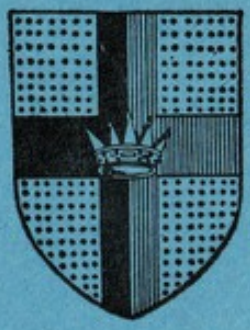
Annual report of the Sarawak Government Medical Department.



SARAWAK

MEDICAL AND HEALTH DEPARTMENT

ANNUAL REPORT

1965

PRICE: $1.50

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MEDICAL AND HEALTH DEPARTMENT
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PART I

I. BACKGROUND INFORMATION

Sarawak occupies an area of about 47,500 square miles on the northwest coast of the island of Borneo. It lies between latitudes 0° 50′ and 5° North, and longitudes 109° 36′ and 115° 40′ East, and the territory occupies slightly less than a sixth of the island, which is the third largest in the world.

2. The climate is tropical with a heavy rainfall, a uniform temperature, and a high humidity. From early October until the middle of February the north-east monsoon brings heavy rainfall, especially in the coastal belt. The rainfall averages between 150 and 180 inches in most areas, and the mean annual rainfall at Kuching is 158 inches. There is, however, normally between three to seven hours of sunshine, depending on the season. On the whole, the climate is a pleasant and equable one, in spite of the tropical situation of the country. It is never cold, and although it can become moderately hot in the day-time the heat is only oppressive during periods of high humidity. The nights are generally cool. The temperature is uniform, varying between the mean maximum of 87.9°F and the mean minimum temperature of 72.5°F in 1959.

3. The total population at the census held in June, 1960 was 744,529. This showed an increase of 198,144 over the figure obtained at the previous census in 1947, i.e. an average annual increase of 15,242, during the thirteen years. Of the total population, 375,846 were males, and 368,683 females. The Sea Dayaks, with a population, 237,741, still form the largest single racial group, followed by the Chinese with 229,154, the Malays with 129,300, the Land Dayaks with 57,619 and the Melanaus with 44,661. Other indigenous races, totalled 38,931 and there were 1,631 Europeans. Since 1947, there has been a percentage increase of only 24.9 for the Sea Dayaks, 36.6 for the Land Dayaks, 32.7 for the Malays and 25.6 for the Melanaus.

4. Malays, Kedayans, and many Melanaus profess the Muslim faith. There are a number of Christian Missions at work in Sarawak—Anglican, Roman Catholic, Methodist, Evangelical and Seventh Day Adventist. There are also small communities of Hindus, Buddhists, and Bahais. The 1960 census revealed that there were 174,123 persons professing the Muslim faith, 117,755 professing to be Christians, and 452,651 of the other religious beliefs.

5. Sarawak is divided into five Divisions for administrative purposes and each Division, which is headed by a Resident, is divided into Districts, each in the charge of a District Officer. The 1960 census showed that the population of the five Divisions was as follows:—

First Division	247,954
Second Division	109,422
Third Division	261,487
Fourth Division	96,666
Fifth Division	29,000

The Annual Report on the Registration of Births and Deaths for the year 1964 showed that, at the end of 1964, the estimated figures for the five Divisions, corrected for births and deaths, but excluding immigration and emigration, were as follows:—

	Males	*Females*	*Total*
First Division	145,450	141,382	286,832
Second Division	59,333	59,448	118,781
Third Division	144,065	143,869	287,934
Fourth Division	55,068	50,673	105,741
Fifth Division	16,468	16,017	32,485
	420,384	411,389	831,773

Including the balance of immigrants over emigrants, the total population, as estimated on 31st December, 1964 was 831,773.

The control of local affairs in Sarawak is largely based on twenty-four fully elected District Councils which now cover the whole of the country. They play an important part in the organisation of primary education and certain health services as well as the duties normally associated with local authorities.

The District Councils elect representatives to five Divisional Advisory Councils which act as electoral colleges for the State Legislature or Council Negri. The latter consists of thirty-six elected, three *ex officio* and three nominated members plus a Speaker. There is also an Executive Council known as Supreme Council consisting of the Chief Minister, five other ministers and three *ex officio* members. It is presided over by the Chief Minister.

Council Negri in turn elects twenty-four members to the Federal Legislature in Kuala Lumpur.

On September 16th, 1963, Her Britannic Majesty relinquished her sovereignty over Sarawak and on that day Sarawak achieved independence and joined with North Borneo (now Sabah), Singapore, and the Federation of Malaya to form the new nation, Malaysia. The political implications of this move may be learnt from other sources; it is only necessary to explain here that the Sarawak Medical Department, whilst retaining its entity, has become a unit in the Federal Medical Department of Malaysia.

6. Of the total estimated area of 47,500 square miles about three-quarters is still covered by primary rain forest, and the remainder is mainly used for settled and shifting cultivation (six per cent and eighteen per cent respectively). Although Sarawak is basically an agricultural country, the soil is generally of low fertility, some parts being extremely acid in reaction, and over much of the accessible part of the country the inherent poverty of the soil has been accentuated by wasteful practices associated with the cultivation of dry padi. The shifting cultivation of hill padi, as normally practised, results in reduced fertility unless the ground is allowed to lie fallow for approximately fifteen years after each crop.

7. The main cash crops are rubber, pepper, sago and coconuts, and a considerable proportion of the general revenue of Sarawak is derived from the

export duty levied on rubber and pepper. There are also large and important forest reserves, and timber production ranks after agriculture as the most important economic activity carried on in Sarawak. The principal minerals known to occur in Sarawak are bauxite, now the main mineral export, oil which has been produced from the Miri oilfields for fifty-four years, but which is now decreasing in quantity, gold in small quantities, and coal. The last named is known to occur in payable quantities, but so far, lack of communications has discouraged its exploitation. The new road from Kuching to Simanggang passes within reasonable distance of one known coalfield, and this may encourage its development.

8. The staple diet of the population is rice, but the actual production of rice in Sarawak is inadequate for its needs, and approximately half of the country's requirements is imported, mainly from Siam. Other food crops such as tapioca, maize, yams, and sweet potatoes are used to supplement rice in the rural areas. A noticeable feature of the agricultural economy is the small number of livestock, and the almost entire absence of mixed farming. The few small herds of cattle which exist are mainly confined to the sandy coastal area, although buffaloes are moderately plentiful in the Fifth Division. The only classes of livestock kept in significant numbers are pigs and poultry.

9. Sarawak is a relatively healthy country by tropical standards. Bilharziasis, yellow fever, louse-borne typhus, plague and relapsing fever are not encountered nor has there been a case of smallpox for many years. Until 1961 cholera had not been reported for a great many years, but in that year, and recurrently in 1964 and 1965 outbreaks of cholera "El-Tor" have occurred. Due to the poor standard of environmental sanitation, however, dysentery and the enteric diseases continued to occur in distressingly large numbers. Leprosy is prevalent also, and endemic goitre occurs in the interior.

10. The policy of the Government in the field of public health, as enunciated in 1960, is as follows:—

"Believing that good health is one of the most important assets of any community, it is the policy of Government to promote the health of all the people of Sarawak in so far as its financial resources will permit. This will be achieved by:

(a) protecting the community against the common communicable diseases, by free protective vaccination and inoculation, and by such other methods as may be available from time to time;

(b) educating the public in matters concerning the preservation of health and the avoidance of disease;

(c) encouraging the establishment of maternal and child health services as a means of maintaining the health of mothers and children;

(d) maintaining hospital and dispensary services for the effective treatment of the sick and injured;

(e) advising district councils in their efforts to improve the sanitary and living conditions of the people;

(f) providing a dental service complementary to the private practitioner service, with particular emphasis on the care of children."

11. More emphasis is being placed, each year, on the preventive aspects of the work of the department. Mass health campaigns, such as the Malaria Eradication Project, the Tuberculosis Control Scheme, the Rural Health Improvement Scheme, and the campaign against Yaws, which was successfully completed in 1956, are already having a markedly beneficial effect on the general health of the population.

12. In the field of curative medicine, hospital and dispensary facilities throughout the country have been steadily improved over the past few years. There are now five main general hospitals situated at the Divisional Headquarters at Kuching, Simanggang, Sibu, Miri and Limbang. There is also a forty-bed district hospital at Sarikei, Third Division. During the year, two twenty-five bed local hospitals were completed at Lundu in the First Division and at Marudi in the Fourth Division. In addition to these Government institutions there is a fifty-six bed general hospital at Kapit, run by the Methodist Mission, and there are small mission hospitals, dealing mainly with maternity cases, at Kanowit, Sarikei and Mukah in the Third Division, at Long San in the Fourth Division and at Serian in the First Division. Other hospital institutions run by the Government Medical Department are the Rajah Charles Brooke Memorial Hospital and the Sarawak Mental Hospital both situated within the District of Kuching. There are 1,030 beds in Government General Hospitals and 139 in non-Government hospitals making a total of 1,069 general beds available for the population of 831,773. In addition there are 252 restbeds attached to the thirty seven static dispensaries run by the Medical Department.

13. In addition to the thirty-one government doctors, there were twenty-eight private medical practitioners on the register in Sarawak at the end of the year, including Shell Oilfields doctors, Mission doctors, and a Peace Corps doctor.

14. There were seven Government dental officers and 136 private dentists on the register at the end of the year, but of the latter only three, including one employed by the Shell Oilfields Limited, possessed degrees or diplomas scheduled under the Dentists Registration Ordinance, the others being registered under a special provision of the Ordinance.

15. Outside Government Service, there was only one qualified pharmacist in Sarawak, attached to the Methodist Mission hospital at Kapit. Ninety-five annual licences to sell poisons on a restricted basis were issued to business concerns during the year.

16. The number of midwives registered under the Midwives Ordinance was 449 of which 185 were in Central, and 156 in Local Government employment.

17. The total sum estimated for recurrent expenditure in the State of Sarawak by the Medical and Health Department during 1965 was $10,189,728 which represents 8.8 per cent of the total recurrent expenditure for the Ministry of Health. This sum compares with the actual recurrent expenditure during 1964 of $9,047,441. In addition the sum of $2,855,496 was provided from Federal Funds for Development Expenditure during the year, compared with $3,921,405 in 1964, and the sum of $296,295 for Capital Expenditure compared with the 1964 figure of $254,433.

II. GENERAL REVIEW

18. The inauguration of Malaysia on September 16th, 1963, brought to an end the independent existence of the Sarawak Government Medical Department. Under the new constitution the Sarawak Medical Department became a unit of the Federal Medical Department of Malaysia. The effect of this change is that major policy decisions and the financing of the department are matters which become the direct responsibility of the Minister of Health in the Malaysian Government. The routine administration of the department together with the preparation and presentation of policy proposals for consideration by the Minister, and the execution of policy once it has been decided, remain the responsibility of the Sarawak Medical Department.

19. Unfortunately, the establishment of Malaysia has brought with it an eruption of trouble on the border between Sarawak and Indonesia, with the result that several thousand British and Malayan troops have had to be brought into the country in order to preserve the boundaries of the territory and to protect that part of the population which lives in the border areas. These troops have been involved in a certain number of minor actions against Indonesian-based bandits and the medical care of the casualties resulting from these actions and the normal daily wastage of sick amongst the troops has placed a considerable strain on the hospitals in Kuching, Simanggang and Sibu. An agreement between the Forces and the department was reached at an early stage whereby any member of the British Forces who through sickness or injury was thought unlikely to be fit for service within seven to ten days from the onset would be evacuated by air from Sarawak to Singapore. This arrangement has functioned admirably and has considerably relieved the strain on the hospital accommodation. The co-operation between the Service medical officers and medical orderlies and all members of the department has been excellent, and both in the hospitals and in the rural areas, even in the most remote *kampongs*, the Service medical personnel have been at pains to give whatever help they can to the department and, directly, to the local people. On several occasions Service helicopters have been made available for the evacuation of sick persons from longhouses to one or other of the major Government hospitals, and also for ferrying staff of the Medical Department into some of the more inaccessible houses and *kampongs* in the State, when their services were required there. Among the unfortunate results of the border troubles has been the necessity, for security purposes, to restrict movement in the border areas. This has seriously interfered with certain aspects of the Malaria Programme.

20. The 1964/1968 Development Plan is supported by funds amounting to $343,071,341 out of which the sum of $19,519,425 is for the Medical Department, which is 5.68 per cent of the total. In this plan high priority has been given to projects which will benefit the rural areas particularly. Of these, the Rural Health Improvement Scheme, the Malaria Eradication and Tuberculosis Control Projects, the School Dental Service Scheme and the large provision for rural treatment centres are of particular importance. The largest single item in the whole plan is the provision of $13,500,000 for the construction of a new General Hospital for Sarawak in Kuching.

21. "El-Tor" cholera occurred once again in the State during the year. The epidemic was sporadic and carried with it a low mortality. Some details of the outbreak will be found later in this report.

22. Considerable progress has been made during the year with buildings. The contract for the new Sarawak General Hospital, Kuching, has been awarded to Messrs. San Development Co. Ltd. and construction work will begin early in the New Year. Two Local Hospitals at Marudi and Lundu have been completed. New dispensaries, constructed according to the departmental standard plan, have been built at Pantu, Skrang, Long Linau, Pulau Bruit, Ng. Medamit and a replacement dispensary has been built at Tatau. A total of eleven low cost houses has been completed in the First Division for the Rural Health Improvement Scheme.

23. On the 25th April, 1965, three members of the department while on a routine visit to villages near the border with Kalimantan were abducted by Indonesian terrorists. The Federal Government has attempted to contact and secure their release through the good offices of the International Red Cross, but so far without success, and their present whereabouts and fate are still unknown.

