

CHILD HEALTH IN MALAYSIA: 1870-1985

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THE EARLY DEVELOPMENT OF CHILD HEALTH SERVICES (1870-1940)

During the 19th century, hospitals of the East India Company were established in the Straits Settlements but they catered largely to the garrisons and officials. Thus child health as a recognised public health activity was, to all intents and purposes, non-existent during this period.

During the early 20th century, Malaya under the British rule was divided into three separate regions namely the Straits Settlements, the Federated Malay States and the Non-Federated Malay States.

The Federated Malay States

In the early part of the 20th century, the infant mortality in the Malay states was painfully high. This was reported to be mainly due to "improper feeding, neglect of sick children and ignorance on the part of the mothers while malaria, dysentery, diarrhoea, pneumonia and pulmonary tuberculosis were the main causes of the great number of deaths".¹

The total number of births registered in 1920 in the Federated Malay States was 36,566, while deaths of children under a year of age was 6,920 giving an infant mortality rate of 194 per 1,000 live births. Convulsions, the cause assigned to 3,460 deaths for that year, was actually not a disease but a symptom. Most of the deaths were probably caused by gastro-intestinal troubles reportedly the result of bad feeding or were due to malaria, broncho-pneumonia, tetanus and other infectious diseases.

The death rate for 1922 was the lowest compared to those since 1910. This might be attributed to the establishment of infant welfare centres at Taiping, Ipoh and Kuala Lumpur. In Kuala Pilah, the Women's Hospital was also used as an infant welfare centre as reflected by the number of children brought to the outpatient department; 2,375 under three years of age and 1,952 between three and ten years of age. An Infantile Advisory Board was also set up for the purpose of advising as to the methods which should be employed to promote the welfare of infants and to reduce the infant mortality rate in the Federated Malay States.

The Midwives Enactment, 1922, was gazetted in February 1923.² The objectives of this enactment were to secure better training of midwives and regulation of their practices. It also aimed to eliminate prejudices from the Malay midwives (*bidans*) against western midwifery and

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fear of hospital from the less educated Malays. The high mortality rate due to tetanus among infants in the first year of life further gives an indication of the necessity for the education and supervision of *bidans* and certificated midwives.

In 1922, schools inspection was added to the duties of a Health Officer in the Federated Malay States. An effective way of improving health care is through the teaching of personal hygiene to school children. There was also a series of examinations performed on the eyesight of school children of different nationalities in 1923. The vision of Malay children in the vernacular school was found to be excellent, whereas in the English speaking schools, errors of refraction were relatively common.³

The principal diseases causing mortality in the 1920s were malaria, dysentery (Fig. 1) and diarrhoea, pulmonary tuberculosis and beri-beri. In 1924, the number of deaths attributed to fevers (most of them probably malarial) was 14,283 or 42.53% of the total. Dysentery and diarrhoea accounted for 5.84%, pulmonary tuberculosis 5.70%, pneumonia 5.02% and convulsions 10.77%. In view of the great number of deaths caused by malaria, the Malaria Advisory Board, which was a central committee, was formed for the purpose of collecting information to enable them to advise generally as to the methods which should be adopted for the control of malaria.

Overall, there was a steady reduction in the loss of lives in the very young as shown in Table I. Deaths among infants under one year of age in 1930 formed one quarter of the total deaths at all ages, whilst deaths of infants and young children up to five years of age accounted for almost 40% of the total.

In the 1930s, the principal causes of deaths for children under ten were malaria, diphtheria, tetanus, tuberculosis of the respiratory system, beri-beri and convulsions. 99.75% of those who died of convulsions were children under 10 years. This was followed by diphtheria, in which 93.5% of deaths were children under 10 years, tetanus

TABLE I
INFANT MORTALITY RATE IN THE
FEDERATED MALAY STATES, 1921-30

Year	Infant Mortality Rate
1921	183
1922	177
1923	180
1924	181
1925	177
1927	203
1928	182
1929	178
1930	163

N.B. The records for the state of Pahang for 1926 were lost in the floods and the rate for the year in question is therefore omitted.
Source: Federated Malay States, 1931.

78.5%, malaria 18.6%, beri-beri 8.2% and tuberculosis of respiratory system 3.2%.

The Non-Federated Malay States

There was no combined official reports on child health for the Non-Federated Malay States. Data are separately available for each state. During this period, in Johore, infant welfare centres were set up to improve the care of infants and young children. A lot of time was spent training midwives in antenatal care, general health principles and infant feeding. Convulsions was also the chief cause of deaths for infants under one year of age. Table II shows the principal causes of deaths of children and infants in Johore in the year 1935.

TABLE II
PRINCIPAL CAUSES OF DEATHS
OF CHILDREN & INFANTS, JOHORE 1935

Causes of death	Total number of deaths
Convulsions	1,474
Fever unspecified	1,027
Premature birth	792
Marasmus	416
Pneumonia	714
Diarrhoea and enteritis	160
Malaria	40
Bronchitis	31
Tetanus neonatorum	91

Source: Johore, 1936.

