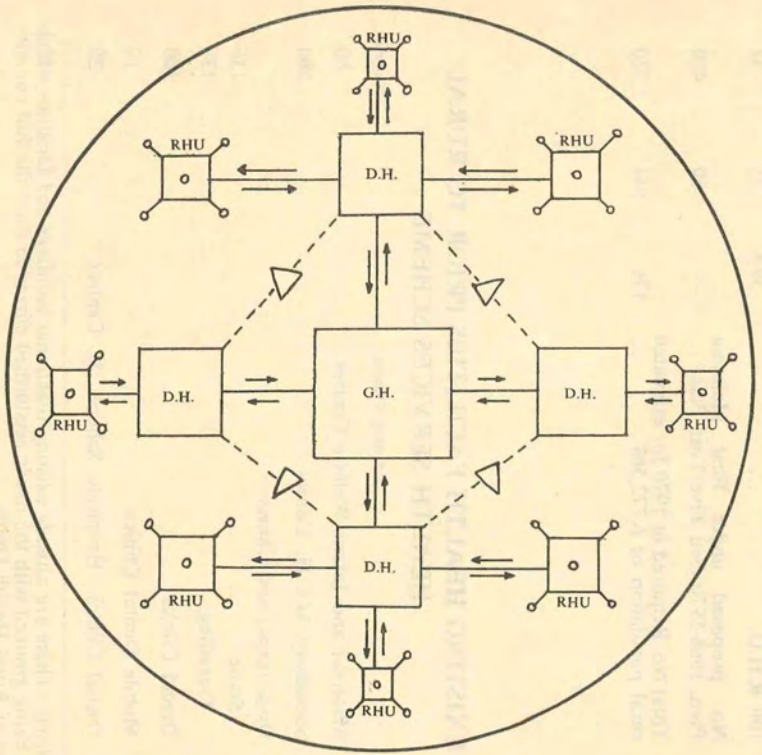
Basic Health Services	Brief Outline of Services
1. Maternal and Child Health and Public Health Nursing	(*a*) Ante-natal care at home and at clinics. (*b*) Home delivery of normal cases, and after care of mother and child, family planning. (*c*) Child Health Clinics for infants and toddlers. (*d*) School Health Services. (*e*) Nutrition Programme. (*f*) Home visiting—family as unit of services.
2. Control of Communicable Diseases	(*a*) Immunisation programme at Child Health Clinics. (*b*) Investigation of notifiable diseases. (*c*) Mass immunization, etc., during epidemics.
3. Environmental Sanitation	Rural Sanitation Campaign in surrounding villages conducted by P.H. Inspector and P.H. Overseers under the direction of the M. and H.O. Sanitary labourers help in demonstrations in the villages.
4. Medical Care ..	(*a*) Weekly General Sick Clinics at Main Centre and Sub-centres. (*b*) Travelling Dispensaries on other days. (*c*) Home visiting or follow-up of communicable diseases.
5. Dental Care ...	(*a*) Weekly Dental Clinics at Main Centre and Sub-centres. (*b*) Visits to schools. (*c*) Dental Care of pregnant mother and of children.
6. Laboratory Services...	Simple laboratory procedures carried out by Hospital Assistant and M.C.H. Staff.
7. Health Education of the Public	(*a*) Carried out by all categories of staff, given to individuals or to groups at home, in the clinics, school, etc. (*b*) Use of visual aids, e.g., flannelgraphs, posters, demonstration, health exhibitions, films, etc. (*c*) Community organization for health projects.
8. Records and Reporting	(*a*) Recording and reporting of work load and accomplishments. (*b*) Compiling Vital and Health Statistics of the operational area. (*c*) Collection and analysis of information and statistical data.

APPENDIX "F"