III. VISITORS

24. The department has continued to receive visits and advice from officials of various international agencies, particularly W.H.O. and U.N.I.C.E.F. We have also been privileged to welcome several members of the staff of malaria projects from countries in the Western Pacific Region, sent by W.H.O. to observe the progress of the Sarawak Project. The following visitors from W.H.O. and U.N.I.C.E.F. have been received:—

Dr. W. W. Yung	— W.H.O. Representative, Malaysia.
Mr. J. Arbuthnot	— Regional Adviser on Environmental Health, W.H.O./W.P.R.O., Manila.
Dr. H. M. C. Poortman	— Regional Adviser on Maternal and Child Health, W.H.O./W.P.R.O., Manila.
Mr. A. Aldama	— Regional Statistician and Programme Evaluator, W.H.O./W.P.R.O., Manila.
Dr. A. Munoz	— Regional Adviser on Nutrition, W.H.O./W.P.R.O., Manila.
Mr. P. S. Echavez	— Regional Sanitary Engineer (Malaria), W.H.O./W.P.R.O., Manila.
Dr. J. H. Hirshman	— Public Health Administration Officer, W.H.O./W.P.R.O., Manila.
Mr. K. Yongyingsak	— U.N.I.C.E.F., Bangkok.
Dr. C. M. Han	— Malariologist, Republic of China.
Dr. T. K. Kang	— Malariologist, Republic of China.
Dr. Y. K. Hsu	— Malariologist, Republic of China.
Dr. Y. H. Paik	— Director, Malaria Eradication Service, Republic of Korea.

Dr. A. C. Van der Gugten — W.H.O. Senior Malaria Adviser, Republic of Korea.
Dr. M. Miyairi — W.H.O. Senior Malaria Adviser, Brunei.
Mr. H. K. Chang — W.H.O. Sanitarian, Brunei.
Miss Lily M. Turnbull — Regional Nursing Adviser, W.H.O./W.P.R.O., Manila.

25. The following visitors were also received by the department during the year:—

Lady Patricia Brabourne — Visitor to Kuching.
Mr. Clement How — Ministry of Health, Kuala Lumpur.
Enche' Nawi bin Embong — Ministry of Health, Kuala Lumpur.
Mr. T. P. Davin — Ministry of External Affairs, New Zealand.
Mr. G. S. Aburn — Ministry of External Affairs, New Zealand.
Mr. H. A. Jones — ILD Asian Vocational Rehabilitation Adviser.
Professor Nathan S. Kline — Columbia University, U.S.A.
Sir Harry Wunderly — Colombo Plan Adviser to Tuberculosis.
Enche' Bahaman bin Shamsuddin — Minister of Health, Malaysia.
Dato (Dr.) Mohd. Din bin Ahmad — Director of Medical Services, Malaya.
Miss Chong Ah Foo — Principal Matron, Malaya.
Dr. P. J. L. Roche — Pathologist, Medical Department, Sabah.

26. Several visits have also been paid by various senior officers of the Armed Forces.

IV. STAFF

27. The Senior staff of the department as on 31st December, 1965 was as follows:—

Designation	*Establishment*	*Actual*	*Remarks*
Director of Medical Services ...	1	1	
Deputy Director of Medical Services	1	1	
Assistant Director of Medical Services	1	—	
Supernumerary Assistant Director of Medical Services	1	1	Kuching.
Medical Specialist	1	1	Kuching.
Ophthalmic Specialist	1	1	Kuching.
Surgeons	3	3	Kuching, Sibu, Miri.
Psychiatric Specialist	1	1	Kuching.
Specialist Pathologist	1	—	
Senior Medical Officer	3	3	
Medical Officers	25	18	
Malariologist	1	—	
Dental Officers	8	7	
Superintendents	6	6	1 Sarawak Mental Hospital. 1 Central Medical Stores. 3 Health Inspectorate. 1 Central Laboratory.

Designation	*Establishment*	*Actual*	*Remarks*
Radiographer	1	1	Kuching.
Principal Matron	1	1	
Matrons	2	2	
Sister Tutors	3	2	Kuching, Sibu.
Health Sisters	4	3	
Almoners	2	1	
Nursing Sisters	27	21	
Physiotherapists	2	1	
Charge Nurses	3	3	
Hospital Administrator	2	2	1 Sarawak Mental Hospital. 1 R.C.B.M. Hospital.
Administrative Assistant	1	1	
Malaria Superintendents	3	3	

28. The Director of Medical Services, Dr. R. Dickie proceeded on long leave on 18th November, 1965. In his absence Dr. M. A. Rozalla has been appointed as Acting Director of Medical Services.

29. Five medical officers were recruited during the year. It is gratifying to note that of these four are of local domicile. One senior medical officer and two medical officers left the service on retirement and on completion of contract. The scheme under which young doctors are recruited from the United Kingdom on six months contract has worked well. Two doctors under this category served during the year. Two medical officers were promoted to be senior medical officers during the year. There were fifteen vacant posts for medical officers at the end of the year.

30. One dental officer of local domicile was recruited during the year. This however did not ease the situation appreciably as there remained three vacancies unfilled at the end of the year. This section is most hard pressed especially in respect of the supervision of the expanding school dental service.

31. There have been heavy losses of senior nursing staff during the year. The Principal Matron, a Sister Tutor and five Nursing Sisters have retired. As more local girls are qualifying from abroad as fully trained nurses, recruitment from this source has been satisfactory, although there were still six vacancies at the end of the year.

V. TRAINING

(a) Overseas

32. During the year thirteen members of the departmental staff returned to duty, having completed the following courses overseas:—

Course	*Number*	*Where taken*
Post Graduate Medical (Master in Public Health)	1	United States of America.
Dentistry	1	Canada.
Psychiatric Nursing	3	New Zealand.
Dental Nursing	8	New Zealand.
Radiography	1	Canada.
Laboratory Technology	2	U.K.

33. In addition there were a further seventy-seven Government sponsored Students and thirty-five serving officers undergoing training in Medical or Para-Medical Subjects at the end of the year, as shown in the following table, making a total of one hundred and thirteen in all:—

Course	*Malaya or Singapore*	*United Kingdom*	*Colombo Plan Countries*	*Total*
Medicine	2	3	29	34
Dentistry	4	—	4	8
Pharmacy	2	—	4	6
Dental Nursing	17	—	—	17
Dental Mechanic	1	—	—	1
Physiotherapy	—	2	—	2
Occupational Therapy	—	3	—	3
Social Science	2	—	1	3
Radiography	1	—	—	1
Medical Laboratory Technology	—	1	—	1
Psychiatric Nursing	1	6	1	8
Hospital Administration	—	1	—	1
General Nursing	—	26	—	26
Medical Stenography	—	1	—	1
Health Inspector	1	—	—	1
				113

37. The number of private candidates studying General Nursing is twenty-nine as compared to twenty-six Government sponsored candidates. It is the aim of the department to strive for full recognition of its local training course by the General Nursing Council of the United Kingdom. At present locally trained candidates have to study for an additional period of eighteen months in order to qualify for registration as State Registered Nurses.

35. The Colombo Plan Organisation has continued to be of great help to the department in providing scholarships for the training of staff of many categories. New Zealand, Australia, Canada and India have all made valuable contributions in this respect. There has been a tendency more recently to send men and women to Malaya and Singapore for training, although the number of Sarawak students in these two countries is small compared with the number of those in the former countries.

36. The World Health Organisation provided the following Fellowships and Courses of training to officers of the department during 1965:—

1. For two Senior Investigators and a Squad Leader of the Malaria Eradication Project to attend a Malaria Eradication Training Course in Manila, Philippines.
2. The Assistant Director (Supernumerary) returned from the United States of America after obtaining the degree of Master of Public Health from John Hopkins University, under a W.H.O. Fellowship.

37. The Director of Medical Services attended the 16th Session of the World Health Organisation Regional Committee for the Western Pacific in September.

(b) Local

38. The training of staff has continued to be one of the most important functions of the department. During the year the following categories of staff passed qualifying examinations:—

Category of staff	*Course*	*Number*	*Length of course*
Trained Nurse	Midwifery	14	One year.
Student Nurses	General Nursing	20	Three years and four months.
Student Nurses	Psychiatric Nursing	4	Three years and four months.
Pupil Midwives	Midwifery	16	Two years.
Student Health Inspector	Health Inspection	1	Three years.
Student Dispenser	Pharmacology		
Student Laboratory Technicians	Medical Laboratory Techniques	1 4	Three years. Three years.
Rural Health Supervisors	Rural Health	10	Nine months.
Microscopist	Malaria Microscopy	1	Three months.
Investigators	Malaria Epidemiology	8	Two months.

39. At the end of the year the following staff were in training:—

Student Nurses and Hospital Assistants	108	
Trained Nurses undergoing midwifery training	16	
Pupil Midwives	39	
Student Health Inspectors	4	
Student Dispensers	6	
Student X-ray Technicians	2	
Student Laboratory Technicians	2	
Student Nurses (Psychiatry)	14	
Assistant Health Visitors	10	
Malaria Microscopist	1	
Trained Hospital Assistants	10	(Refresher Course)

VI. DEPARTMENTAL AND DIVISIONAL ORGANISATION

40. The structure of the Medical and Health Services comprises a Headquarters Office at Kuching, Divisional Offices in the five divisions of the State, and other sectional organisations.

The Headquarters Office is staffed by the Director, Deputy Director, Assistant Director (Health), Principal Matron together with an office staff of nineteen persons. The W.H.O. Malaria Advisory Team also has office accommodation in the Headquarters Office. In each Division there is a Divisional Medical Officer who is in administrative charge of all medical and health activities. In most cases he is assisted by a senior member of the health inspectorate, a health sister or visitor, a malaria superintendent or technician, and a complement of office staff. As regards other sectional organisations, each is in charge of an officer who is directly responsible to the Director of Medical Services. These sections are the General Hospital in Kuching, the Dental section, the Central Pathological

Laboratory, the Central Medical Store, the Mental Health section, the Leprosy section based at the Rajah Charles Brooke Memorial Hospital and the Ophthalmic section.

41. During the year a Divisional Medical Officers' Conference was held from 7th May to 10th May, 1965. During the conference matters of policy and administration were discussed. Other sectional heads were also invited to attend the Conference whenever their experience and knowledge were of value to the discussion.

42. Various other meetings of standing Committees were held at the time of the Divisional Medical Officer's Conference. These were the Malaria and Tuberculosis sessions, and meetings of the Departmental Promotions Board, the Departmental Drugs and Equipment Committee, and the Departmental Committee on Education and Training.

VII. PREVENTIVE AND SOCIAL MEDICINE

Public Health

43. The local authorities are responsible for the maintenance of a satisfactory environmental hygiene within their respective areas through their health inspectors. The Divisional Medical Officers are medical officers of health to the local authorities in an advisory capacity. A senior member of the government health inspectorate is also available in each division to advise and coordinate the activities of the health inspectorate of the various local authorities. Monthly or quarterly meetings of the health inspectorate were arranged in the First and Third Divisions. The health inspectorate is further strengthened by the arrival of two Peace Corps Sanitarians who have rendered valuable service especially in the rural areas.

44. The "pit latrines" project in the First Division continued to make very good progress, with a greater number of house-holders requesting that squatting plates be supplied. Health education by Rural Health Supervisors of the Rural Health Improvement Scheme was obviously having an effect in the rural areas. The scheme now covers the whole State with the completion of training of nine candidates from other divisions, and is referred to again later in this section.

45. Protective immunisation against diphtheria, tetanus and whooping cough continued to be provided in all Maternal and Child Health Clinics. Free vaccination against smallpox and cholera was also available at all Government Medical Centres in the State. Vaccination against poliomyelitis using the Sabin oral vaccine was also provided. Due to the outbreak of cholera in the Fifth Division, a large number of persons were given prophylactic inoculation. Free inoculation against cholera was also given to persons travelling abroad. All persons proceeding to Mecca for the Pilgrimage also received inoculation against cholera and vaccination against smallpox.

46. The incidence of diphtheria in all Divisions remained reasonably low with ninety-nine cases as compared to sixty-five for the previous year. Mass inoculation campaigns carried out from time to time throughout the State have undoubtedly kept the incidence of this disease at a low level.

47. U.N.I.C.E.F. continued their valuable contributions with the donation of another further twenty-four kerosene refrigerators. This had enabled the Department to store vaccines in remote medical centres for the continuation of mass vaccination and inoculation campaigns.

Health Education

48. During the year health education has been intensified by the distribution of posters, pamphlets, circulars, talks and radio talks. The department put up a stall at the Trade Fair in Kuching for the dissemination of health education. Similar exhibitions were also arranged in other parts of the country.

Maternal and Child Health Services

49. All the M.C.H. clinics in the State are run by the Local Authorities with the exception of one mobile road clinic which is staffed by Government midwives and is based at Kuching. The training of midwives for M.C.H. clinics remains a responsibility of the Medical Department.

Both the Kuching Municipal Council and the Sibu Urban District Council employ their own trained senior health staff to run the clinics and domiciliary midwifery service. The Kuching Municipal Council employs a lady medical officer doing part-time duties in the clinic at Sekama Road. The Central Clinic of this Council still occupies part of the premises of the Government Health Centre.

Certain medical supplies are provided free of charge to all M.C.H. Clinics by the Medical Department. U.N.I.C.E.F. continues to give generous assistance by providing equipment for new clinics including refrigerators, and kits for newly graduated midwives. Also this Organisation provides large quantities of skimmed powdered milk for use in schools and clinics, and Vitamin A and D capsules.

The Divisional Health Sisters attached to the Divisional Medical Offices supervise the activities of all M.C.H. Clinics.

Rural Health Improvement Scheme

50. The Scheme continued to make good progress in the First Division where Rural Health Supervisors have been operating in the Bau District and Serian District. For the first time since the inception of the Scheme in March 1963, recruits for training were drawn from all the divisions in the State. This batch completed training in September 1965 and commenced work immediately in the various divisions.

51. Eleven low-cost quarters were completed in the Bau and Serian Districts of the First Division. More quarters will be built throughout the country in 1966. The trained rural health supervisors are based at these quarters. They travelled constantly to other villages under their jurisdiction for follow-up activities. In almost all cases an excellent relationship is maintained between the villagers and supervisors. Close liaison is also maintained with the agricultural extension workers and district council personnel.

52. U.N.I.C.E.F. has provided tool sets for trained supervisors and also various types of other equipment for the training school.

53. The Scheme is described in greater detail together with relevant statistics in Part II of this report.

VIII. EPIDEMIC AND ENDEMIC DISEASES

(a) Malaria

54. The activities of the Malaria Eradication Project have been greatly hampered by the security situation along the border and also in certain other areas. Spraying teams visiting the border *kampongs* are provided with a military escort, and for certain remote villages the military authorities have very kindly provided helicopters to air lift the personnel concerned. Surveillance activities in other areas of the country continue to make good progress. A very serious focus of infection was detected in the Serian District of the First Division. A total of 123 *P. falciparum* cases was reported from the four villages. Greater emphasis was laid on passive case detection notably in the consolidation and maintenance phase areas.