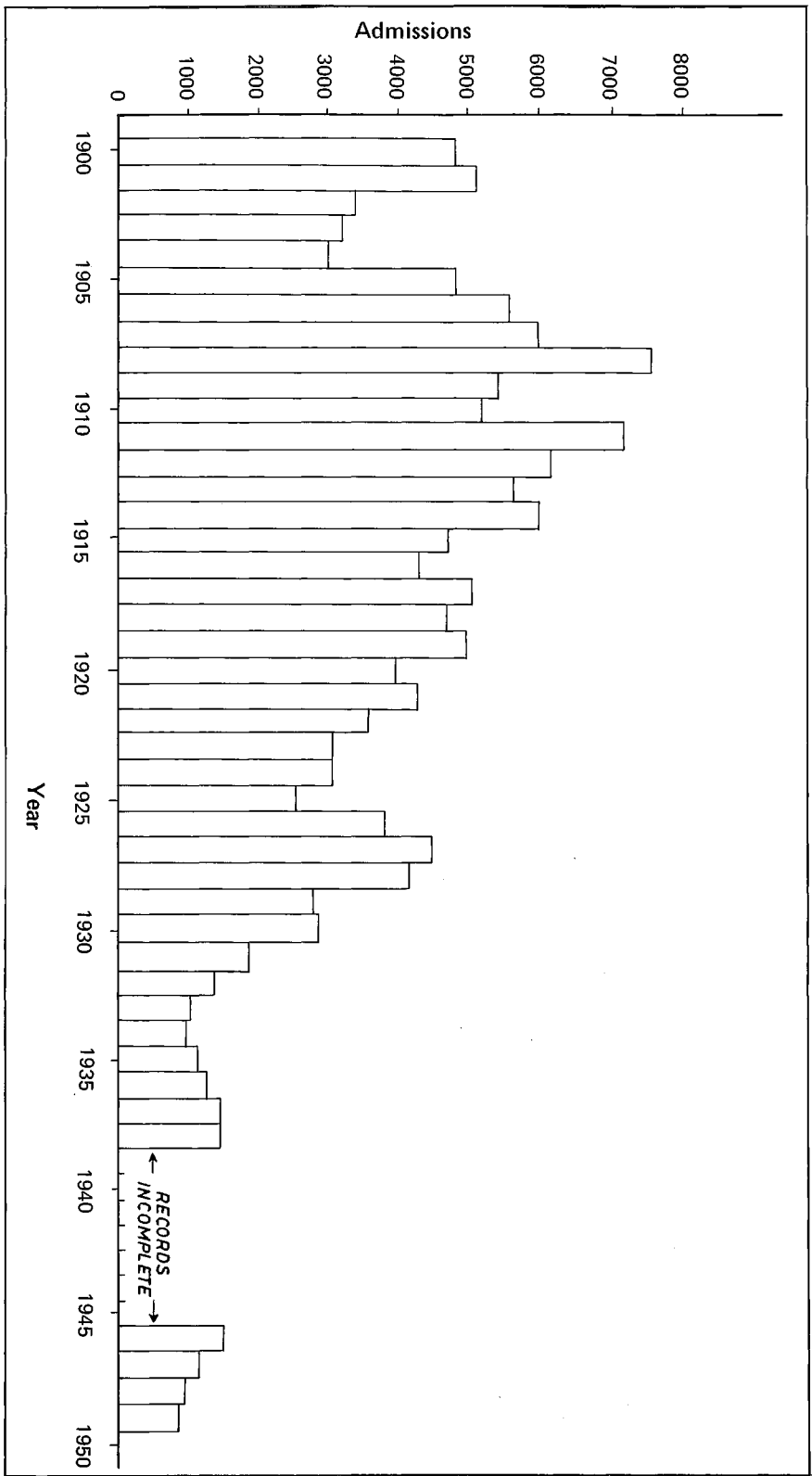


Fig. 1 Dysentery in the Federated Malay States, 1900 — 1949.

Vaccination was made compulsory in Johore for all infants and other persons at other ages under certain circumstances by virtue of the Vaccination Enactment, 1930. There were five public vaccinators who travelled around the villages and rural areas, working to a pre-arranged itinerary. In addition, vaccinations were performed at hospitals, health offices, clinics and by travelling dispensaries.

Inspection of schools were made. Quite a number of school children were found to be suffering from dental caries. Government dental clinics were subsequently set up for school children in government hospitals in Johore Bahru, Muar, Batu Pahat and Segamat. Majority of schools in Johore Bahru also supplied tooth brushes to the pupils at wholesale prices. Instructions and demonstrations on the proper method of brushing the teeth were carried out by the government dentist at the clinic during attendance for treatment.

In Kedah, deaths and illnesses in early life stood out most prominently. 45% of the deaths in the state apparently took place in the 0–20 age group, while over 25% occurred during the first 12 months of life. The infant mortality rate in Kedah in the 1930's is shown in Table III.