SUGGESTED PROGRAMME OF CLINIC SESSIONS AND ACTIVITIES IN A HEALTH UNIT

CENTRES	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
MAIN HEALTH CENTRE I	ANTE-NATAL CLINIC Dispensing	DENTAL CLINIC FIELD WORK	CHILD HEALTH CLINIC Dispensing	FIELD WORK Home Visit School Health Programme	OUTPATIENT CLINIC Dispensing Field Work	OFFICE WORK Staff Meeting Reports	OFF
HEALTH SUB-CENTRE II	DENTAL CLINIC FIELD WORK By other staff	CHILD HEALTH CLINIC Dispensing	FIELD WORK Home Visit School Health Programme	OUTPATIENT CLINIC Dispensing Field Work	ANTE-NATAL CLINIC Dispensing Visit by P.H.O.	OFFICE WORK Staff Meeting Reports	OFF
HEALTH SUB-CENTRE III	CHILD HEALTH CLINIC Dispensing	FIELD WORK Home Visit School Health Programme	OUTPATIENT CLINIC Dispensing Field Work	ANTE-NATAL CLINIC Dispensing Visit by P.H.O.	DENTAL CLINIC FIELD WORK By other staff	OFFICE WORK Staff Meeting Reports	OFF
HEALTH SUB-CENTRE IV	FIELD WORK Home Visit School Health Programme	OUTPATIENT CLINIC Dispensing Field Work	ANTE-NATAL CLINIC Dispensing Visit by P.H.O.	DENTAL CLINIC Field Work By other staff	CHILD HEALTH CLINIC Dispensing	OFFICE WORK Staff Meeting Reports	OFF
HEALTH SUB-CENTRE V	OUTPATIENT CLINIC Dispensing Field Work	ANTE-NATAL CLINIC Dispensing Visit by P.H.O.	DENTAL CLINIC FIELD WORK By other staff	CHILD HEALTH CLINIC Dispensing	FIELD WORK School Health Programme Home Visit	OFFICE WORK Staff Meeting Reports	OFF

NOTE—The Public Health Inspector would have to frame his programme of field work and visit to the centre for co-ordination of activities with other staff.
The Public Health Overseer could assist by giving talks on aspects of environmental sanitation.



General Hospital.

District Hospital.

Rural Health Unit.

o Midwife's Clinic.

△ Special Institutions. and Public Health Programmes.

DIAGRAM SHOWING RELATIONSHIPS AMONG GENERAL AND DISTRICT HOSPITALS AND RURAL HEALTH UNITS IN A CO-ORDINATED MEDICAL AND HEALTH SERVICE

APPENDIX "H"

CONSTRUCTION PROGRAMME OF THE RURAL HEALTH SCHEME

No.	5-Year Plan	Types of Clinics		
		Main Health Centres	Sub-Health Centres	Midwives' Qrs. and Clinics
1.	No. built for 1st 5-year plan 1956-1960	8	8	26
2.	No. proposed for 2nd 5-year plan ...	37	148	652
3.	No. built for 2nd 5-year plan	31	114	617
4.	Total No. built from 1956 until end of 1965	39	122	643
5.	Total No. required for rural population of 5,000,000	100	400	2,000
6.	No. Deficient for rural population of 5,000,000	61	277	1,357
7.	Percentage based on target set for 100 R.H.U.	39%	35	32
8.	No. proposed under First Malaysia Plan, 1966-1970 (3rd Five-Year Plan) ...	—	60	450
9.	Total No. Required in 1970 for estimated rural population of 6,772,568	136	544	2,720

EXISTING HEALTH FACILITIES PRIOR TO RURAL HEALTH SERVICES SCHEME

No.	Existing Clinics	Number
1.	Maternal and Infant Welfare Centres	60
2.	Subsidiary M.C.H. Clinics	500
3.	Dispensaries and Clinics—	
	Static	156
	Travelling	139
4.	Dental Clinics	100
5.	Mobile Dental Clinics	10
6.	Dental Clinics—Hospitals, Schools, H. Centres	20

NOTE—These are already existing functional buildings and facilities which are being grouped with the newly established clinics to form the full complement of Rural Health Units.

APPENDIX "I"

DEVELOPMENT PROGRESS OF CONSTRUCTION PROGRAMME, 1961-1965

By States

STATES	1961*			1962			1963			1964			1965		
	M.C.	S.C.	Md.C.L.	M.C.	S.C.	Md. CL.	M.C.	S.C.	Md. CL.	M.C.	S.C.	Md. CL.	M.C.	S.C.	Md. CL.
PERLIS	—	—	—	—	1	12	1	4	20	1	4	20	1	4	20
KEDAH	1	3	2	2	8	58	3	18	63	3	18	72	3	18	86
PENANG	—	—	—	—	—	19	—	3	21	1	3	29	1	4	45
PERAK	1	4	6	2	5	39	5	9	51	5	13	73	6	17	75
SELANGOR	1	1	1	4	4	25	7	10	29	7	10	40	7	13	53
NEGERI SEMBILAN	1	3	18	2	6	34	2	9	39	2	9	51	2	10	53
MALACCA	1	—	3	2	5	29	2	6	32	2	6	35	2	8	42
JOHORE	1	—	6	2	10	65	4	16	73	4	16	96	4	18	100
PAHANG	1	—	10	3	5	53	6	14	67	6	15	83	6	16	98
TRENGGANU	1	—	9	1	2	18	3	5	23	4	5	37	4	6	39
KELANTAN	1	—	—	3	4	21	3	8	22	3	8	26	3	8	32
TOTAL	9	11	55	21	50	373	36	102	440	38	107	562	39	122	643

* 8 Main Centres, 8 Health Sub-Centres and 26 Midwife Clinics were constructed during the 1st Development Plan (1956-1960).