55. Various categories of Project staff received training in the form of refresher courses. One microscopist completed a three month training course at the Central Malaria Laboratory. Eight investigators completed a special course lasting two months. Three squad leaders were awarded World Health Organisation Fellowships for training in malaria eradication lasting two and a half months at the Malaria Eradication Training Centre in Manila.

56. The World Health Organisation and U.N.I.C.E.F. continued with their generous assistance by providing experts, funds and equipment for the Project. Regional Advisers of W.H.O. and Representatives from U.N.I.C.E.F. made several visits during the year

57 The Project is described in greater technical detail, together with relevant statistics, in Part II of this report.

(b) Tuberculosis

58. The activities of the Tuberculosis Control Project in the First and Third Divisions were confined to the smaller urban areas and rural areas. In the Second and Fourth Divisions work in the main population centres was being completed with a gradual extension of activities to the smaller urban areas. Three Assistant Health Visitors from the Fifth Division are receiving training, so that they can commence work in that Division next year.

59. Eleven Assistant Health Visitors completed their course of training by end of February 1965. A new batch of ten Assistant Health Visitors began training in September. A local Health Sister has been recruited to carry out training following the departure of the Colombo Plan Nursing Sister in late 1964.

60. Sir Harry Wunderly, the Colombo Plan Consultant to the Project visited the State to give technical advice.

61. The Project is described in greater technical detail, together with relevant statistics, in Part II of this report.

(c) Cholera

62. The first case in 1965 was reported on 13th June from the Kapit District of the Third Division. The source of infection of this isolated case was not established. 1,160 persons received inoculation against the disease. The district was declared free from cholera on 17th July.

63. The second outbreak was much more serious and was associated with an epidemic in the State of Brunei. Brunei reported the first case on 21st September followed by Sarawak on 29th September. The outbreak was confined to the Fifth Division. A total of fourteen cases with one death was reported. 21,000 persons received inoculation. The Fifth Division was declared free from cholera on 16th November.

(d) Leprosy

64. The routine treatment of patients at the Rajah Charles Brooke Memorial Hospital is confined to the use of Sulphone (D.D.S.). Great care has been exercised in its use and the onset of the side-effects such as anaemia, hepatitis, dermatitis and psychosis are being closely watched. Five tendon transplant operations were performed with success during the year.

65. An account of the work of the Rajah Charles Brooke Memorial Hospital during the year can be found in Section X, Special Hospitals.

(e) Endemic Goitre

66. Iodised salt for the prevention of endemic goitre has continued to be distributed throughout the Third Division from the Salt Iodisation Plant in Sibu. A new building and plant were under construction in Kuching. The distribution of iodised salt from Kuching to the First, Second and Fourth Divisions is expected to commence towards the end of 1966.

(f) Dysentery and Enteric Fever

67. There continues to be a distressingly large number of cases of dysentery and enteric fever, the result of poor or often non-existent environmental sanitation facilities. During the year, 5,955 cases of dysentery and 483 cases of typhoid fever were reported. It is anticipated that these figures will not be appreciably reduced in the near future. The Rural Health Improvement Scheme started in 1963 but it is felt that it will take a few years before the benefits of the Scheme become apparent in the rural areas.

(g) Trachoma

68. A total of sixty-four cases was reported as compared with fifty-three cases last year. These figures and those of previous years emphasise the fact that this disease is unlikely to be a public health problem.

Further details on work of the Ophthalmic Section are given elsewhere in this report.

(h) Quarantinable Diseases

69. Cholera has occurred in the Third and Fifth Divisions during the year. No other quarantinable disease occurred.

IX. HOSPITALS AND DISPENSARIES

(a) General Hospitals

70. There were only one major addition or alteration to a General Hospital during the year and this was at Limbang. The distribution of beds in the six Government General Hospitals, as at the 31st of December, 1965, was as follows:—

	General	*Obstetrics*	*T.B.*	*Mental*	*Total*
1. Kuching General Hospital	299	48	73	—	420
2. Lau King Howe Hospital, Sibu	180	27	50	10	267
3. Simanggang General Hospital	61	8	36	—	105
4. Miri General Hospital	100	20	45	—	165
5. Limbang Hospital	27	6	—	—	33
6. Sarikei Hospital	40	—	—	—	40
	707	109	204	10	1,030

71. Two local hospitals each of twenty-five beds were completed during the year under the 1964-1968 Development Plan. The local hospitals are situated in the district headquarters of Lundu in the First Division and at Marudi in the Fourth Division. These hospitals are at present under the charge of a Charge Nurse or a Chief Hospital Assistant directly responsible to the Divisional Medical Officers concerned. Plans have been finalised for the construction of two additional local hospitals at Bintulu, Fourth Division and at Lawas, Fifth Division.

72. In addition to the above, mission hospitals provide a further 139 beds, the majority of which are for obstetrics, although there is a small General Hospital of fifty-six beds at Kapit in the Third Division run by the Methodist Mission. It is staffed by two doctors, a dentist, and a pharmacist, and it provides X-ray and operating theatre facilities. The other mission hospitals, run by the Roman Catholic Mission are sited as follows:—

Serian	—	First Division	—	12 beds
Sarikei	—	Third Division	—	10 beds
Mukah	—	Third Division	—	5 beds
Kanowit	—	Third Division	—	40 beds
Long San	—	Fourth Division	—	16 beds
				83

General Hospital, Kuching

73. This is the largest and oldest hospital in the State. It serves the whole of the First Division and a large section of the Second Division. The hospital

provides the full facilities of a General Hospital, each unit in it being under direction of a specialist officer. It is the main training centre for nurses and midwives.

The Central Pathological Laboratory is situated in the compound of the General Hospital. It serves this hospital and also other hospitals in the State through the divisional laboratories. It is also the centre for the training of laboratory technicians.

74. The recreation ground for use of the staff of the General Hospital has been regularly used as a landing pad for military helicopters, evacuating both military and civilian patients. Ward 4 of the General Hospital is allocated to the Armed Forces who use their own medical officers and nursing staff, and provide their own food and drugs for the ward. A happy relationship with the medical and nursing staff of the Armed Forces has been maintained throughout the year.

75. The number of senior nursing staff in the hospital was maintained at a satisfactory level throughout the year. The number of staff who completed their training at the Nurses Training School was also satisfactory.

Lau King Howe Hospital, Sibu

76. Extensions to the Maternity Block commenced in August and although rapid progress was made initially, it is unlikely that the project will be completed before April 1966.

77. The medical staff remained under stress throughout the year. There has been increase in the volume of work and only three medical officers and one surgeon were available for the hospital. This was one below the strength of the previous year. Senior and junior nursing staff were maintained at a satisfactory level throughout the year.

78. A Midwives Training School at this hospital was fully established with the arrival of a Sister Tutor for the school. The school is functioning well, but there are accommodation problems for the trainees.

Simanggang General Hospital

79. Some minor changes and improvements were made during the year. The medical staff situation remained unchanged compared to 1964 as only one medical officer was available for posting to the hospital who also acted as Divisional Medical Officer.

Miri General Hospital

80. Minor improvements were made to the hospital. The medical staff and senior nursing staff situation improved and was maintained at a satisfactory level throughout the year. The Divisional Medical Officer being relieved of urgent hospital duties was able to tour the division.

The last of the series of refresher courses for hospital assistants conducted by the Divisional Medical Officer was completed in June.

81. A new wing to the Limbang General Hospital was added during the year. The bed strength was thus increased from twelve to thirty-three. A medical officer was available for the hospital throughout the year.

A small extension to the medical store and the office of the Sarikei General Hospital were completed during the year. The hospital had one medical officer throughout the year and in addition to other nursing staff the services of a full-time laboratory technician were also made available.

(b) Static and Travelling Dispensaries

82. There were thirty-eight static dispensaries and eleven travelling dispensaries in operation at the end of the year. The static dispensaries at Lundu and Marudi were replaced by twenty-five bed local hospitals. Four new static dispensaries were opened at Pantu, Second Division; at Long Linau, Third Division; at Tatau, Fourth Division; and at Nanga Medamit, Fifth Division. One quarters at Serian, First Division was completed for the road travelling dispensary. Attendances at dispensaries throughout the country continue to increase.

83. The number of restbeds in static dispensaries is now 252, the distribution of which is shown below:—

First Division	*No. of Restbeds*
Bau Dispensary	4
Serian Dispensary	10
Tebakang Dispensary	4
Nonok Dispensary	3
Simunjan Dispensary	5
Muara Tuang Dispensary	5
Siburan	—
Second Division	
Lubok Antu Dispensary	4
Engkilili Dispensary	5
Lingga Dispensary	7
Sebuyau Dispensary	7
Betong Dispensary	15
Spaoh Dispensary	8
Debak Dispensary	2
Pusa Dispensary	6
Saratok Dispensary	6
Kabong Dispensary	10
Nanga Budu Dispensary	0
Pantu Dispensary	6
Third Division	
Binatang Dispensary	12
Matu Dispensary	6
Dalat Dispensary	5
Mukah Dispensary	8
Balingian Dispensary	6
Daro Dispensary	6
Kanowit Dispensary	10
Julau Dispensary	14

Third Division	*No. of Restbeds*
Song Dispensary	8
Kapit Dispensary	7
Belaga Dispensary	8
Entabai Dispensary	0
Long Linau Dispensary	5
Fourth Division	
Bintulu Dispensary	14
Bekenu Dispensary	10
Tatau Dispensary	6
Fifth Division	
Lawas Dispensary	10
Sundar Dispensary	4
Nanga Medamit Dispensary	6
Total	252

(c) Ulu Dressers

84. All the ulu dressers in the country were re-absorbed into the Government establishment on January 1st, 1963. These men, selected from kampongs and longhouses, were given a short course of training in simple medical and surgical procedures and treatment, and paid a small salary. It was intended that they should work in the more remote rural areas where the services of the Medical Department were lacking. Unfortunately this scheme has not proved entirely successful, and it has been decided that it should gradually end. Consequently, there has been no further recruitment of ulu dressers during the year and those who have resigned for one reason or another have not been replaced.

85. The number of ulu dressers in service at the end of the year was twenty-nine, distributed as follows:—

First Division	6
Second Division	4
Third Division	5
Fourth Division	11
Fifth Division	3

(d) Home Helps

86. Home helps were introduced as a substitute for the unsuccessful ulu dresser scheme. Home helps are voluntary workers who have been selected by the headmen of villages or administrative officers. They receive a short course of training conducted by a senior hospital assistant, who is normally the divisional travelling supervisor of all static dispensaries, ulu dressers and home helps. On completion of training, home helps are supplied with a medical kit containing a simple scale of drugs and equipment, and their purpose is to give first aid and simple medical treatment to persons living in their own or neighbouring villages. Their supplies of medicine are replenished from the various Divisional Medical Stores through the static or travelling dispensaries. A good number of home

helps have resigned to join the security forces. Replacement is no problem, however. The scheme as a whole has proved to be a success and there is increasing demand for the services of these volunteers, notably in the more remote areas of the country.

87. The number of Home Helps on the register at the end of the year was 278, distributed as follows:—

First Division	79
Second Division	43
Third Division	76
Fourth Division	64
Fifth Division	16

X. SPECIAL HOSPITALS

(a) Sarawak Mental Hospital

88. This hospital is situated seven miles from Kuching along the main trunk road to the Second Division. It has ward accommodation of various grades for 300 in-patients. Patients are admitted and treated in this hospital, for various types of mental illness. In addition, cases from neighbouring Brunei are also accepted and occasionally referred cases come from Sabah. Both in-patient and out-patient activities have increased during the year. Regular outpatient facilities are available at the Sekama Road Clinic in Kuching. Senior staff members of the hospital travel to Sibu, Sarikei, and Miri regularly where psychiatric out-patient clinics are also held.

There have been only minor changes in the staff situation during the year. A clinical psychologist (volunteer) under the Canadian University Service Overseas scheme has joined the staff for two years from September.

89. Training continued as an important part of the work of this hospital, and at the end of the year, there were fourteen students under training. Three staff hospital assistants completed an eight months training course in New Zealand. Four trained male mental nurses and two trained female mental nurses are in the United Kingdom undergoing further training in mental nursing.

90. The Psychiatric Specialist attended the 18th Annual Conference of the World Federation of Mental Health in Bangkok in November 1965 lasting one week. The hospital was visited by an acknowledged leader of world opinion in mental health in the person of Professor Nathan S. Kline, (Columbia University) Director of Research, Rockland State Hospital, U.S.A. Professor Kline stayed five days in Sarawak and, among other subjects, he discussed various aspects of the proposed Psychiatric Research Project.

(b) Rajah Charles Brooke Memorial Hospital

91. This hospital is situated thirteen miles from Kuching along the Penrissen Road. It is the only Centre in the region for the treatment of leprosy, and patients from Brunei and Sabah are also treated in this hospital. It has accommodation for 400 patients, most of whom live in cottages or barrack type houses. There is ward accommodation for seventy-three patients, which is used mainly for patients

suffering from a severe reaction, or for those undergoing surgical treatment. At the end of the year there were 271 patients, as compared to the 1963 figure of 350. The discharge rate has improved greatly due to the adoption of modern and effective methods of treatment.

92. The hospital is under the day to day charge of an Administrator, assisted by a complement of hospital assistants, assistant nurses and other ancillary staff some of whom are patients. The medical work is supervised by a visiting medical officer from Kuching, and a surgeon undertakes surgical rehabilitation work for the crippled and deformed. Simple physiotherapy is also carried out by specially trained staff. A workshop is available for the preparation of artifiical limbs, special shoes, etc. which are hand-made. The hospital grounds have vegetable gardens, pepper vines, rubber and fruit trees which have been planted and cared for by the patients. Wood carvings of a high standard are also made by patients for sale to supplement their earnings.

93. Improvements to hospital wards have been carried out during the year. A physiotherapy section complete with rest beds, diathermy section, and splinting and massage rooms was provided towards the end of the year. In addition mosquito proofing of three wards was completed. A steam laundry machine was also installed. The Public Works Department completed the laying of new pipe lines to all houses in the area, in preparation for a water supply from Kuching, which will be connected in due course.