In Table III, the data indicates that the infant mortality rate remained high over the six years from 1932 to 1937. Reference to the mortality figures at different age periods showed that nearly 50% of infant deaths occurred during the first month of life. One of the problems faced in Kedah was the frequent changes of the female

TABLE III
INFANT MORTALITY RATE IN KEDAH

Year	Infant mortality rate (per 1000 live births)
1932	120
1933	141
1934	148
1935	148
1936	145
1937	138

Medical Officers-in-charge of the maternity and welfare centre. Due to this reason, no work could be carried out in a systematic manner. Thus, during this period, there was no definite scheme of preventive health work among women and children in Kedah.

The principal causes of infant deaths in Kedah for the years 1935 and 1936 reported in order of frequency, is shown in Table IV. Most of the children suffered from intestinal parasites and at least 80% of all outpatients suffered from worms. The majority of the diseases for which treatment were sought could have been prevented and a campaign of education in personal hygiene was urgently undertaken in Kedah. Mothers were advised to reduce artificial feeding and this led to a reduction in the incidence of gastro-enteritis with a corresponding drop in the death rate of children under four weeks of age.

Child Health During the Period 1941 – 1956

During the Japanese Occupation, statistics were hard to obtain. However, it would not be difficult to imagine the child health standards considering the abominable situation of the adults during the time. The records available were sufficient to show a steady rise in the number of registered deaths and in 1944, this was 50% above the pre-war level. Although no large scale epidemics of the more serious infectious diseases had been reported during this period, there was no doubt that malaria did become very much more prevalent. Under-nourishment was almost nationwide, although

TABLE IV
PRINCIPAL CAUSES OF INFANT DEATHS
IN KEDAH, 1935 AND 1936

Diseases	Approximate % of total infant deaths	
	1935	1936
Premature birth	48	31
Convulsions	30	32
Fever unspecified	10	20
Pneumonia	2	5
Diagnosed malaria	2	2
Bowel disease	2	2

Source: Kedah, 1937.

frank nutritional diseases were less prevalent than might have been expected.⁴

The total number of births registered for the year 1946 was 183,960 while that of infant deaths was 16,877 giving a crude death rate of 92 per 1,000. From 1947 onwards, there was a decline in the infant mortality rate. Such was in part due to improved nutrition of mothers leading to a reduction of infant beri-beri in breastfed babies. This was quite obvious among the Malays in Malacca who had a high rate of death from infant beri-beri. Their infant mortality rate fell from 257 in 1940 to 113 in 1949. Other noteworthy factors causing the decline included the increase in breast feeding (because of shortage of condensed milk) and the reduction in the incidence of malaria.

Major causes of deaths during this period were attributed to infection, lack of care during and after child birth and poor nutrition. The main concern of the Federation was with the prevention of major infectious diseases such as malaria, the reduction of pulmonary tuberculosis, the eradication of yaws as well as the treatment of leprosy and mental disorders.

Diphtheria occurred sporadically and annual figures suggest that it had been on the increase since 1947. The high mortality emphasizes the importance of immunization against diphtheria. Immunization campaigns were carried out but the level of protection achieved was generally low. Only 38% of the total number of infants were immunized in 1955. There were 141,188 immunizations recorded in the Federation of Malaya in 1956.

The year 1951 will always be a landmark in the history of tuberculosis control in the Federation of Malaya, since it saw the commencement of the BCG campaign, which was well received by the public and was carried out in schools, infant welfare centres and maternity wards. This campaign increased in momentum during the latter part of the year. Out of 249,181 persons who were tested with tuberculin, 133,355 were vaccinated with BCG.⁵

Poliomyelitis represented yet another disease of low endemicity affecting chiefly members of the younger age group. There were 199 cases (nationwide) with 21 deaths reported in 1951. Morbidity was highest in Selangor with 49 cases and nine deaths. However, the number of cases and deaths for Malaya as a whole dropped to 37 and four in 1955.

Yaws in Malaya was a disease of the rural populace particularly among the Malay children. The disease had become more widespread after the War. In 1940, it was a disease which was disappearing from all areas but the most remote. But after World War II, it was distressingly obvious among Malay children in every rural area. In some of the kampongs in the East Coast, almost every child was affected.

In 1949, the number of cases of yaws throughout the Federation was 61,377 of which almost 50% were children under 10 years of age. A cause of increase was the complete absence of treatment during the war period. After the war, continuous treatment by arsenic injections lowered the number of yaws patients. After a survey conducted by WHO, anti-yaws campaigns were launched in Kelantan and Trengganu in April 1954. Within a few years, yaws was being effectively eliminated from most areas by injections of suitable doses of penicillin to every sufferer and carrier.