M.C. = Main Health Centre. S.C. = Health Sub-Centre. Md. CL. = Midwife Clinic.

APPENDIX "J"

DEVELOPMENT PROGRESS REPORT, 1961-1965

PARTICULARS	INCREASE		EXISTING NUMBER							Cumulative Increase since 31st December, 1960
	1956-1960 (Actual)	1961-1965 (Target)	31st December, 1956	31st December, 1960	31st December, 1961	31st December, 1962	31st December, 1963	31st December, 1964	31st December, 1965	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. Hospital, number	—	3	65	65	65	65	65	65	65	—
2. Hospital beds (including temp. beds), number	866	1,000	20,288	21,102	21,278	21,747	25,191	25,575	25,888	4,786
3. Fixed Dispensaries, number ..	33	—	151	215	217	222	245	266	283	68
4. Mobile Dispensaries, number ..	61	—	85	143	144	142	148	155	155	12
5. Urban Health Centres, number ..	19	3	72	124	126	127	128	128	128	4
6. Rural Health Centres, number ..	8	37	4	8	9	21	36	38	39	31
7. Sub-Health Centres, number ..	8	148	—	8	11	50	102	107	122	114
8. Midwives' Clinics, number ..	26	652	—	26	55	373	440	562	643	617
9. Dental Clinics (including part-time clinics), number	57	168	71	146	230	267	269	287	322	176
10. Doctors, number	124	169	376	391	419	438	424	487	502	111
11. Dentists, number..	34	48	64	86	94	96	107	106	114	28
12. Nurses (including student nurses), number	316	1,102	1,090	1,366	1,606	2,084	2,335	2,535	2,631	1,265
13. Dental Nurses (including student nurses), number	66	106	—	66	94	94	134	180	280	214
14. Assistant Nurses (including pupil a.n.), number	n.a.	830	335	1,082	1,109	1,207	1,405	1,981	2,221	1,139
15. Hospital Assistants (including probationers), number	n.a.	101	n.a.	1,015	1,006	1,037	990	1,116	1,121	106
16. Midwives (including pupil mid-wife), number	n.a.	704	n.a.	895	934	1,053	1,278	1,706	1,824	929
17. Health Inspectors (including pro-bationers), number	n.a.	147	n.a.	203	215	212	217	230	289*	86

DEVELOPMENT PROGRESS REPORT, 1961-1965—(*cont.*)

PARTICULARS	INCREASE		EXISTING NUMBER							Increase between 1960-1965
	1956-1960 (Actual)	1961-1965 (Target)	31st December, 1956	31st December, 1960	31st December, 1961	31st December, 1962	31st December, 1963	31st December, 1964	31st December, 1965	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
18. Hospital In-patients—total admissions	65,555	—	259,838	308,385	325,427	348,414	379,432	409,124	423,393	115,008
19. Hospital Out-patients—total attendances	n.a.	—	2,767,959	4,296,015	4,651,231	5,253,617	5,396,759	5,902,983	5,952,787	1,656,772
20. Rural Health Services including Static and Mobile Dispensaries—total attendances	n.a.	—	4,492,022	5,136,336	5,114,419	5,682,426	6,661,069	6,730,457	6,969,864	1,833,558
21. Home visits by Rural Health Staff	252,303	—	529,156	843,073	842,619	961,360	1,133,855	1,292,171	1,484,767	641,694
22. Deliveries conducted by Rural Health Staff	n.a.	—	n.a.	44,759	48,083	53,244	58,682	62,563	64,555	19,196
23. Dental Clinics—total attendance	193,861	—	460,298	655,140	754,896	851,168	849,672	928,118	1,032,040	376,900

* Includes 76 Public Health Inspectors seconded to Local Authorities.