94. Two training courses, each of six weeks duration, were held for trained hospital assistants. The purpose of these courses of training is to give theoretical instruction and practical training in the epidemiology, diagnosis, treatment and prevention of leprosy. Nineteen hospital assistants completed the training course during the year, and thus making a total of sixty-two hospital assistants who have received this specialised course of training. These men have been posted to rural dispensaries where they will be better equipped to play their part in the campaign for the control of leprosy in the State. During the year the Administrator visited the Sungei Buloh Leprosarium and various out-patient dispensaries in States in West Malaysia on a short study course.

95. The Kuching Branch of the British Red Cross Society has continued to give much assistance by regular visits to the patients, and by distributing books and magazines. The Salvation Army Girls Home has, as usual, shown the greatest of kindness in looking after children born in the hospital, when the parents are undergoing treatment. Regular visits to the hospital have also been made by priests of the Anglican and Roman Catholic Missions which have been much appreciated.

XI. SPECIALISED SERVICES

(a) Ophthalmic Services

96. Out-patient attendances have increased again during the year. The total of new patients treated both at Kuching and in outstations rose by over a thousand compared with 1964. More patients have been admitted to the Kuching General Hospital now that the eye wards are functioning. There were 324 admissions

compared with 170 in the previous year. Similarly more operations were performed due to the increase in ward accommodation. A total of 271 operations were carried out compared to 187 for 1964.

One of the highlights of the year was the visit of the Royal New Zealand Ophthalmic Team who visited Sarawak in July. Several successful corneal graft operations were performed and some patients were treated with radioactive Strontium for pterygium, apart from other procedures carried out by the team. The Ophthalmologist had the benefit of the expert opinion of Wing Commander Randel Elliot the team leader on a number of cases. It is hoped that another visit of this type can be arranged in the future.

97. Visits to outstations were of a shorter duration this year due to the greater volume of work in Kuching. However an increased willingness on the part of patients to come to Kuching for treatment was noted. A complete set of instruments for corneal grafting has been built up during the year and it is hoped that this procedure can be carried out as and when necesary in 1966.

(b) Dental Services

98. The Superintending Dental Officer reported an increase in activities and an expansion of services during the year. The dental officer establishment was understaffed, with three vacancies unfilled during the year. One new dental officer, a Taiwan graduate, was recruited whilst an induced officer left on retirement under the Compensation Scheme. One local dental officer returned towards the end of the year after completing a course of Dental Public Health in Canada. The services of a Voluntary Service Overseas dentist and a dental nurse supervisor (through the auspices of the Colombo Plan from New Zealand) were made available. These personnel are giving valuable assistance in the consolidation and expansion of the School Dental Service. Eight dental nurses returned after training in New Zealand under the auspices of the Colombo Plan. There are now sixteen trained dental nurses working in the State. Seventeen student dental nurses are undergoing training in Penang, Malaya.

99. Under the Development Plan 1964/1968, two new Dental Clinics were built, one in Simanggang, Second Division, and the other in Limbang, Fifth Division. The Simanggang Dental Clinic was declared open by the Minister for Local Government, Dato Dunstan Endawie, on 2nd November, and the new Dental Clinic in Limbang was declared open by the Deputy Chief Minister, Dato James Wong on 23rd December. More School Dental Clinics were being established in Primary Schools. At the end of the year the distribution of School Dental Clinics stood as follows:—

Kuching	5	School	Dental	Clinics
Simanggang	1	„	„	„
Sibu	5	„	„	„
Sarikei	1	„	„	„
Miri	3	„	„	„
Lawas	1	„	„	„

100. Dental Officers continued to make outstation visits to provide dental care to people living in the rural areas. A concerted effort to improve dental health education was maintained in schools and government clinics, but due to heavy pressure of work little use has been made of mass media. Considerable help has been received from the Security Forces who have co-operated by transporting staff and equipment to remote places for dental visits. The fluoridation of all new, fully-treated water supplies, was continued by the Public Works Department.

(c) Pathological Services

101. Medical laboratory facilities are available at the Central Medical Laboratory, which is situated in the grounds of the General Hospital, and at subsidiary laboratories located in the Health Centre, Kuching, the Sarawak Mental Hospital, and the Rajah Charles Brooke Memorial Hospital. Similar facilities of varying degree are also available in the divisional laboratories attached to the main hospitals at Simanggang, Sibu, Sarikei and Miri. The Central Medical Laboratory is under the charge of a medical officer who also exercises overall control of the subsidiary and divisional laboratories. The Central Medical Laboratory also acts as a reference laboratory for the whole State. Work in the subsidiary laboratories is limited to investigations that are more or less routine, with the shunting back of other materials to the Central Medical Laboratory. The divisional laboratories serve the hospitals to which they are attached, and they are responsible for the day-to-day examination of a large number of specimens. Periodic checks are made to ensure that the standard of work carried out in these laboratories reaches the same standard as in the Central Laboratory by issuing known standard samples for examination. Close liaison with workers in the divisional laboratories is maintained by regular inspection tours by senior members of the Central Medical Laboratory.

102. The training of all technical staff is also carried out in the Central Medical Laboratory. Courses of training for student laboratory technicians last for three years, and consist of lectures and day-to-day bench training followed by examinations. Two students are receiving such training at present. In addition, three locally trained laboratory technicians are in the United Kingdom under Government Scholarship studying for the A.I.M.L.T. diploma. Trained laboratory technicians from subsidiary and divisional laboratories also receive refresher courses of training from time to time. The technical side of the laboratory was supervised by an American Peace Corps doctor who very kindly volunteered his services to the Department in this capacity for one year from July 1964. His work during this period was very much appreciated.

103. The blood transfusion service which is run in Kuching jointly by the Kuching Division of the Sarawak Red Cross Society and the Central Laboratory. It has continued to function smoothly and has benefited greatly by the generosity of the large number of Commonwealth troops who are now in Kuching as a result of the border emergency.

DEVELOPMENT OF THE KUCHING BLOOD TRANSFUSION SERVICE
(1959-1965)

YEAR	DONORS BY RACE					Total Donors All Races	RECIPIENTS BY RACE					Total Recipients All Races
	Eur	Ch	M	D	OT		Eur	Ch	M	D	OT	
1959	118	27	57	68	4	274	1	127	52	84	1	265
1960	264	67	105	145	9	590	4	294	138	128	3	567
1961	216	219	228	297	21	981	7	423	126	219	3	778
1962	228	260	273	193	37	991	18	489	144	173	15	839
1963	490	123	210	90	36	949	10	490	130	215	15	860
1964	665	274	399	185	35	1,558	43	713	324	393	18	1,491
1965	828	206	354	175	26	1,589	134	666	285	359	35	1,479

104. The Central Laboratory has continued to run a Central Syringe Service throughout the year for the General Hospital, Kuching.

(d) X-ray Services

105. Diagnostic X-ray units are available in each of the main hospitals at Kuching, Simanggang, Sibu, Sarikei, Miri and Limbang, and also in the Health Centre, Kuching and Rajah Charles Brooke Memorial Hospital. The installation of a MOBILIX 60 X-ray machine was completed at the new Lundu Local Hospital in November.

106. The existing units provide a wide range of diagnostic facilities. In the A.T.A.S. Chest Clinic in Kuching, and in the Chest Clinics in Sibu and Miri, there are also mass miniature cameras, those in Kuching and Sibu being 75 mm and the one at Miri, 100 mm.

107. Two student X-ray technicians were recruited during the year to undergo a course of training lasting approximately three years.

(e) Physiotherapy Services

108. The services are confined mainly to the General Hospital, Kuching. The Physiotherapist makes regular visits to the Rajah Charles Brooke Memorial Hospital and the Home for the Blind for classes in massage manipulations. It is hoped to set up a permanent physiotherapy section at the Lau King Howe Hospital, Sibu and at the Rajah Charles Brooke Memorial Hospital in the near future.

109. Two students are undergoing courses of training in physiotherapy in the United Kingdom. One staff member is in Kuala Lumpur undergoing a course of training in the manufacture of artificial limbs, braces, etc. He is expected back in the State in 1967.

(f) Medical Stores Section

110. This section consists of the Central Medical Store at Kuching, and the Medical Stores in Sibu and Miri. It also includes the dispensaries of the General Hospital, Mental Hospital and Health Centre in Kuching, and those in the

Simanggang, Sibu, Sarikei and Miri Hospitals. A new Medical Store at Simanggang, which was completed during the year, is also part of the section. The Central Medical Store comes under the direct supervision of the Superintendent of Medical Stores. He acts in a supervisory and advisory capacity in respect of other Medical Stores and dispensaries in the State, where trained dispensers are posted.

111. The Central Medical Store continues to handle the purchase, storage and distribution of drugs and equipment for the whole State, except in respect of supplies consigned direct to Sibu by the Crown Agents. However Sibu also draws substantial quantities of various types of drugs from the Central Medical Store, particularly locally manufactured tablets and other pharmaceuticals. One of the most important functions of the Central Store from the point of view of economy is the local manufacture of tablets and other pharmaceutical preparations in its manufacturing laboratories.

112. A new concrete floor for the Central Medical Store was completed towards the end of the year. A serious shortage of space arising from the arrival of large quantities of U.N.I.C.E.F. and Colombo Plan supplies was experienced during the year. The salt iodisation plant building situated within the area of the Central Medical Store was completed. Plans for a new medical store and salt iodisation plant building for Sibu were also being finalised. As stated already, a new medical store was completed at Simanggang, and it will serve the Second Division.

113. The post of Pharmacist remained vacant throughout the year. A trained dispenser was sent to Australia under Colombo Plan auspices to undergo a six months course of training in practical dispensing. The training of dispensers is undertaken at the Central Medical Store and at the end of the year there were six student dispensers in training.

(g) Almoner Section

114. There is only one trained Hospital Almoner with an assistant and they are both based at the General Hospital in Kuching. A student was attached for training prior to proceeding to the University of Singapore for a four-year course in Social Studies. Two young women are undergoing training as Hospital Almoners in the University of Singapore. It is intended to expand this service to other hospitals, when these trainees qualify as Hospital Almoners and return to the State.

115. More than 1,400 patients were referred to the section with various social problems, mainly related to financial embarrassment. Financial assistance involves the payment of bus and boat fares, the waiving of hospital charges, and providing cash to buy food for needy families. Patients from the Rajah Charles Brooke Memorial Hospital and Sarawak Mental Hospital are also referred occasionally, and these cases normally involve adoption and placement of babies of patients, and relief for their families.

(h) Maternal and Child Health Services

116. Steady progress has been maintained in respect of maternal and child health. All M.C.H. Clinics are run by the Local Authorities, although the supervision of staff and clinics is carried out by Health Sisters or Health Visitors attached to the Divisional Medical Officers. Large urban Councils have their own health sisters who are in charge of the clinics and also the domiciliary midwifery service, under the supervision of the Divisional Medical Officer who acts as the Medical Officer of Health to the Council.

117. During the year one trained nurse was undergoing training in Singapore for the Royal Society of Health Certificate for Health Visitors. Sixteen midwives, including fourteen sponsored by various Local Authorities completed the course of training which lasts two years, and have returned to their own areas to practise as registered midwives. Thirty-nine pupil midwives were undergoing training in Kuching and Sibu at the end of the year.

XII. VOLUNTARY ORGANISATIONS

118. The Social Welfare Council which is financed by Government remains the central welfare agency for the control and distribution of Government funds for welfare work to various charitable organisations in the State.

119. During the year the Sarawak Branch of the British Red Cross Society became a Branch of the Malaysian Red Cross Society. The Branch has continued its work of relief for the victims of fires and other disasters, the training of first aid workers, and the organisation of blood transfusion services in Kuching, Simanggang, Sibu and Miri. A transit hostel is maintained at Kuching for patients and their relatives requiring temporary accommodation in Kuching.

During the year a member of the Miri/Lutong branch attended a training course in the United Kingdom, which was sponsored by the British Council.

120. The Anti-Tuberculosis Association of Sarawak (A.T.A.S.) continued to show interest in the Tuberculosis Control Project. Voluntary workers in Kuching assisted in various ways such as the sorting and packaging of P.A.S. and I.N.H. tablets. All cases requiring food parcels or other assistance were investigated by an honorary almoner. Two longhouses at Bintulu and Marudi in the Fourth Division maintained by the Miri Branch of A.T.A.S. have continued to provide accommodation for patients from rural areas who have come in for routine treatment.

121. The Salvation Army has continued its invaluable work in maintaining a home for boys and girls requiring care and attention, and also for the aged. The Girls Home also looks after babies born to parents suffering from leprosy, who are under treatment in the Rajah Charles Brooke Memorial Hospital.

122. The Sibu Benevolent Society maintains a Nursing Home in Sibu town, and an old persons home 'McCarthy Lodge' at Salim, upriver from Sibu. The Nursing Home is for aged men and chronic cases of tuberculosis. A medical

officer from the Sibu Hospital visits it regularly. The Home at Salim accommodates old people of both sexes.

123. In Kuching, a Home for the Aged is run by the Social Welfare Council. It is situated some twelve miles from Kuching along the main trunk road to the Second Division. It has a hospital ward for thirty patients which is run with the help of the Roman Catholic nuns who live in the compound of the Home. The Divisional Medical Officer, First Division, visits the Home regularly.

PART II

Introduction

In Part II of this Report will be found certain statistics which provide an indication of the work done in this department during 1965, and which will enable comparison to be made with the work of previous years. Statistical reports of the Sarawak Malaria Eradication Project, the Tuberculosis Control Scheme and the Rural Health Improvement Scheme are also included.

I. GENERAL HOSPITALS

(a) In-Patient Returns

1. The following are the in-patient returns for all Government hospitals for 1965. These are compared with the previous four years:—

Hospital	*1961*	*1962*	*1963*	*1964*	*1965*
Kuching General	8,589	9,900	10,397	11,499	12,779
Lau King Howe, Sibu	7,320	7,525	8,677	10,439	9,249
Simanggang General	1,559	2,147	2,798	2,637	2,644
Miri General	3,475	3,447	3,660	3,446	3,813
Limbang General	—	517	579	648	619
Sarikei District	—	178	1,881	1,910	2,057
Marudi Local	—	—	—	—	151
Lundu Local	—	—	—	—	76
Total ...	20,943	23,714	27,992	30,579	31,388

N.B.—These figures include all maternity cases delivered in hospital.