In view of malnutrition among children, the feeding of school children were carried out on an extensive scale by the education authorities. In 1946, 120,000 children benefited from this feeding scheme. Full cream and humanised milk were also supplied to young children at the infant welfare centres. A comparison of recorded incidences of beri-beri over a number of years helps to provide some insight into the state of nutrition of the people in Malaya (Fig. 2). The occurrence of beri-beri in the Malay Peninsula had an ultimate relationship with the consumption of a diet of which polished rice forms the staple.⁵

In the area of dental health of school children, dental nurses were trained in 1949 to administer

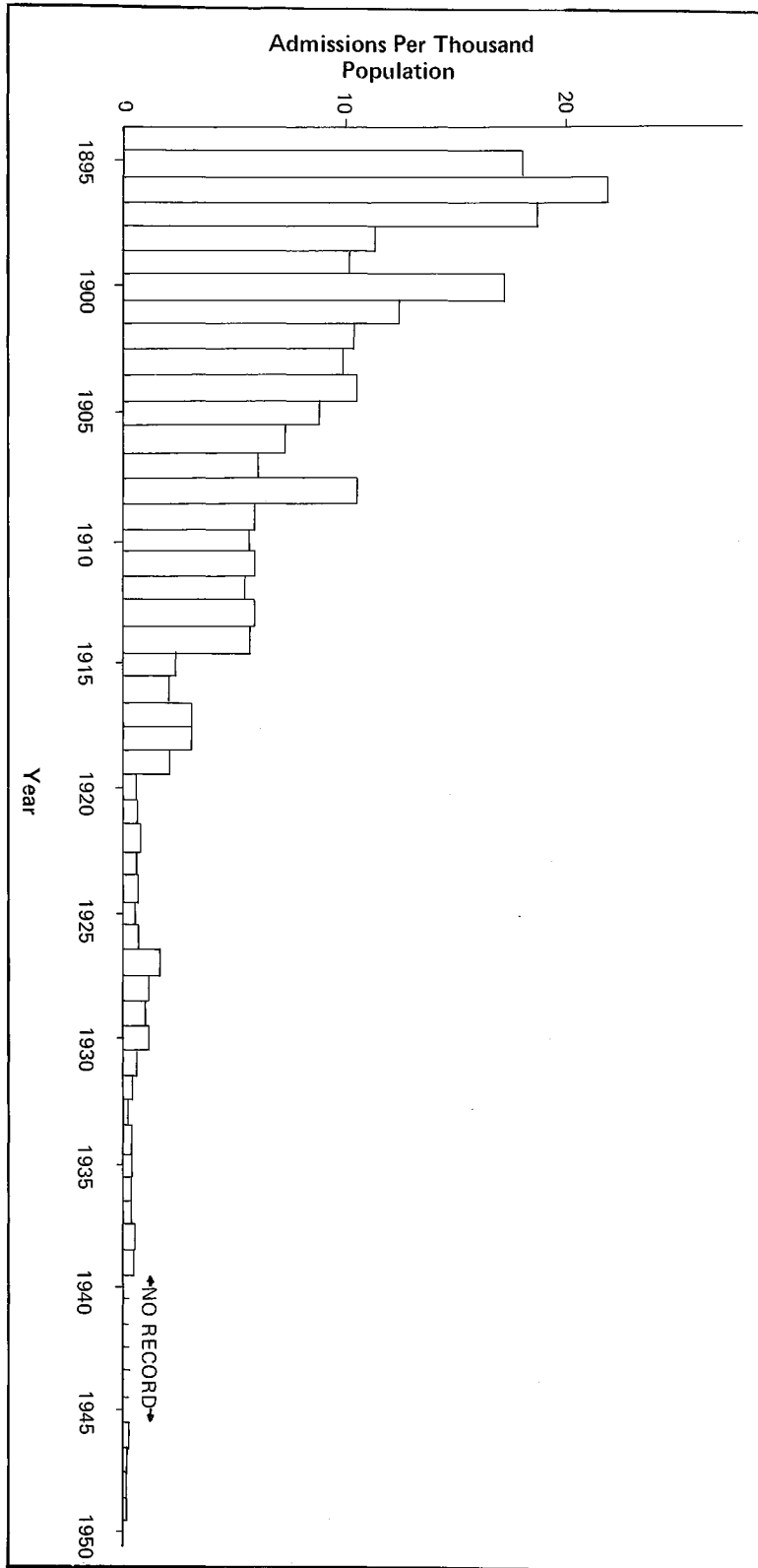


Fig. 2 Beri-beri in the Federated Malay States, 1895 - 1949.

appropriate treatment due to a shortage of qualified dental surgeons. These dental nurses specialised in the field of preventive dentistry and their focus of training was on the detection of early cavities and infected fissures in the teeth of children. This was aimed at curbing dental decay which was quite common among school children.

The two most prevalent diseases among the rural children during this period were diarrhoea and dysentery. However, there was a steady improvement in the overall health condition of children throughout the Federation. Severe cases of malnutrition became less common and the general standard of nutrition of the average child showed improvement.