APPENDIX "K"

SUMMARY OF RETURNS ON MATERNAL AND CHILD HEALTH SERVICES

By States, 1961-1965

STATES	1961			1962			1963			1964			1965		
	Clinic Attendances	Home Visits	Deliveries	Clinic Attendances	Home Visits	Deliveries	Clinic Attendances	Home Visits	Deliveries	Clinic Attendances	Home Visits	Deliveries	Clinic Attendances	Home Visits	Deliveries
PERLIS	146,704	68,360	7,117	166,271	56,986	6,358	169,767	61,549	6,668	34,469	18,412	1,360	41,543	25,702	1,469
KEDAH	22,553	15,015	1,194	22,872	9,637	4,131	21,779	12,014	3,025	226,860	93,633	7,558	250,269	98,921	7,399
PENANG	179,822	99,870	2,822	185,161	94,205	3,153	187,975	102,902	3,419	186,106	92,949	3,406	182,910	94,970	3,749
PERAK	464,416	163,587	9,686	505,855	178,650	9,950	479,583	184,063	10,120	553,269	202,355	10,624	408,993	185,733	11,896
SELANGOR ..	275,339	116,697	4,397	299,238	138,125	5,028	282,334	138,416	5,604	305,066	156,621	6,244	311,782	175,079	6,522
NEGERI SEMBILAN	129,366	57,555	3,811	146,718	60,784	4,327	139,081	64,331	4,194	149,835	59,791	4,375	178,743	74,950	4,094
MALACCA ..	253,657	89,561	1,971	285,942	96,277	2,486	347,036	116,861	3,364	355,483	119,146	3,880	382,888	127,186	3,970
JOHORE	230,070	127,942	7,791	272,961	172,538	8,832	278,099	244,435	10,814	351,039	289,069	11,323	352,821	327,307	11,728
PAHANG	135,009	34,325	4,033	173,649	70,776	3,589	167,704	88,248	4,400	192,914	101,319	4,921	205,912	144,377	5,161
TRENGGANU ..	93,101	12,182	1,493	88,666	16,111	1,384	72,041	34,796	2,327	75,346	59,618	3,307	86,821	60,525	3,011
KELANTAN ..	77,819	57,525	3,768	91,349	67,271	4,006	104,417	86,240	4,747	120,921	99,258	5,565	137,369	170,017	5,556
TOTAL ..	2,007,856	842,619	48,083	2,238,682	961,360	53,244	2,249,816	1,133,855	58,682	2,551,308	1,292,171	62,563	2,540,051	1,484,767	64,555

APPENDIX "L"

TRAINING PROGRAMME, 1961-1965—AT LOCALLY ESTABLISHED TRAINING SCHOOLS AND CENTRES

Type of Training School/Centre	No. of School/Centre	Maximum In-take Capacity per annum	Duration of Course	No. Trained or qualified 1961-1965	No. in training 1966	Remarks
Faculty of Medicine, University of Malaya	1	100-120	6 years	—	274	Established in 1963
School of Nursing .. .. (student nurse + probationer HA)	3 registered nurse	300	40 months ..	107 (males) 691 (females)	168 (males) 691 (females)	Penang established in 1947; Kuala Lumpur in 1959; Johore Bahru, 1960
School of Dental Nursing..	1	40	24 months ..	147*	115	*33 students from outside West Malaysia
Dental Technicians' School	1	15	24 months ..	30*	31	*13 students from outside West Malaysia
Assistant Nurses' Training Centre ..	16 } various hospitals	560	24 months ..	2,285	399	
Midwives' Training Centre Div II. ..	14 } various hospitals	350	24 months ..	1,577	315	
Nurse Midwife Training Centre Div I ..	4	188	12 months ..	442	176	In-take in 2 batches a year of 94 per batch
Public Health Inspectors' Training School*	1 Dip. of the R.S. for the prom. of health, Lond.	24	1 academic year }	90	7	Established in 1959
Public Health Visitor's Training School* ..	1 PHV Cert. of the R.S. for the prom. of health	24	1 academic year }	65	27	Established in 1954
Anti-Malarial Inspectors' Training School*	1	60	12 weeks.. ..	89	19	Established in 1961
Dispensers' Training School	1	60	36 months ..	84	46	Established in 1956
School of Radiography	1	15	24 months ..	25	30	Established in 1963
Laboratory Assistants' Training School..	1	20	36 months ..	75	13	Established in 1961
Rural Health Training School	2 Supervisors ..	80	4 weeks.. ..	85	25	Jitra established in 1956 and Rembau in 1966—Annual In-take in two batches of 40 supervisors and 60 auxiliaries per batch
	Auxiliaries ..	120	16 weeks ..	220	33	
Tuberculosis Training Centre	1 T.B. Control Methods (Supervisory)	48	4 weeks.. ..	437	26	Established in 1961
	T.B. Control Methods (Auxiliary)	168	8 weeks.. ..	649	70	Established in 1961
	Lab. Techs. ..	10	6 months ..	25	—	Established in 1963
	X-ray operators..	60	4 months ..	99	—	Established in 1962

* Public Health Institute.