2. There has therefore been an increase in the total number of in-patients treated in hospitals, of 809 compared with the 1964 figure. This increase has been spread over the whole country, except in Sibu where there has been a noticeable decrease. Limbang has also shown a slight decrease.

(b) Out-Patient Returns

3. Out-patient returns for hospital out-patient departments are shown below. These are compared with the 1963 and 1964 returns:—

Hospital Out-Patient Department	*No. of New Patients Treated*			*No. of Minor Operations Performed*		
	1963	*1964*	*1965*	*1963*	*1964*	*1965*
Kuching:						
(a) Health Centre	32,618	22,241	26,099	2,274	1,894	2,574
(b) Senior Service Clinic ...	5,849	5,939	6,293	601	709	656
Sibu	44,136	58,125	45,125	2,272	2,463	556
Simanggang	21,263	22,672	21,585	449	229	751
Miri	13,096	19,028	21,102	1,856	2,439	2,439
Limbang	4,835	3,087	4,011	96	213	93
Sarikei	21,553	27,475	29,597	371	73	164
Marudi	—	—	3,434	—	—	—
Lundu	—	—	3,193	—	—	—
Total ...	143,350	158,567	163,632	7,919	8,020	7,233

4. There has been little change in the amount of work done in the out-patient departments of hospitals compared with 1964. However, the number of minor operations performed has shown a decrease.

(c) X-ray Services

5. A summary of the work done in the various X-ray departments, attached to hospitals and out-patient clinics, is given below:—

	No. of Patients X-rayed	
	1964	*1965*
Kuching General Hospital	8,698	12,240
Chest Clinic, Kuching (Large)	43	5,399
Chest Clinic, Kuching (75 mm)	13,653	13,096
Lau King Howe Hospital, Sibu (Large) ...	10,663	9,177
Lau King Howe Hospital, Sibu (Miniature) ...	20,139	14,049
Simanggang Hospital	5,381	5,573
Miri General Hospital	5,575	7,935
Miri T.B. Hospital	3,926	5,584
Sarikei Hospital	1,955	2,491
Limbang General Hospital	1,972	2,476
Total ...	72,005	78,020

6. The X-ray unit in Sarikei Hospital was brought into use in 1963. The large numbers of miniature films taken in Kuching and Sibu are taken in the course of the Tuberculosis Control Project and include films taken for routine medical examinations.

7. Returns from the main general hospitals in the State show the variety of work done in the X-ray departments of those hospitals:—

Nature of Film	*Number of Examinations*					*Total*
	Kuching	*Simanggang*	*Sibu*	*Sarikei*	*Miri*	
1. Chest	6,404	4,972	5,068	1,915	5,410	23,769
2. Bone	5,641	596	3,113	480	1,874	11,704
3. Gall Bladder	93	9	164	11	36	313
4. Genito-urinary	529	40	355	39	33	1,046
5. Gastro-intestinal ...	293	27	260	33	123	736
6. Abdomen (straight) ...	299	34	297	15	205	850
7. Obstetrical	124	26	212	33	75	470
8. Sinuses	58	9	84	—	79	230
9. Miscellaneous	37	4	12	30	50	133
Total ...	13,478	5,717	9,565	2,556	7,935	39,251

(d) Physiotherapy Service, Kuching

8. The General Hospital, Kuching, is the only hospital in the country that has an established Physiotherapy Department. The Physiotherapist also holds classes for massage and exercises for hands and feet twice weekly at the Rajah Charles Brooke Memorial Hospital (for leprosy).

9. Patients treated in the Physiotherapy Department during the year 1965 as compared with the previous two years are as follows:—

	1963	*1964*	*1965*
In-Patients			
Number of treatments given	1,346	1,993	2,994
Electrical treatments	—	82	328
Out-Patients			
Number of treatments given	629	1,616	2,180
Electrical treatments	63	236	1,865
Total attendances at weekly Fracture Clinic ...	486	484	832

(e) Surgical Services

10. The numbers of the operations performed on in-patients during the year in the various hospitals are shown below. These are compared with the four previous years:—

	1961	*1962*	*1963*	*1964*	*1965*
Kuching General Hospital ...	2,687	1,910	1,962	2,103	2,581
Lau King Howe Hospital, Sibu ...	3,890	3,581	3,297	3,183	3,139
Simanggang General Hospital ...	256	489	439	149	294
Miri General Hospital	2,344	3,601	726	2,894	2,970
Limbang General Hospital ...	—	78	55	51	106
Government Hospital, Sarikei ...	—	—	437	286	379
Total ...	9,177	9,659	6,916	8,666	9,469

11. A breakdown of the various categories of operation is shown below:—

	General Surgery		*Orthopaedic Surgery and Fractures*	
	Major	*Minor*	*Major*	*Minor*
Kuching General Hospital	589	1,327	110	555
Simanggang General Hospital ...	12	179	20	83
Lau King Howe Hospital, Sibu ...	627	2,127	107	278
Government Hospital, Sarikei ...	15	273	2	89
Miri General Hospital	495	2,184	36	255
Limbang General Hospital	104	2	—	—
Total ...	1,842	6,092	275	1,260

12. There has not been any significant change in the types of surgical conditions treated in the various hospitals. Trauma accounts for the greatest number of operations in each hospital, and the second commonest cases are surgical emergencies such as acute appendicitis and perforated peptic ulcer. With the increase in the amount of traffic on the roads the number of fractures resulting from accidents is increasing steadily.

(f) Obstetrical and Gynaecological Services

13. There was another rise in the number of deliveries in hospital during the year in spite of an expanding domiciliary midwifery service. It is the practice to discourage the admission of normal multiparae for delivery.

	1961	*1962*	*1963*	*1964*	*1965*
Kuching General Hospital ...	2,905	3,175	3,187	3,693	3,688
Lau King Howe Hospital, Sibu ...	987	1,029	1,419	1,383	1,372
Simanggang General Hospital ...	232	273	272	291	375
Miri General Hospital	546	564	590	651	630
Limbang General Hospital ...	—	22	38	55	13
Government Hospital, Sarikei ...	—	—	132	111	123
Total ...	4,670	5,063	5,638	6,184	6,201

14. The following table shows the number of maternal deaths in each hospital during the year, and a comparison is made with 1963 and 1964:—

	1963	*1964*	*1965*
Kuching	5	2	4
Sibu	2	4	9
Simanggang	2	4	5
Miri	0	2	0
Limbang	0	0	2
Sarikei	1	0	2
Total ...	10	12	22

This gives a maternal mortality of 3.55 per thousand for 1965 compared with 1.94 per thousand for 1964. It should be remembered that a large proportion of the cases admitted to hospital for delivery are abnormal, and that some are women in whom labour has been prolonged due to some abnormality and who have had to make difficult and obstetrically dangerous journeys to reach hospital.

15. The extent to which the hospitals catered for the obstetric abnormality is shown in the following table:—

	Kuching	*Sibu*	*Simanggang*	*Miri*	*Sarikei*	*Total*
Caesarian Section	64	57	12	17	11	161
Forceps Delivery	50	53	5	12	2	122
Manual removal of placenta	68	64	7	15	24	178
Plural births	47	33	8	6	4	98
Post Partum haemorrhage ...	130	72	15	41	12	270
Toxaemias of pregnancy and the puerperium	143	87	8	4	11	253
Abortions	300	387	50	128	79	944
Stillbirths	69	50	12	17	11	159

16. Gynaecological surgery is a major activity in the divisional hospitals, the extent of which is indicated by the fact that in the General Hospital, Kuching, 189 major and 491 minor gynaecological operations were performed during the year.

(g) Ophthalmic Services

17. The Ophthalmologist is based on, and has his Central Clinic in Kuching, although he also visits and holds clinics in the other divisions.

Eye Clinic, Kuching

	1961	*1962*	*1963*	*1964*	*1965*
New Patients treated ...	3,472	3,887	4,777	5,146	5,710

18. Analysis of conditions treated by the Ophthalmologist in various clinics during his tours in 1965:—

	Kuching	*Sibu*	*Bintulu*	*Mukah*	*Miri*	*Marudi*	*Simang-gang*
Refractive errors and muscle imbalance-	1,001	38	15	30	12	60	50
Strabismus	30	4	1	—	1	2	1
Conjunctivitis excluding trachoma	1,603	15	6	6	4	20	3
Trachoma	53	6	2	1	—	3	1
Other inflammatory and degenerative conditions	1,650	50	12	12	3	40	15
Trauma	581	7	1	1	—	2	—
Cataract	203	30	—	7	2	7	7
Glaucoma	20	3	1	—	—	3	2
Uveitis	18	1	1	—	—	2	—
Congenital and hereditary ...	10	6	—	—	1	2	—
Neoplasia (benign)	86	7	—	—	—	3	3
Neoplasia (Malignant)	1	1	—	—	—	—	—
Pterygium and Pinguecula ...	390	15	3	3	3	12	10
Xerophthalmia	15	—	—	—	—	—	—
Optic Atrophy	6	2	1	—	—	—	—
Diseases of C.N.S.	5	2	—	—	—	—	—
Others	4	—	—	—	—	—	—

	Kuching	*Outstation*
Total Spectacles prescribed	483	116

19. The causes of blindness in patients seen in Kuching Eye Clinic and outstations were as follows:—

Cause of Blindness	*Kuching*	*Outstations*
Phthisis Bulbi and Staphyloma ...	16	5
Glaucoma	8	2
Corneal Opacities	2	6
Uveitis	2	2
Cerebral Tumour	—	1
Optic Atrophy of unknown aetiology ...	—	2
Heredomacular Degeneration	1	—
Trachoma	2	1
Choroidal Sclerosis	—	1
Retinitis Pigmentosa	2	—
Congenital Defects	1	1
Syphilitic Optic Atrophy	1	1
Sympathetic Ophthalmia	3	—
Total ...	38	22

20. The age group of the sixty persons incurably blind seen in Kuching and outstations were:—

0 - 20 years	18
20 - 50 years	28
50 - over years	14

21. The number of eye operations performed during the year was as follows:—

Operations	*Kuching*	*Outstations*
Cataract Extraction	109	7
Glaucoma	5	1
Strabismus	10	—
Excision of lacrimal sac	2	—
Detached Retina	2	—
Needling (For congenital, traumatic, and after-cataract) ...	48	—
Major Trauma	19	—
Other intraocular	17	—
Dacryocystorhinostomy	1	—
Various minor and lid operations ...	47	20
Enucleations	7	—
Keratoplasty	4	—
Total ...	271	28

II. SPECIAL HOSPITALS

(a) Sarawak Mental Hospital

	1964	*1965*
22. Total Admissions	630	580
New Admissions	327	253
Re-admissions	303	327
New admissions suffering from Schizophrenia	141	107
Number of Discharges	586	596
Number of deaths in hospital	17	15

23. The diagnostic classification of new admissions in 1965 was as follows:—

Diagnostic Group	*Community*					*Total*	*Percentage*
	Chinese	*Malay*	*Sea Dayak*	*Land Dayak*	*Others*		
Schizophrenias	60	14	13	16	4	107	42
Affective Disorders	20	7	5	9	3	44	18
Organic Psychoses	16	7	4	6	4	37	15
Epilepsies	8	—	5	2	—	15	6
Neurological Disorders	2	—	—	2	—	4	1
Neuroses	19	5	2	5	2	33	12
Amentias	2	1	—	—	1	4	2
N.A.D.	2	1	1	3	2	9	4
Total	129	35	30	43	16	253	100
1st Admission % by race	51	14	12	17	16	100	
Racial % by population	31	16	32	8	13	100	

24. The percentage of voluntary and temporary admissions was approximately the same in 1965 as it was in 1964.

Percentage of Voluntary Patients

1961	63
1962	83
1963	84
1964	90
1965	94

25. New Out-patients Registered:—

	Kuching	*Sibu*	*Miri*	*Total*
1958	19	—	—	19
1959	207	—	—	207
1960	290	—	—	290
1961	310	290	—	600
1962	264	160	—	424
1963	236	219	—	455
1964	155	107	—	262
1965	255	157	10	422

26. Out-patient Attendances at all Out-patient Clinics:—

Year	*1961*	*1962*	*1963*	*1964*	*1965*
No.	3,227	3,871	4,316	4,869	6,035

Further details of these attendances are as follows:—

Diagnostic Group	*Community*					*Total*	*Percentage*
	Chinese	*Malay*	*Sea Dayak*	*Land Dayak*	*Others*		
Schizophrenias	120	22	18	4	10	174	41
Affective Disorders	51	11	3	3	4	72	17
Organic Psychoses	19	10	2	1	2	34	8
Epilepsies	9	5	4	—	—	18	4
Neurological Disorders	3	—	—	—	—	3	1
Neuroses	63	13	10	1	4	91	22
Amentias	4	2	1	1	—	8	2
N.A.D.	13	4	—	4	1	22	5
Total	282	67	38	14	21	422	100
1st Admission % by race	67	16	9	3	5	100	
Racial % by population	31	16	32	8	13	100	

27. The following table summarises the work of this section since 1956:—

Year	Admissions to S.M.H.	Discharges from S.M.H.	Deaths in S.M.H.	New Out-patients in Kuching and Sibu	Total Out-patient attendances at Clinics
1956	154	110	24	13	40
1957	174	110	27	8	48
1958	195	120	34	19	88
1959	338	342	15	207	367
1960	429	405	24	209	1,743
1961	581	567	21	600	3,227
1962	544	542	16	424	3,871
1963	577	581	11	455	4,316
1964	630	586	17	262	4,869
1965	580	596	15	422	6,035

(b) Rajah Charles Brooke Memorial Hospital (for Leprosy)

28.

	1964	*1965*
Number of Patients admitted	63	67
Number of Patients discharged	75	122
Number of deaths	10	6
Number of Patients in hospital on the last day of the year	332	271

29. It has been an objective to maintain as high a discharge rate as possible, in keeping with the policy of the department which is to establish the domiciliary treatment of leprosy, using the hospital only for cases which react, for cases requiring surgical reconstruction and rehabilitation and for the diminishing number of grossly deformed chronic cases who are unable to fend for themselves.