CHILD HEALTH IN THE POST INDEPENDENCE PERIOD: DEVELOPING A BASIC INFRASTRUCTURE

With increasing self-government in the 1950's and independence in 1957, the prime task before the government was the need to focus its development efforts on the long neglected rural areas where the people were trapped in a cycle of poverty and ill-health. In the social and economic plans of the government, priority was given to the channelling and coordination of all resources towards efforts to raise the standard of living of the rural people in terms of housing, roads, bridges, land for development, water supplies, processing and marketing of rural produce, schools, playing fields, electricity, telecommunications and health services.⁷ Thus the development of health services in rural areas came to be one component of total development which included such vast projects as the Muda Irrigation Scheme covering 260,000 acres of rice land and land development schemes covering 866,058 acres of land providing improved prospects for about 68,088 families.⁸

The basic rural health plan involved the setting up of one rural health unit for every 50,000 of the rural population, the unit being made up of

one main health centre, four health sub-centres and 20 midwife stations, each midwife covering a population of 2,000 (Fig. 3). By the end of 1970, a total of 44 main health centres, 180 health sub-centres and 943 midwife stations had been established in the rural areas (Table V), together with 209 mobile dispensaries operating in areas not yet covered by this scheme.

Further improvement was made in the provision of preventive and curative services in rural areas with the conversion of the three-tier to the two-tier system of health care delivery which began in 1974. By this change, the health sub-centres were upgraded to health centres to serve 15,000 – 20,000 rural population while midwife clinics were upgraded to *klinik desa* with two *jururawat desa* (community nurses) to serve 4,000 population.⁸ Maternal and child health formed the chief functional component of the services offered by each rural health unit, the other functions being the control of communicable disease, environmental sanitation, medical care, dental care, laboratory services, health education of the public, and records and reporting of statistics. The maternal and child health component included antenatal care of

TABLE V
PROGRESS IN THE BUILDING PROGRAMME
OF THE RURAL HEALTH SERVICE

Development Plan	Type of clinic		
	Main centre	Sub-centre	Midwife station
First Five-Year Plan (1956–1960)	8	8	26
Second Five-Year Plan (1961–1965)	31	114	617
Third Five-Year Plan (1966–1970)	5	58	300
Fourth Five-Year Plan (1971–1975)	29	66	339*
Fifth Five-Year Plan (1976–1980)	4	6	183
Total (1956–1980)	77	252	1,465**

* 51 Midwives centres converted to Klinik Desa.