APPENDIX "M"

ESTIMATED POPULATION FOR THE STATES OF MALAYA, 1957-1970

URBAN AND RURAL AREAS

Years	Estimated Mid-Year Population		
	Urban and Rural	Urban	Rural
1957	6,278,763	1,666,974	4,611,789
1958	6,515,385	1,765,242	4,750,143
1959	6,697,827	1,805,180	4,892,647
1960	6,909,009	1,869,583	5,039,426
1961	7,136,804	1,946,195	5,190,609
1962	7,376,031	2,029,704	5,346,327
1963	7,730,520	2,223,803	5,506,717
1964	7,934,626	2,262,707	5,671,919
1965	8,172,665	2,330,588	5,842,077
1966	8.417,845	2,400,506	6,017,339
1967	8,670,380	2,472,521	6,197,859
1968	8,930,491	2,546,696	6,383,795
1969	9,198,406	2,623,097	6,575,309
1970	9,758,589	2,986,021	6,772,568

APPENDIX "N"

FORECASTED POPULATION DURING 1966 TO 1972

By Age Groups

(In Thousands)

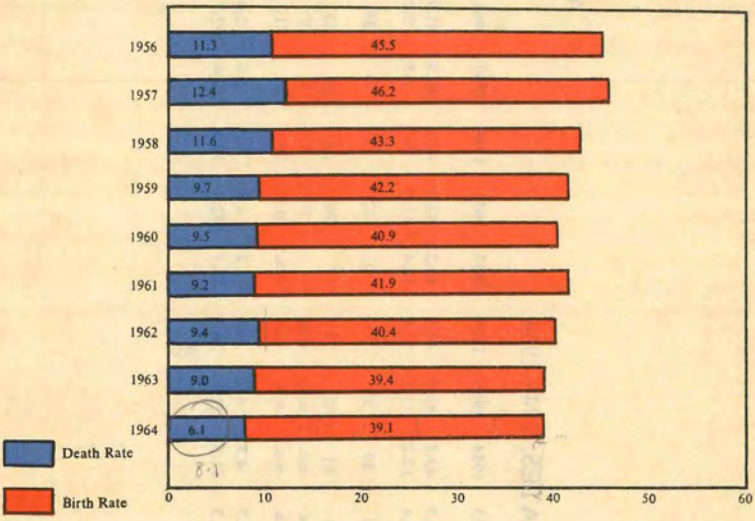
AGE GROUP	TOTAL POPULATION — January							
	1966	1967	1968	9∘ 1969	1970	1970	1971	1972
0-4	1,397	1,456	1,502	17·4 1,553	1442	1,608	1,669	1,732
5-9	1,216	1,228	1,257	14·4 1,288	1314	1,324	1,363	1,406
10-14	1,088	1,123	1,140	12·9 1,153	1181	1,169	1,190	1,215
15-19	806	912	963	11·3 1,013	1024	1,053	1,086	1,112
20-24	650	658	703	8·4 754	764	805	853	899
25-29	558	576	577	6·5 578	632	590	613	645
30-34	475	487	506	5·9 525	552	540	552	563
35-39	394	411	423	4·9 434	460	447	460	474
40-44	340	344	354	4·1 363	391	375	386	397
45-49	303	308	310	3·5 312	342	315	321	328
50-54	264	267	272	3·1 276	299	281	284	287
55-59	221	226	229	2·6 232	258	236	239	242
60-64	164	172	178	2·1 184	207	188	193	197
65-69	110	114	120	1·4 126	140	131	136	142
70-74	66	70	72	0·9 76	144	79	82	86
75-79	37	38	40	0·5 42		44	46	47
80 and over ..	27	29	29	0·3 31		32	33	35
TOTAL ..	8,116	8,416	8,675	100 8,940	9150	9,217	9,506	9,807