30. The following table shows the racial classification of patients in hospital at the end of 1965:—

Race	Patients in hospital on 31.12.65	Admissions in 1965	Discharges in 1965
Sea Dayak (Iban)	53	17	26
Land Dayak (Bidayuh)	6	3	11
Kayan Group (Kayan-Kenyah) ...	10	2	8
Other Sarawak Natives	3	2	1
Chinese	123	22	41
Malay—including Muslim Melanaus	40	4	14
Melanau	5	4	4
Kadazan	6	3	15
Indonesian	25	10	2
Other	—	—	—
Total ...	271	67	122

31. The above figures may be classified by the Division or State, from where a patient has been admitted, as follows:—

DIVISIONAL CLASSIFICATION OF CASES ADMITTED DURING 1965

	Division or State							*Total*
	First	*Second*	*Third*	*Fourth*	*Fifth*	*Brunei*	*Sabah*	
Iban	2	6	7	2	—	—	—	17
Bidayuh	3	—	—	—	—	—	—	3
Kayan/Kenyah ...	—	—	—	2	—	—	—	2
Other Sarawak races	—	—	—	—	—	2	—	2
Chinese	5	1	10	—	—	2	4	22
Malay	1	—	1	—	—	1	1	4
Melanau	—	—	3	1	—	—	—	4
Kadazan	—	—	—	—	—	—	3	3
Indonesian ...	—	—	—	—	—	—	10	10
Total	11	7	21	5	—	5	18	67
(Figures for 1964)	(11)	(5)	(10)	(10)	(-)	(1)	(19)	(63)

32. A similar classification may be applied to persons discharged, as follows:—

DIVISIONAL CLASSIFICATION

	Division or State							*Total*
	First	*Second*	*Third*	*Fourth*	*Fifth*	*Brunei*	*Sabah*	
Iban	2	6	14	4	—	—	—	26
Bidayuh	11	—	—	—	—	—	—	11
Kayan/Kenyah ...	—	—	1	7	—	—	—	8
Other Sarawak races	—	—	—	—	1	—	—	1
Chinese	11	—	10	3	—	—	17	41
Malay	1	2	2	5	—	1	3	14
Melanau	—	—	4	—	—	—	—	4
Kadazan	—	—	—	—	—	—	15	15
Indonesian ...	—	—	—	—	—	—	2	2
Total	25	8	31	19	1	1	37	122
(Figures for 1964)	(8)	(13)	(21)	(11)	(-)	(-)	(22)	(75)

33. The age-groups of patients admitted and discharged are shown in the following table:—

Age Group	*Admissions*		*Discharges*	
	1964	*1965*	*1964*	*1965*
5 - 9 years	1	2	2	2
10 - 19 years	8	7	9	10
20 - 29 years	17	22	23	21
30 - 39 years	14	11	15	28
40 - 49 years	11	8	13	25
50 - 59 years	7	7	9	27
60 - 69 years	3	8	4	7
Over 70 years	2	2	0	2
Total ...	63	67	75	122

34. With the services of a Physiotherapist available it was possible during 1965 to continue some reconstructive surgery, in addition to the usual amputations and bone excisions that an institution such as this requires. Five major tendon transplant operations were carried out during the year.

III. STATIC AND TRAVELLING DISPENSARIES

35. Returns of new patients attending static and travelling dispensaries during the year, and admissions to rest-beds in the static dispensaries are shown below. There was a marked increase in the attendance at the dispensaries during the year.

(a) Static Dispensary

36. The returns for static dispensaries are as follows:—

	No. of Restbeds	New Patients		Admissions	
		1964	1965	1964	1965
First Division					
1. Bau Dispensary	4	26,665	29,287	61	53
2. †Lundu Dispensary	4	9,323	5,147	47	50
3. Serian Dispensary	10	23,330	23,364	66	74
4. Tebakang Dispensary	4	14,440	18,460	58	81
5. Nonok Dispensary	3	6,183	12,072	25	48
6. Simunjan Dispensary	10	16,060	21,232	81	103
7. Muara Tuang Dispensary	5	3,660	6,744	34	48
8. Siburan Dispensary	—	—	12,561	—	23
Second Division					
9. *Pantu Dispensary	6	—	11,456	—	6
10. Lubok Antu Dispensary	4	7,693	8,947	103	180
11. Engkilili Dispensary	5	15,374	13,485	142	269
12. Lingga Dispensary	7	11,290	9,289	92	71
13. Sebuyau Dispensary	7	8,957	6,696	190	78
14. Betong Dispensary	15	12,961	14,929	286	297
15. Spaoh Dispensary	8	11,261	9,960	107	84
16. Debak Dispensary	2	6,498	6,630	96	173
17. Saratok Dispensary	6	16,629	18,021	343	307
18. Kabong Dispensary	10	5,174	5,253	17	33
19. Pusa Dispensary	6	6,226	7,418	53	37
20. *Skrang Dispensary	6	—	3,178	—	10
Third Division					
21. Binatang Dispensary	12	16,836	30,874	62	85
22. Matu Dispensary	6	12,817	8,868	11	17
23. Dalat Dispensary	5	11,037	9,592	105	39
24. Mukah Dispensary	8	7,620	8,288	177	103
25. Balingian Dispensary	6	5,633	4,072	372	238
26. Kanowit Dispensary	10	17,965	19,778	297	124
27. Julau Dispensary	14	12,741	12,775	329	226

*These dispensaries were opened during this year.
†These dispensaries became local hospitals during the year.

	No. of Restbeds	New Patients		Admissions	
		1964	1965	1964	1965
28. Song Dispensary	8	13,971	15,298	174	158
29. Kapit Dispensary	7	23,935	27,482	25	102
30. Belaga Dispensary	8	12,005	11,614	261	182
31. Daro Dispensary	6	10,603	6,942	195	49
32. *Long Linau Dispensary	5	—	1,313	—	22
Fourth Division					
33. †Marudi Dispensary	10	18,392	17,846	445	426
34. Bintulu Dispensary	16	15,774	16,082	399	298
35. Bekenu Dispensary	10	5,196	6,871	145	206
Fifth Division					
36. Lawas Dispensary	10	11,296	12,231	64	159
37. Sundar Dispensary	4	9,438	12,092	88	131
38. *Nanga Medamit Dispensary	10	—	693	—	9
	94	420,599	466,850	4,950	4,576

*These dispensaries were opened during this year.
†These dispensaries became local hospitals during the year.

(b) Travelling Dispensaries

37. The returns for travelling dispensaries are as follows:—

	Base	No. of Patients Treated 1964	1965
First Division			
Travelling Dispensary No. 2	Kuching	9,559	11,549
Road Dispensary	Kuching	30,185	30,088
Tebedu Dispensary	Kuching	299	—
Second Division			
Nil	—	—	—
Third Division			
Travelling Dispensary No. 7	Sarikei	13,701	11,461
Travelling Dispensary No. 8	Kanowit	11,336	9,435
Travelling Dispensary No. 9	Kapit	11,065	11,253
Travelling Dispensary No. 17	Belaga	5,260	6,659
Fourth Division			
Travelling Dispensary No. 11	Tatau	9,854	10,164
Travelling Dispensary No. 12	Bintulu	7,471	8,813
Travelling Dispensary No. 13	Niah	6,765	7,076
Travelling Dispensary No. 14	Marudi	6,661	7,035
Fifth Division			
Travelling Dispensary No. 16	Limbang	11,916	11,060
	Total	124,072	124,593

IV. DENTAL SECTION STATISTICS

38. The total attendances at all the dental clinics were as follows:—

	1963	*1964*	*1965*
Kuching	36,239	43,000	34,061
Sibu	13,433	17,871	20,396
Miri	11,333	12,033	14,044
Simanggang	387	—	4,373
Limbang	—	—	827

39. An analysis of the service provided is shown below:—

	Kuching	*Simanggang*	*Sibu*	*Miri*	*Limbang*	*Total*
Dental Extractions	24,239	5,178	11,826	14,167	973	56,383
Fillings	16,322	1,814	15,109	5,868	305	39,418
Dentures	550	87	366	133	—	1,417
Repair of Dentures	178	6	91	6	—	
Pediodontal Treatment	3,854	385	2,829	1,615	63	8,746
X-rays	576	64	111	881	—	1,632
Orthodontic Appliances	12	3	15	—	—	30
Gold Inlays and Crown Bridges	15	3	10	—	—	28
Metal and Acrylic Splints ...	14	—	3	—	—	17
Post Crowns	—	30	8	—	—	38
Other Treatments	2,969	607	4,682	1,599	35	9,892

V. PATHOLOGICAL LABORATORY SERVICES

40. The following table gives a summary of the examinations carried out at each individual laboratory during 1965:—

Routine Investigations Carried Out (In-Patients)

	CL	*SM*	*RCBM*	*SG*	*SIBU*	*SKEI*	*MIRI*	*TOTAL*
Haematology:								
Haemoglobin ...	13,903	549	546	2,205	7,478	961	6,822	32,464
Erythrocyte count ...	1,197	—	320	23	64	24	196	1,824
Leucocyte count ...	6,243	65	483	1,445	3,925	1,270	1,810	15,241
Differential count ...	5,927	56	54	1,337	3,870	1,033	1,560	13,837
Platelets	423	—	—	10	38	22	72	565
Reticulocytes	766	—	—	55	3	—	86	910
Bleeding time ...	159	—	—	7	60	18	91	335
Coagulation time ...	152	—	—	6	58	19	91	326
Prothrombin time ...	270	—	—	3	52	—	83	408
Osmotic Fragility ...	10	—	—	7	2	—	7	26
L.E. cells	28	—	—	—	—	—	—	28
Bone Marrow... ...	37	—	—	—	2	—	1	40
Serology:								
Price precipitation reaction	10,695	—	—	1,039	3,662	866	1,489	17,751
No. positives ...	472	—	—	28	241	10	4	755
Widal tests	436	—	—	49	682	165	149	1,481
No. positives	78	—	—	15	135	50	59	237
Weil-Felix tests ...	337	—	—	3	218	119	7	684
No. positives	135	—	—	—	34	—	—	169
Direct Coombs' test ...	24	—	—	—	—	—	10	34
No. positives ...	1	—	—	—	—	—	—	1
Indirect Coombs' test	24	—	—	—	4	—	—	28
No. positives ...	4	—	—	—	—	—	—	4
Complement fixation test	395	—	—	—	—	—	—	395
No. positives ...	304	—	—	—	—	—	—	304

	CL	SM	RCBM	SG	SIBU	SKEI	MIRI	TOTAL
Paul Bunnel	60	—	—	—	—	—	—	60
No. positives	5	—	—	—	—	—	—	5
Rose Waaler	86	—	—	—	—	—	—	86
No. positives ...	29	—	—	—	—	—	—	29
Anti-streptolysin O ...	115	—	—	—	—	—	—	115
Pregnancy test ...	157	—	—	—	—	—	—	157
Positives	37	—	—	—	—	—	—	37
Brucella abortus ...	31	—	—	—	—	—	—	31
S.E.L.	14	—	—	—	—	—	—	14
Cerebro-Spinal Fluid								
Price precipitation reaction	44	—	—	—	31	—	11	86
No. Positives	4	—	—	—	3	—	—	7
Mastic curve	34	—	—	—	7	—	4	45
No. Positives	2	—	—	—	—	—	—	2
Blood Group Serology:								
ABO Grouping ...	5,425	—	—	776	4,011	1,065	1,970	13,247
RH Grouping ...	893	—	—	81	96	5	10	1,085
Compatibility tests ...	3,110	—	—	195	1,756	131	933	6,125
Chemical Pathology:								
Blood: Glucose tolerance ...	151	—	—	9	16	3	37	216
Glucose... ...	308	—	—	2	181	125	186	802
Urea	1,838	—	—	101	524	38	551	3,052
Protein	966	—	—	90	298	—	156	1,510
Bilirubin ...	991	—	—	78	312	4	226	1,611
Thymol turbidity ...	461	—	—	57	265	—	91	874
Zinc sulphate turbidity ...	352	—	—	57	267	—	91	767
Bromsulphthalein	43	—	—	26	23	—	—	92
Cholesterol ...	221	—	—	4	52	18	43	338
Creatinine ...	36	—	—	—	4	—	2	42
Fibrinogen ...	—	—	—	—	—	—	5	5
Uric acid ...	79	—	—	7	48	—	35	169
Alkaline phosphatase	832	—	—	57	295	—	101	1,285
Acid phosphatase	29	—	—	—	8	—	5	42
Amylase ...	32	—	—	—	43	—	—	75
Calcium ...	58	—	—	—	30	—	20	108
Sodium ...	472	—	—	—	54	—	—	526
Potassium ...	473	—	—	—	55	—	—	528
Chloride ...	463	—	—	—	54	—	1	518
Carbon dioxide combining power ...	464	—	—	—	54	—	1	519
Inorganic phosphate ...	20	—	—	—	1	—	—	21
Transaminases	910	—	—	36	73	—	22	1,041
Urine: Routine analyses inc.microscopy	6,378	532	123	506	3,090	901	4,109	15,639
Quantitative protein ...	482	—	—	—	—	—	455	937
Others	23	—	—	1	23	—	52	99
Bacteriology:								
Swabs: Throat- ...	926	—	—	456	754	37	481	2,654
C.diphtheriae	7	—	—	—	28	3	27	65
Ear-	574	—	—	13	41	13	93	734
C.diphtheriae	4	—	—	—	—	—	—	4
Nasal-	49	—	—	4	9	—	22	84
C.diphtheriae ...	2	—	—	—	—	—	3	5
Eye-	202	—	—	12	120	9	44	387