** Includes 551 Klinik Desa.

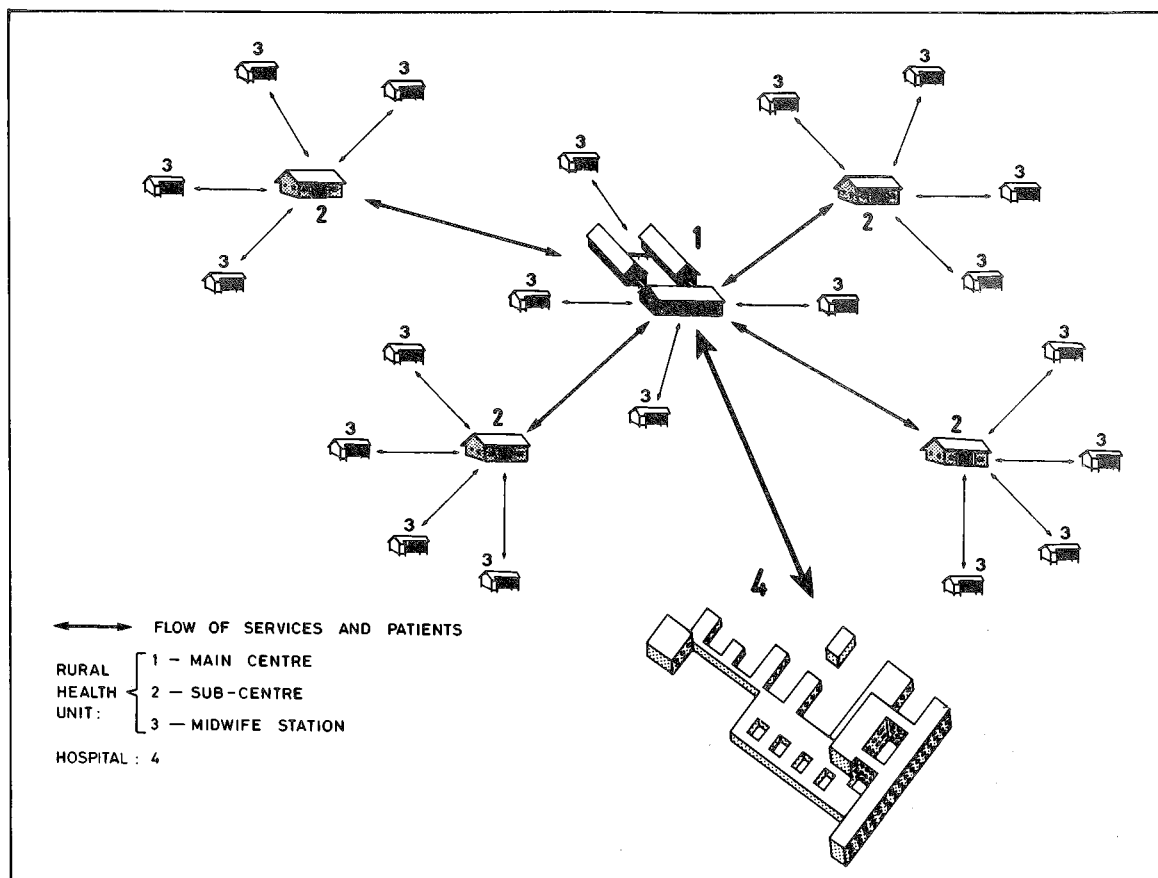


Fig. 3 A rural health unit designed for a population of 50,000 and composed of a main health centre, four health sub-centres, and 20 midwife stations.

home and at clinics, home delivery of normal cases, after-care of mother and child, home visiting, family planning, child health clinics for infants and toddlers, school health services, and the nutrition programme. The three categories of staff who were responsible for direct patient-care were the staff health nurses (Division I Nurse-midwife), the assistant health nurse (Division II Nurse-midwife), and the trained midwife (Division II Midwife), the trained midwife being responsible for only the first three of the seven components listed.

From 1960 onwards momentum began to pick up in the development of maternal and child health services and by the end of 1980 consi-

derable progress had been made. In 1970, in some states, particularly the more rural states with higher proportions of Malays, the percentage of births attended by trained midwives, nurses and doctors was as low as 36%, while in states that were more urbanised and with lower proportions of Malays, the percentage was as high as 88%. This has been in part due to the fact that in many rural Malay communities there has been competition between the modern trained midwife and the *bidan kampung* (traditional Malay birth attendant). However, in 1983, there was a vast improvement in these rural states (Fig. 4) where the percentage of deliveries by trained health personnel is quite high.