VITAL STATISTICAL RATES, 1946-1964

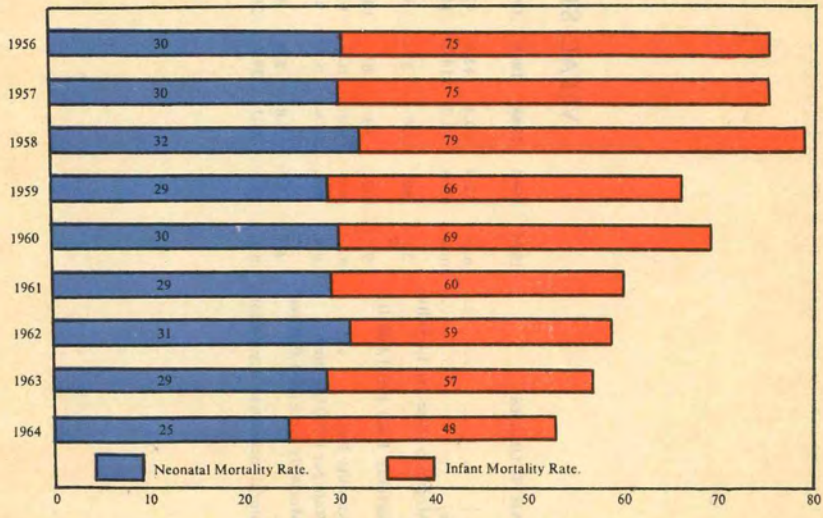
PARTICULARS	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
1. Birth Rate	n.a.	42.9	40.4	43.8	42.0	43.6	44.4	43.7	43.8	43.0	45.5	46.2	43.3	42.2	40.9	41.9	40.4	39.4	39.1
2. Death Rate	n.a.	19.4	16.2	14.2	15.8	15.3	13.6	12.4	12.2	11.5	11.3	12.4	11.0	9.7	9.5	9.2	9.4	9.0	8.1
3. Neonatal Mortality Rate per 1,000 live births	32	40	36	33	34	32	32	31	30	30	30	30	32	29	30	29	31	29	25
4. Infants Mortality Rate per 1,000 live births	92	102	89	81	102	97	90	83	83	78	75	75	79	66	69	60	59	57	48
5. Toddler Mortality Rate	n.a.	n.a.	n.a.	n.a.	n.a.	n. a.	n.a.	n.a.	n.a.	n.a.	n.a.	11	9	8	8	8	8	7	6
6. Still Birth Rate per 1,000 live births ..	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	24	22	21	23	22	22
7. Maternal Mortality Rate per 1,000 live births	6.7	7.0	5.8	5.2	5.3	5.7	5.2	4.7	4.8	4.2	4.0	3.2	2.8	2.1	2.4	2.0	2.3	2.2	2.1
8. Rate of Natural Increase in Population	n.a.	23.5	24.1	29.6	26.2	28.3	30.8	31.3	31.6	31.6	34.3	33.1	32.3	32.4	31.4	32.7	31.0	30.5	31.1

APPENDIX "P"