	CL	SM	RCBM	SG	SIBU	SKEI	MIRI	TOTAL
N.gonorrhoeae	8	—	—	—	3	2	3	16
Urethral- ...	996	—	—	31	19	3	59	1,108
N.gonorrhoeae	490	—	—	13	2	1	33	539
Vaginal- ...	757	—	—	101	155	15	221	1,249
Abscesses, ulcers and wounds	548	—	—	14	123	8	321	1,014
M. tuberculosis	3	—	—	—	2	—	—	5
Sputum (pyogenic) ...	154	—	—	9	81	101	141	486
Faeces:	2,998	—	—	259	1,226	150	789	5,422
Salm. typhi ...	14	—	—	1	1	4	3	23
Salmonellae (food poisoning)	15	—	—	1	2	—	—	18
Shigella flexner	69	—	—	2	49	5	12	137
Shigella sonnei...	59	—	—	3	33	—	15	110
E. coli (enteropathogenic) ...	28	—	—	—	32	23	2	85
Urine:	1,756	—	—	304	678	—	730	3,468
Coliforms ...	222	—	—	22	26	—	72	342
Klebsiella ...	120	—	—	23	28	1	51	223
Others	214	—	—	48	129	4	88	483
C.S.F.:	284	—	—	7	120	—	39	450
Organisms isolated	16	—	—	—	2	—	1	19
Blood culture:	354	—	—	58	146	42	134	734
Salm. typhi ...	23	—	—	12	8	23	6	72
Others	4	—	—	3	12	2	9	30
Scrapings for M. leprae	14	—	2,892	6	18	2	40	2,972
No. positives ...	3	—	—	—	4	—	7	14
Skin smears	—	—	4,002	—	—	—	—	4,002
Scrapings for fungus ...	15	—	—	1	42	—	3	61
Tuberculosis: (Direct)								
Sputum and gastric lavage	3,720	108	67	881	1,700	568	948	7,992
No. positives ...	754	5	8	66	371	70	71	1,345
Aspiration fluid ...	29	—	—	1	42	—	24	96
No. positives	1	—	—	—	2	—	—	3
C.S.F.	63	—	—	6	135	4	39	247
Urine	25	—	—	4	27	1	37	94
No. positives ...	—	—	—	—	2	—	—	2
Pus	14	—	—	11	29	8	12	74
No. positives ...	2	—	—	—	—	—	—	2
Tuberculosis culture ...	92	—	—	—	—	4	—	96
Sputum & Gastric lavage	2	—	—	—	9	1	6	18
C.S.F.	23	—	—	—	7	1	—	31
Aspiration fluid ...	27	—	—	—	—	1	—	28
No. positives ...	1	—	—	—	—	—	—	1
Dark ground illumination ...	100	—	—	16	48	—	6	170
Positives T.pallida	14	—	—	—	2	—	—	16
Streptococcal grouping ...	450	—	—	16	150	—	167	783
Sensitivity tests ...	2,232	—	—	185	1,093	24	755	4,289
Water samples ...	—	—	—	—	—	—	10	10
Ice-cream samples ...	98	—	—	—	12	—	—	110
Parasitology:								
Blood films - No. examined ...	2,202	446	5	393	519	668	553	4,786
Malaria - p. falciparum	23	—	—	—	3	—	—	26
p.vivax	45	—	—	7	5	—	—	57
p. malariae ...	3	—	—	—	1	—	—	4
Microfilariae	9	—	—	94	11	—	7	121
Faeces - No. examined	8,096	518	81	1,550	3,023	395	3,101	16,764
Protozoa - E.histolytica	90	4	4	26	41	25	38	228
Bal. coli ...	6	—	—	1	1	—	—	8
G.lamblia ...	38	—	—	22	16	7	38	121

	CL	SM	RCBM	SG	SIBU	SKEI	MIRI	TOTAL
Helminths: Hookworm	667	57	18	246	598	—	837	2,423
Ascaria ...	1,024	96	23	608	881	100	798	3,530
Strongloides	72	3	2	—	31	4	35	147
Trichuris ...	975	108	14	490	550	96	895	3,128
Oxyuris ...	19	—	—	1	8	3	1	32
Hymenolepsis	4	—	—	2	1	1	—	8
Faeces - Occult blood ...	1,059	1	—	46	652	27	434	2,219
Others ...	—	—	—	—	—	5	3	8
Miscellaneous:								
Cerebro-spinal fluid	385	—	—	7	180	5	61	638
Fractional test meals ...	61	—	—	25	43	28	6	163
Aspiration fluid	15	—	—	1	35	1	15	67
Seminal assays	11	—	—	—	80	—	3	94

Summary of Routine Laboratory Investigations, 1965 (In-Patient)

Haematology:								
Haemoglobin ...	13,903	549	546	2,205	7,478	961	6,822	32,464
Cell count	13,367	121	857	2,805	7,859	2,327	3,566	30,902
Other tests	3,896	499	—	173	931	95	784	6,378
Blood Transfusion:								
Blood Grouping ...	5,425	—	—	776	4,011	1,065	1,970	13,247
Compatibility tests ...	3,110	—	—	195	1,756	131	933	6,125
Serology:								
Price precipitation reaction	10,695	—	—	1,039	3,662	866	1,489	17,751
Widal tests	436	—	—	49	682	165	149	1,481
Other tests	1,584	—	—	3	218	119	17	1,941
Chemical Pathology:								
Urine tests	6,883	532	123	507	3,113	901	4,616	16,675
Blood tests	16,082	—	—	524	2,657	188	1,573	21,024
Other tests	23	—	—	—	23	52	99	197
Parasitology:								
Blood smears ...	2,202	446	5	393	519	668	553	4,786
Faeces	8,096	518	81	1,550	3,023	395	3,101	16,764
Bacteriology:								
Tuberculosis sputa ...	3,720	108	67	881	1,700	568	948	7,992
Swabs	4,052	—	—	640	1,302	186	1,382	7,562
Faeces	2,998	—	—	259	1,226	150	789	5,422
Urine	1,756	—	—	304	678	—	730	3,468
Blood culture ...	354	—	—	58	146	42	134	734
Scraping for leprae ...	14	—	2,892	6	18	2	40	2,972
Other tests	3,452	113	75	246	1,672	119	1,095	6,772
Total	102,048	2,886	4,646	12,613	42,674	9,000	30,790	240,657

Legend: *CL*=Central Laboratory *SM*=Sarawak Mental Hospital
RCBM=Rajah Charles Brooke Memorial Hospital
SKEI=Sarikei Hospital *SG*=Simanggang Hospital

Routine Investigations Carried Out (Out-Patient)

	HC	SG	SIBU	SKEI	MIRI	TOTAL
HAEMATOLOGY						
Haemoglobin	7,831	2,061	5,966	743	1,344	17,945
Erythrocyte count ...	39	—	52	6	7	104
Leucocyte count	2,376	959	673	800	196	5,004
Differential count ...	1,258	662	658	565	124	3,267
E.S.R.	285	25	1,013	3	23	1,349

	HC	SG	SIBU	SKEI	MIRI	TOTAL
PARASITOLOGY:						
Blood films: Total ...	4,814	4,935	260	231	360	10,600
P. falciparum	6	4	—	—	—	10
P.vivax	7	10	6	—	—	23
P.malariae	1	1	1	—	—	3
Microfilariae	75	2	2	—	—	79
Faeces: Total	12,197	759	7,923	1,139	1,001	23,019
E. histolytica	157	79	82	31	22	371
Bal. coli	4	—	—	—	—	4
Giardia	59	29	17	3	—	108
Hookworm	871	73	1,503	458	151	3,056
Ascaris	2,920	211	2,035	255	159	5,580
Strongyloides	110	6	39	9	4	168
Trichuris	1,582	197	837	143	239	2,998
Oxyuris	15	—	23	46	—	84
Hymenolepsis	22	4	12	6	—	44
Chemical Pathology:						
Urine analyses	21,643	1,979	10,183	2,035	2,063	37,903
Occult blood	288	5	196	14	—	503
Bacteriology:						
Vaginal smear	193	37	580	50	12	872
N. gonorrhoeae	4	9	23	16	2	54
Urethral smear	175	176	418	96	48	913
N. gonorrhoeae	117	118	252	75	33	595
Sputum	4,412	561	7,320	875	3,103	16,271
M. tuberculosis	371	24	574	34	266	1,269
Skin smear	280	9	111	9	17	426
M. leprae	44	1	12	1	—	58
Eye	7	—	—	—	—	7
N. gonorrhoeae	—	—	—	—	—	—
Ear	4	—	—	—	—	4

Return of Routine Laboratory Investigations, 1965 (Out-Patient)

INVESTIGATIONS:	Health Centre	Simanggang	Sibu	Sarikei	Miri	Total
Haematology:						
Haemoglobin	7,831	2,061	5,966	743	1,344	17,945
Cell counts	3,673	1,621	1,383	1,371	327	8,375
Other tests	285	25	1,013	3	23	1,349
Chemical Pathology:						
Urine	21,643	1,979	10,183	2,035	2,063	37,903
Other tests	288	5	196	14	—	503
Parasitology:						
Blood smears	4,814	4,935	260	231	360	10,600
Faeces	12,197	759	7,923	1,139	1,001	23,019
Bacteriology:						
Tuberculosis sputa	4,412	561	7,320	875	3,103	16,271
Swabs	379	213	1,010	146	60	1,808
Scrapings for leprosy	44	1	12	1	—	58
	55,566	12,160	35,266	6,558	8,281	117,831

41. The Central Laboratory in Kuching remains responsible for the preparation of nearly all culture media, reagents, stains and acid citrate dextrose solution for blood collection, which are used in the various laboratories and hospitals in the State. This ensures proper standardisation and checking of reagents and reduces the burden of preparation on the divisional laboratory staff to a very minimum, leaving them more time to devote to bench work. Crystalloid solutions

and water for injection are also prepared in the Central Laboratory. The Central Laboratory also runs a Sterile Syringe Service which serves all the wards of the Kuching General Hospital. The work of the preparation room is summarised as follows:—

Acid Citrate Dextrose for blood collection (120 ml. bottles)	4,263 bottles
Water for Injection	23,767 vials
Crystalloid Solutions, 500 ml.	3,336 bottles
200 ml./250 ml.	764 bottles
Blood Collecting Sets for serology tests	4,476 sets
Culture media	702 litres
Syrings cleaned, assembled and sterilized	119,292
Chemical Reagents prepared	687 litres
Stains and reagents ready for use:—	
Haematology	50 litres
Bacteriology	140 litres
Histo-pathology	148 litres

42. The Central Laboratory is a reference laboratory for problems arising in peripheral laboratories, checks and identifies in detail all intestinal pathogens and performs many tests which it is not possible or feasible to set up in the other laboratories. Increasing use is being made of these facilities offered in the Central Laboratory and this work, not recorded in the principal table above, is summarised here:—

	Kuching	*Simanggang*	*Sibu*	*Miri*	*Total*
Haematology:					
Bone Marrow	34	—	1	2	37
Abnormal haemoglobins ...	11	—	—	4	15
Transfusion reactions	5	—	—	—	5

	Kuching	*Simang-gang*	*Sibu*	*Sarikei*	*Miri*	*Total*
Serology:						
Rose-Waaler	55	1	1	—	29	86
Brucellosis	15	—	—	—	16	31
A.S.O.	101	—	3	—	11	115
Paul-Bunnell	44	—	7	—	9	60
S.E.L.	7	2	3	—	2	14
C.F.T.	164	—	218	7	6	395
Pregnancy tests	132	—	15	—	10	157
Bacteriology:						
Salm. (Food poisoning)	15	1	2	—	—	18
Shigellae	69	2	49	5	12	137
Entero-pathogenic E. coli ...	28	—	32	23	2	85
V. cholerae	—	—	1	—	—	1

43. The Blood Transfusion Service continued to expand. The record of transfusions is as follows (figures in parenthesis are for 1964, given for comparison):—

	Recipients	*Donors*
Kuching	1,479 (1,493)	1,589 (1,563)
Simanggang ...	132 (136)	156 (14)
Sibu	975 (772)	856 (875)
Sarikei	84 (77)	96 (77)
Miri	415 (414)	448 (472)
Total ...	3,085 (2,892)	3,145 (3,128)

44. The number of specimens submitted for histo-pathological investigation showed a decrease compared with the 1964 figure, though the increase in the number of specimens submitted for exfoliative cytology examination, has been maintained. Very few post-mortem examinations are performed and the number of histological examinations of tissues removed at autopsy is, therefore, quite small. Details of the work of the histo-pathological section follow (figures for 1964 are included in parenthesis for comparison):—

(a) *Surgical Pathology:*

Hospital	*No. of Specimens*
Kuching General	361 (346)
Health Centre, Kuching	13 (15)
Simanggang	27 (31)
Lau King Howe, Sibu	233 (371)
Sarikei	3 (3)
Miri	109 (138)
Limbang	4 (4)
Rajah Charles Brooke Memorial ...	3 (—)
Christ Hospital, Kapit	65 (110)
Private practitioners	7 (5)
	825 (1,023)

(b) *Morbid Anatomy:*

Post-mortem dissections (Kuching only) (Hospital 18(11), Medico-legal 31(20))	49 (31)
Post-mortem histology:	
Kuching	65 (45)
Simanggang	0 (—)
Sibu	2 (3)
Miri	2 (1)
Christ Hospital, Kapit	1 (3)
Sarikei	3 (—)
	120 (83)
Kuching General Hospital	87 (58)
Health Centre, Kuching	1 (13)
Lau King Howe Hospital, Sibu ...	1 (5)
Christ Hospital, Kapit	1 (—)
Miri Hospital	2 (—)
Simanggang Hospital	— (—)
	92 (76)

VI. MATERNAL AND CHILD HEALTH SERVICES

45. The following figure gave some indication of the work done at some of the main Maternal and Child Health Centres in the State:—

			Child Health Attendances	*Ante-natal Attendances*	*Post-natal Attendances*	*Total Attendances*
First Division						
Kuching	1959	...	6,411	28,542	4,531	97,094
	1960	...	65,735	33,818	5,127	104,180
	1961	...	71,604	37,699	6,019	115,322
	1962	...	83,042	50,877	7,920	141,849
	1963	...	72,639	44,361	7,618	124,618
	1964	...	74,951	50,241	8,651	133,843
	1965	...	87,981	51,655	8,768	148,404
Second Division						
Simanggang	1964	...	1,216	2,633	14	3,862
	1965	...	1,966	2,792	31	4,789
Third Division						
Sibu	1959	...	36,509	14,239	2,964	53,712
	1960	...	40,001	16,072	3,660	56,073
	1961	...	50,787	15,516	5,648	71,951
	1962	...	40,298	17,802	5,653	63,753
	1963	...	54,517	22,311	7,011	83,839
	1964	...	44,936	22,080	6,477	73,493
	1965	...	40,082	22,518	7,497	70,097
Sarikei	1959	...	1,752	2,407	190	4,349
	1960	...	3,586	4,409	510	8,505
	1961	...	8,025	4,565	578	13,168
	1962	...	7,541	6,530	688	14,759
	1963	...	5,084	6,260	519	11,863
	1964	...	4,839	6,933	521	12,293
	1965	...	5,931	6,242	617	12,790
Fourth Division						
Miri	1963	...	5,724	3,991	—	9,715
	1964	...	9,719	5,087	490	15,296
	1965	...	10,230	5,187	713	16,130
Fifth Division						
Limbang	1964	...	222	284	144	650
	1965	...	208	344	143	695

VII. SPECIFIC PUBLIC HEALTH PROJECTS

A. MALARIA ERADICATION PROJECT

Introduction

46. The climatic conditions contributing to the presence of malaria in Sarawak are to be found in the opening chapter, Part I of this Report, under the heading information.