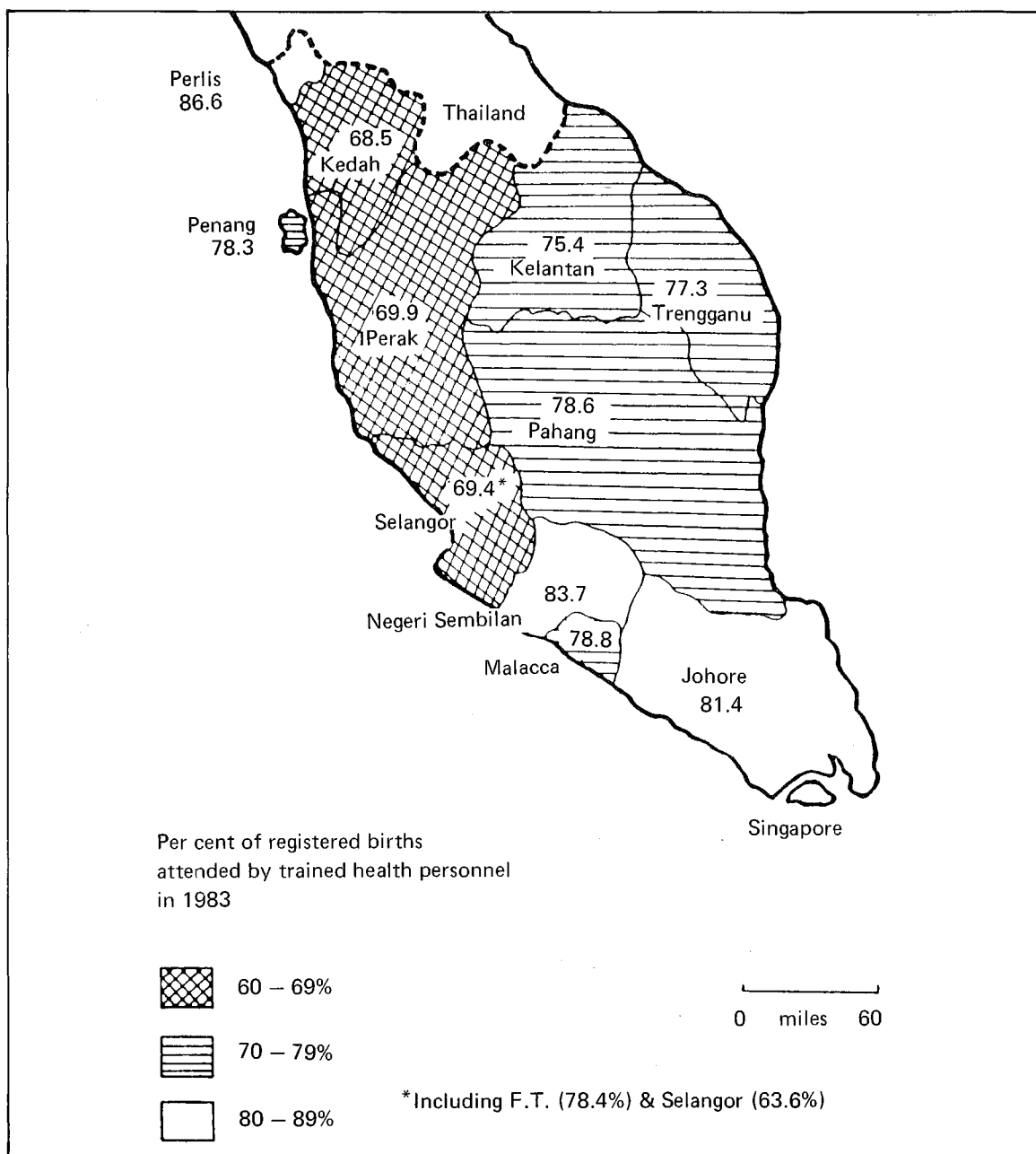


Fig. 4 Per cent of registered births attended by trained health personnel according to geographical location in Peninsular Malaysia 1983.

THE PRESENT STATE OF CHILD HEALTH

The child population in Malaysia increased by 11% from 4.7 million in 1970 to 5.2 million

in 1980. However, the proportion of children declined from 45% in 1970 to 39% in 1980 following the drop in fertility as a result of the increasing awareness by the population of the importance of family planning. Infants and

children below the age of four constituted about 34% of the child population in 1980 with the remaining 66% being made up of children aged 5–14 years.

In view of the importance of comprehensive health care in child development, maternal and child health centres have been widely extended by the government throughout the country. By the end of 1982, 1,595 midwife clinics and rural clinics, 341 health centres and 29 mobile health teams were established in the rural areas to provide better health care to mothers and children. Consequently, attendance at the maternal and child health centres increased from 2.6 million in 1970 to 4.1 million in 1982. The health status of the mothers and their children improved as measured by the steady fall in the country's neo-natal mortality rate, infant mortality rate and maternal rate as shown in Table IV.

Infant Mortality

Fig. 5 shows the infant mortality rate from 1920 till 1982. The decline in the infant mortality rate indicates an improvement in the general health of children. The decrease in the infant mortality rate can be attributed to compulsory immunization against certain diseases such as diphtheria and tuberculosis, improved standards of living, increased availability of better medical facilities and the better state of nutrition.

Tuberculosis

Before independence in 1957, tuberculosis was a major public health problem in the country. More than one-quarter of the hospital beds were occupied by tuberculosis patients and almost one-tenth of the total health budget was spent on tuberculosis. The prevalence of infection among the child population was alarmingly high. Random tuberculin surveys revealed that about 25% were infected by the age of five years, as many as 50% by the age of 10, and almost 75% by the age of 15.

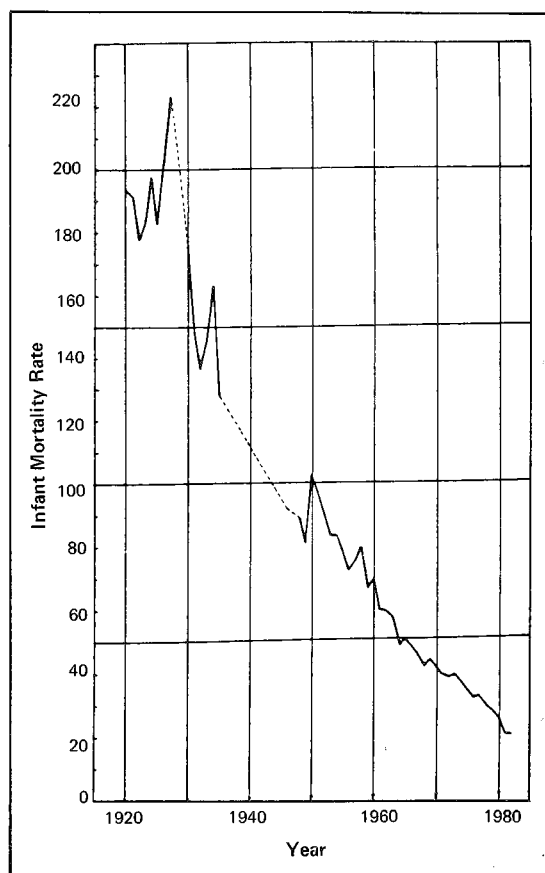
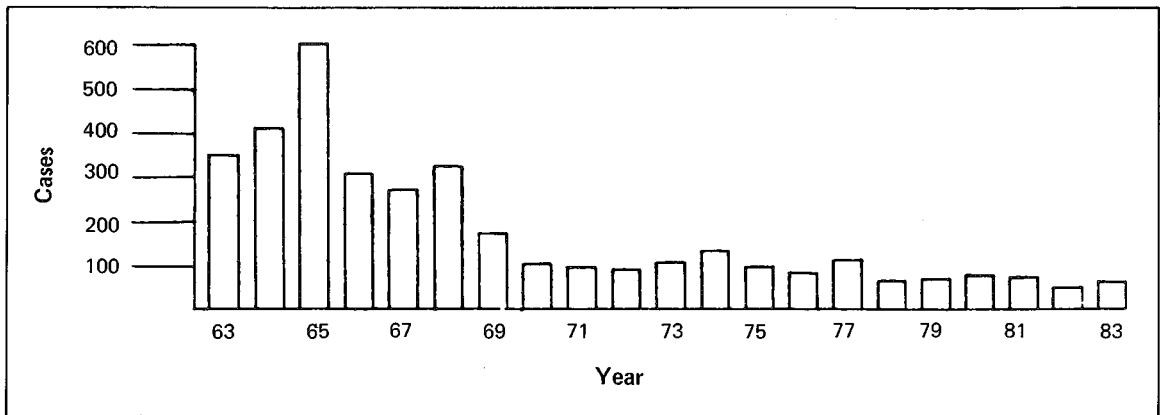