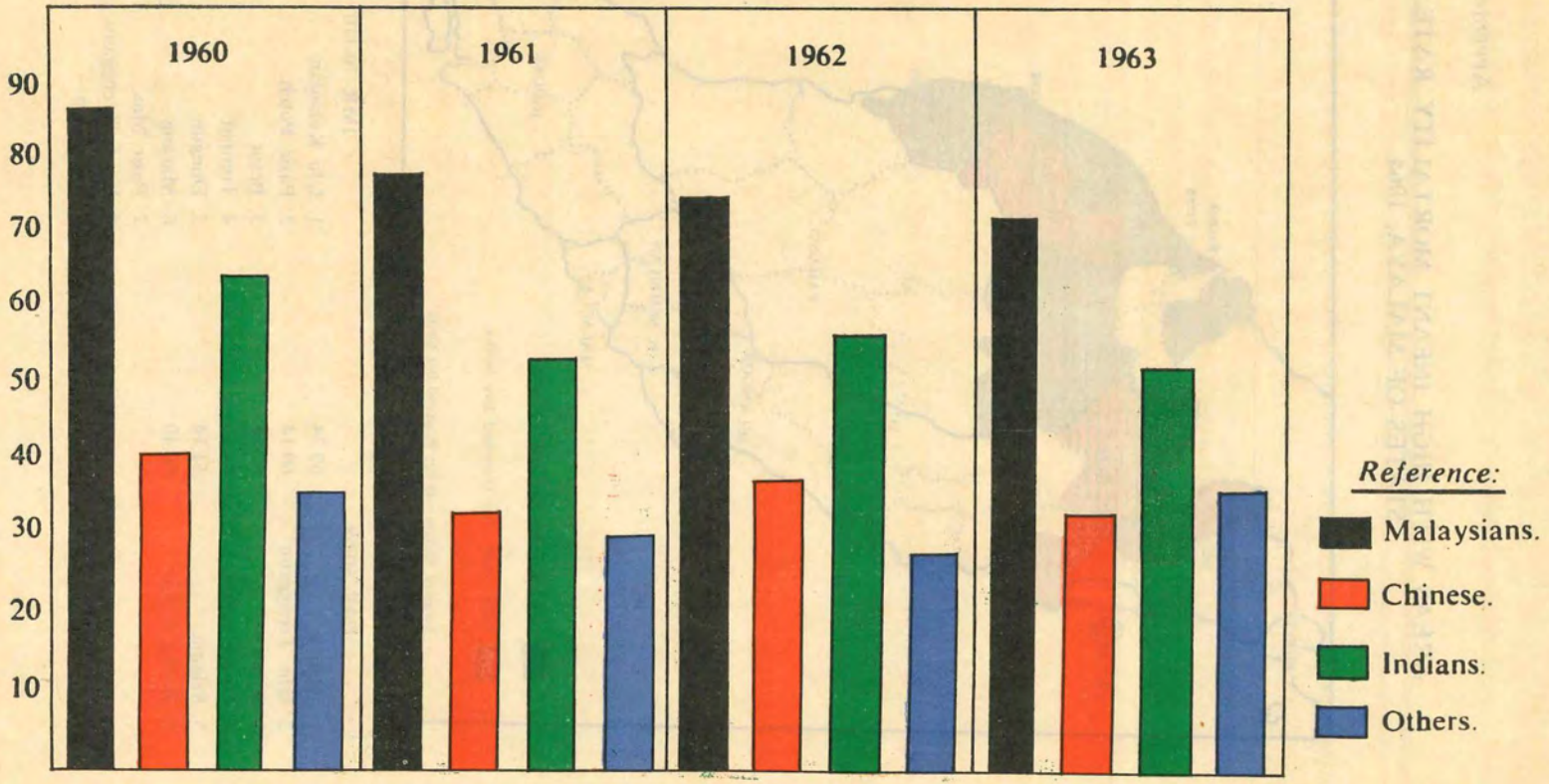
BIRTH RATES AND DEATH RATES, 1956-1964



INFANT MORTALITY AND NEONATAL MORTALITY RATES, 1956-1964

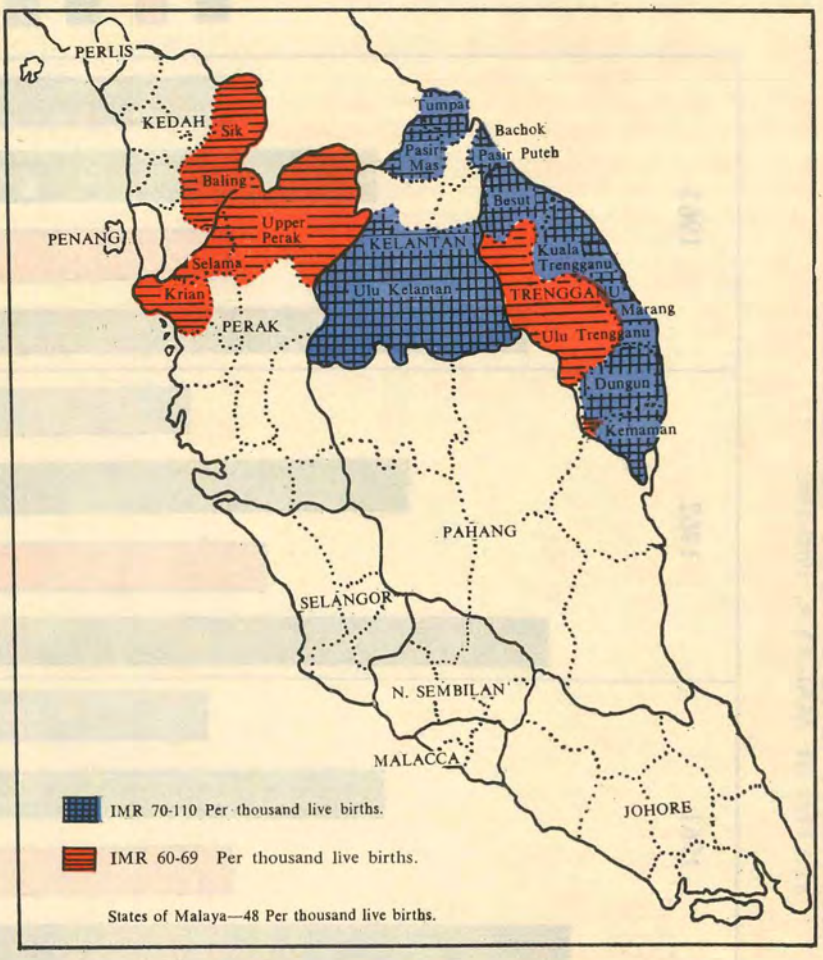


INFANT MORTALITY RATE BY RACE DISTRIBUTION,
STATES OF MALAYA, 1960-1963



APPENDIX "R"