Fig. 5 Infant mortality rate 1920 – 1982.

Following the achievement of Independence in 1957, the control of tuberculosis was given priority. The National Tuberculosis Centre and the National Tuberculosis Campaign were inaugurated in 1961. To protect susceptibles, persons up to 20 years of age were given BCG vaccination, with emphasis on newborns, infants, and primary school entrants. By 1970, 65.7% of the population 0–19 years had been covered. In 1976/77, a coverage of 82.6% was recorded and this is higher than the target of 75%. Up to December 1983, a total of over 8 million had been vaccinated. Revaccination of primary school leavers and secondary school children started in 1975 and by December 1983, a total of 1.7



Source: Prathap and Lim (1984).

Fig. 6 Annually registered cases of childhood tuberculosis (0–12 years) bacteriologically positive and negative, Peninsular Malaysia 1963–1983.

million of this population group had been revaccinated.⁹

There has been progressive decline in the number of tuberculosis, bacteriologically confirmed and unconfirmed cases (Fig. 6). Analysis of the annual cohorts of bacteriologically positive and negative cases in the 0–19 year age group registered since 1973 indicated that the incidence had been two to three times lower among the vaccinated population compared to the unvaccinated population.

Diphtheria

There was a general increase in the notification of diphtheria in 1958. However, there was no epidemic outbreak and the cases reported were sporadic in nature. Immunization against diphtheria was offered in all government hospitals including maternal and child health clinics. Total number of children immunized in the Federation of Malaya in 1958 was 126,061. Despite the fact that diphtheria could by this time be prevented and eradicated, it continued to be reported in unduly large numbers. The reason for this can be attributed to the public apathy inspite of improved health education. Only a small percentage of the child population was being

immunized effectively. Most of the children, after having received the first injection were not brought back for the second or third injection, thus making the immunization less effective.

In 1957, 214 children between 1–4 years of age died of this disease. However, a great deal of improvement has occurred since those early days and by 1981, no deaths were being recorded from diphtheria (Fig. 7), which today is no longer a disease of any major importance.

CONCLUSION

Generally, the post independence period has witnessed a marked improvement in the level of care and protection for children in Malaysia. The government's programmes towards better nutrition, health care, education and welfare for children, are aimed at enhancing their well-being and ensuring their proper physical and mental development in order to enable them to play their rightful role in the socio-economic development of the country. The task of improving the quality of life of the children, however, cannot be shouldered by the government alone. The public through voluntary organizations, professional bodies, and other social institutions should also assist in providing

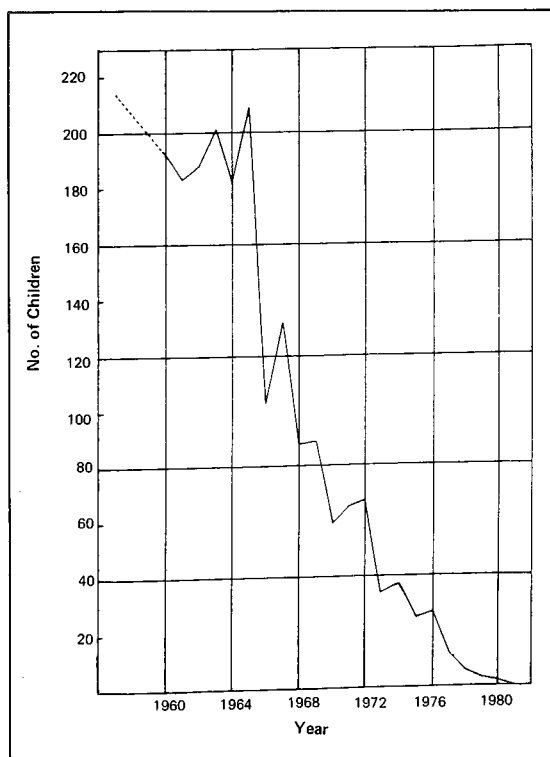


Fig. 7 Medically Certified & Inspected Deaths of Children aged 1-14 years from Diphtheria, Malaysia, 1957 - 1981.

amenities and services. Together with government efforts, an active and committed involvement of the public would ensure the realization of the full potential of Malaysian children in the future.

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