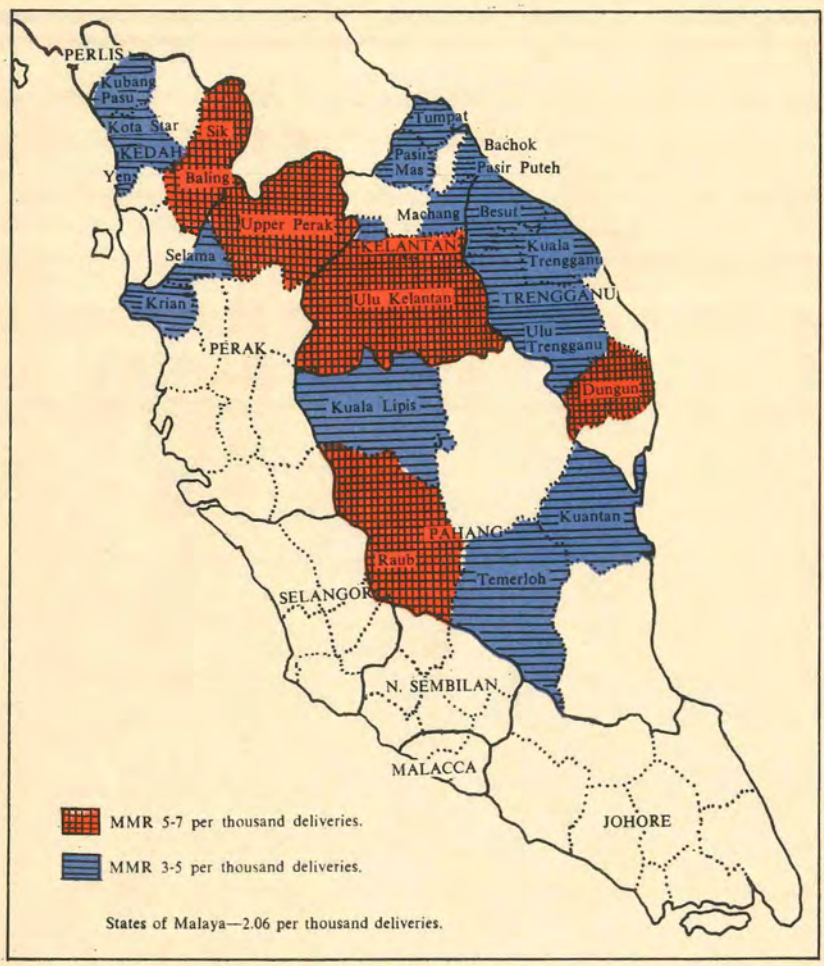
AREAS WITH HIGH INFANT MORTALITY RATE, STATES OF MALAYA, 1964



IMR 60-69		IMR 70-110	
1. Bachok	69.34	1. Ulu Kelantan ...	109.96
2. Ulu Trengganu ...	69.14	2. Pasir Puteh ...	94.59
3. Krian	67.44	3. Besut	86.46
4. Upper Perak ...	64.20	4. Tumpat	85.01
5. Selama	61.14	5. Dungun	79.04
6. Baling & Sik ...	60.40	6. Marang	77.46
		7. Pasir Mas ...	72.63
		8. Kuala Trengganu...	70.58
		9. Kemaman ...	70.07

APPENDIX "S"

AREAS WITH HIGH MATERNAL MORTALITY RATE, STATES OF MALAYA, 1964



MMR 3-5

1.	Kuala Trengganu...	4.87
2.	Pasir Mas ...	4.33
3.	Bachok	4.05
4.	Besut	3.94
5.	Temerloh ...	3.87
6.	Kuantan	3.85
7.	Kuala Lipis ...	3.80
8.	Yen	3.57
9.	Pasir Puteh ...	3.56
10.	Machang	3.36
11.	Kubang Pasu ...	3.24
12.	Selama	3.22
13.	Krian	3.22
14.	Tumpat	3.20
15.	Ulu Trengganu ...	3.10
16.	Kota Star ...	3.02

MMR 5-7

1.	Upper Perak ...	6.82
2.	Dungun	6.38
3.	Raub	6.29
4.	Baling & Sik ...	6.08
5.	Ulu Kelantan ...	5.99

14754—1,500—30-9-67.