47. There is no obvious seasonal incidence of malaria and transmission can occur throughout the year. Prior to the commencement of the project it was known that the hilly areas were hyperendemic, while the low-lying plains and

coastal areas, in the absence of nearby hills, were hypoendemic. This difference has been associated with the distribution of the main vector *A. leucosphyrus.*

48. Due to the continuation of terrorist activities, mainly in the border areas of the State, spraying operations have fallen behind schedule in some areas while surveillance measures have had to be curtailed. Naturally, this had had an adverse effect on the progress of the project in the areas so affected.

49. The Malaria Eradication Project is administered from Medical Headquarters, with technical assistance provided by a team of three advisers from the World Health Organisation. Execution of the programme in the Divisions is the responsibility of each Divisional Medical Officer.

50. Due to further progress of the project, it was possible to reduce the staff engaged in it from 216 in 1964 to 189 in 1965. Most were absorbed into other new health projects run by the Department.

51. A training course for twelve investigators was held in Kuching, lasting eight weeks, and a refresher course for thirteen squad leaders was also held in Miri during the year. One Medical Officer and two senior microcopists attended courses sponsored by W.H.O. in Manila, in Epidemiology and Malaria Parasitology respectively.

Operation Areas

52. As a result of the epidemiological picture, and the security conditions prevailing, the State is divided into seven operational areas as shown below:—

	Population	*Area in Sq. km.*
a1 Attack phase—border	78,775	19,492
a2 Attack phase—late stage	113,223	25,667
b1 Consolidation phase—former hyperendemic	237,403	37,255
b2 Consolidation phase—former hypoendemic	24,108	3,432
c1 Maintenance phase—former hyperendemic	23,124	3,328
c2 Maintenance phase—former hypoendemic	234,712	22,924
d Non-malarious urban	131,023	82
	842,368	125,203*

*The balance of 13,023 sq.km. is considered uninhabited.

53. Over a quarter of the population of Sarawak is now classified as living in maintenance phase areas. In these areas no "indigenous" cases of malaria have occurred for three years in spite of intensive surveillance operations. Routine eradication measures have therefore ceased and vigilance against the re-introduction of malaria has been intensified.

54. As a result of the situation along the border area with Indonesian Kalimantan, it was necessary to continue *a1* areas (i.e. attack phase areas) to give minimal protection along the whole border by spraying once yearly.

55. The malaria eradication measures in operation in the various operational areas are shown in Table 1. In brief they consist of the following measures:—

(a) Passive case detection throughout the State.

(b) Active case detection, monthly in *a2* and *b1* areas, two-monthly in *b2* areas, and six-monthly in *c1* areas.

(c) D.D.T. house spraying once yearly in *a1* areas and twice yearly in *a2* areas.

(d) Remedial measures such as focal spraying, mass blood surveys, drug treatment and entomological and epidemiological investigations, wherever a malaria case or focus is detected.

Residual Spraying

56. A summary of spraying operations, by Division, is shown in Table 2. A total population of 291,986 was directly protected by regular residual spraying during the year. A total of 49,009 houses and 10,228 huts was sprayed. 2,035 houses and 911 huts remained unsprayed due to *pantangs* or refusal or absence of the owners.

Entomology

57. Entomology activities included investigations carried out in connection with malaria cases or foci detected, and also monthly observations in five localities in the attack phase, to assess the efficacy of the D.D.T. spraying. Four additional localities were visited monthly for the study of vector biology. Fifteen localities in the consolidation and maintenance phases were also visited quarterly to check the anopheline population after withdrawal of spraying.

58. No signs of insecticidal resistance have been observed.

Surveillance Results

59. Malaria case detection work is carried out in two ways: passive case detection by various government treatment centres such as hospitals, dispensaries, ulu dressers and "home helps" and cerain voluntary agencies, and active case detection carried out by canvassers employed by the S.M.E.P. who are given an itinerary covering all the dwellings and houses in an area. In addition, there are special surveys and investigations. More than half of the cases of malaria detected in Sarawak in 1964 were picked up by Government passive case detection units. The contribution of the voluntary P.C.D. units, and of the active case detection units, was more limited.

60. Cases of malaria detected by the above case detection system are investigated by teams of malaria investigators who carry out epidemiological studies and also administer remedial drugs to all persons with positive blood slides.

61. A summary of surveillance operations and results during 1965 by phase and Divisions, is shown in Table 3. The Annual Parasite Incidence (A.P.I.) is also shown by area, in the chart attached.

62. The majority of cases of malaria originated in attack phase areas, and over half of the total number (792 out of 1,414) in the State during the year came from the First Division. The commonest type of parasite found was *P. vivax*

which occurred throughout the State. *P. malariae* was also found in all Divisions, often in connection with residual foci, but much less frequently than *P. vivax*. *P. falciparum* was confined almost entirely to the First and Second Divisions, and was connected with the importation of the parasite from Kalimantan, and elsewhere outside Sarawak. Few cases of malaria occurred in infants, probably due to the reduced chance of exposure to infection in longhouses.

63. During the year, major foci of malaria occurred in the following places:—

(a) Nakan, mid Baram — (connected with semi nomadic Punan).
(b) Maligam, Tinjar — (possibly connected with logging camps).
(c) Jaong, Kalaka — (residual plasmodium malariae focus).
(d) Merian, Serian — (connected with imported cases from Indonesia).
(e) Bunga, Kuching — (possibly connected with security).
(f) Pakan, Sarikei — (connected with road development).
(g) Krian, Kalaka — (connected with logging camps).
(h) Mid Limbang — (residual plasmodium malariae focus).
(i) Tengoa — (possibly connected with security).

The conditions noted last year, as giving rise to these foci, still prevailed in spite of active measures, which are being intensified.

64. From the above it will be seen that the problems facing the S.M.E.P. mainly originate in:—

(i) the importation of malaria parasites from outside Sarawak, mainly from Kalimantan, Sabah and Brunei;
(ii) problems connected with Indonesian "confrontation";
(iii) development programmes, resettlement projects, logging camps, etc.; and
(iv) semi-nomadic Punans.

However, despite these difficulties, the malaria situation has been kept well under control, and the incidence of frank cases of the disease has been reduced from the pre-operational level of around 40,000 cases per year to 1,414 per year during 1965.

TABLE 1

Malaria Eradication Measures, Sarawak, 1965

Measures	Operational Area						
	a1	*a2*	*b1*	*b2*	*c1*	*c2*	*d*
1. *Regular Measures*							
1.1 Passive case detection	+	+	+	+	+	+	+
1.2 Active case detection	—	monthly	monthly	two-monthly	six-monthly	—	—
1.3 Regular spray	annually	six-monthly	—	—	—	—	—
2. *Remedial Measures*							
2.1 On detection of malaria case							
2.1.1 BF, C.5 & Rad. Tr. to the case	±	+	+	+	+	+	+
2.1.2 BF & Sup. Tr. for pos. family	±	+	+	+	+	+	+
2.1.3 Case follow-up	—	monthly	monthly	two-monthly	monthly	two-monthly	two-monthly
2.1.4 Epid. Blood Survey within 2-mile radius	0%	10%	70%	20%	70%	20%	0%
2.1.5. Ent. Inv.	—	±	+	+	+	+	—
2.1.6 Focal spray	—	±	2-mile radius	50 yards	2-mile radius	50 yards	—
2.2 Additional action to a malaria focus							
2.2.1 Active case detection (monthly)	±	+	+	+	+	+	—
2.2.2 Passive case detection	±	±	+	+	+	+	—
2.2.3 Immediate and quarterly intensive blood survey	±	±	+	+	+	+	—
2.2.4 Prophylactic mass drug admin. to a serious focus	±	±	+	±	+	±	—
2.2.5 Follow-up ent. invest.	±	±	±	±	±	±	—
2.2.6 Focal spray every 3-6 months	±	+	+	+	+	+	—

+ = Obligatory; ± = Optional; — = No action;
BF = Blood film; C.5 = Case investigation (forms); Rad. Tr. = Radical Treatment.
Admin. = Administration

TABLE 2

Summary of Spraying Operations in the Attack Phase Areas, Sarawak, 1965

Division	Area	Cycle	No. of Kpgs.		Houses					Huts		Population		No. of Workers	Man-hours		75% DDT used			Dosage
			Sprayed	Un-Spr'd	Sprayed	Unsprayed		Built	Destroyed	Sprayed	Un-Spr'd	Sprayed Houses	Un-Sprayed Houses		Worked	Travelling	Total (Kgms)	Gms/ House	Gms/ Capita	TG-DDT gms/sqm
						Refused	Other Reasons													
I	a1	I	172	0	5,522	0	223	338	49	680	0	33,334	741	14	3,243	1,411	1,965.3	355.6	59.0	1.86
	a2	I	136	0	5,046	0	285	131	23	810	0	29,816	1,136	12	3,457	825	1,866.7	379.9	62.6	1.91
	a2	II	138	1	5,126	0	304	175	71	1,475	0	30,749	1,272	14	3,213	846	1,873.8	365.5	60.9	1.83
	Subtotal		446	1	15,694	0	812	644	143	2,965	0	93,899	3,149	40	9,931	3,082	5,705.8	1101.0	182.5	—
II	a1	I	150	4	3,135	92	103	0	8	275	44	16,785	831	7	826	639	1,020.4	325.5	60.8	1.72
	a2	I	160	0	3,108	3	172	4	11	1,003	145	16,742	521	7	1,121	868	1,167.9	375.8	67.8	1.86
	a2	II	158	1	3,082	0	246	9	37	652	35	18,215	843	7	822	612	1,064.5	345.4	58.4	1.76
	Subtotal		468	5	9,325	95	521	13	56	1,930	224	51,742	2,195	21	2,769	2,119	3,252.8	1,046.7	187.0	—
III	a1	I	136	0	2,418	2	12	4	3	603	40	15,102	82	14	1,087	1,831	790.4	326.9	52.3	1.65
	a2	I	518	0	8,182	27	220	0	53	1,603	478	48,935	1,098	17	2,888	3,346	2,645.2	323.3	54.1	1.65
	a2	II	539	0	8,610	45	193	133	76	1,410	157	52,715	740	18	3,246	3,663	2,820.0	327.5	53.5	1.69
	Subtotal		1,193	0	19,210	74	425	137	134	3,616	675	116,752	1,920	49	7,221	8,834	6,255.6	977.7	159.9	—
IV	a1	I	60	0	1,056	2	7	40	87	511	1	6,908	0	6	773	759	503.4	476.7	72.8	2.26
	a2	I	31	0	887	3	23	146	6	261	1	5,856	73	3	630	454	370.5	417.7	63.3	2.08
	a2	II	36	0	1,042	3	27	84	11	331	5	6,286	38	7	733	337	456.9	438.5	72.7	2.17
	Subtotal		127	0	2,985	8	57	270	104	1,103	7	19,050	111	16	2,136	1,550	1,330.8	1,332.9	208.8	—
V	a1	I	16	0	262	0	4	30	14	55	0	1,429	0	2	192	54	99.3	379.0	69.5	1.93
	a2	I	48	0	728	0	18	106	28	279	5	4,448	88	3	458	248	307.2	422.0	69.1	2.05
	a2	II	58	0	755	13	8	29	25	280	0	4,666	121	3	531	214	280.4	371.3	60.1	1.81
	Subtotal		122	0	1,745	13	30	165	67	614	5	10,543	209	8	1,181	516	686.9	1,172.3	198.7	—
Total	a1	I	534	4	12,443	96	349	412	161	2,124	85	73,558	1,654	43	6,121	4,694	4,378.8	351.9	59.5	1.81
	a2	I	893	0	17,951	33	718	387	121	3,956	629	105,797	2,916	42	8,554	5,736	6,357.5	354.2	60.1	1.80
	a2	II	921	2	18,615	61	778	430	220	4,148	197	112,631	3,014	49	8,545	5,672	6,495.6	348.9	57.2	1.77
	Grand Total		2,348	6	49,009	190	1,845	1,229	502	10,228	911	291,986	7,584	134	23,220	16,102	17,231.9	1,055.0	176.8	—

TABLE 3

Summary of Surveillance Operations by Phase and Divisions, Sarawak, 1965

	Total Sarawak	By Phase				By Division				
		Attack	Consolidation	Maintenance	Urban	I	II	III	IV	V
Summary:										
Population	842,368	191,998	267,511	251,836	131,023	280,538	123,801	295,849	109,369	32,811
Slides examined	306,728	104,342	157,698	32,921	11,767	79,379	67,964	73,347	62,131	23,907
Slides positive	1,414	1,028	303	51	32	785	178	203	5163	85
Annual Bl. Exam. Rate (%)	36.4	54.4	60.3	12.8	9.0	28.3	54.9	24.8	56.8	72.9
Annual Par. Incidence (%)	1 .68	5.35	1.16	0.20	2.24	2.80	1.44	0.69	1.49	2.59
Case Detection:										
Passive C.D.- sl. ex.	100,048	25,887	36,903	25,856	11,402	31,436	28,711	22,298	13,907	3,696
- sl. pos.	751	547	131	41	32	441	127	122	34	27
Active C.D. - sl. ex	141,645	49,798	88,921	2,701	225	28,440	30,100	42,878	28,362	11,865
- sl. pos.	148	85	62	1	0	38	26	35	33	16
Mass Bl.S. - sl. ex.	26,897	7,937	16,656	2,304	0	8,289	1,744	2,666	10,905	3,293
- sl. pos	157	114	37	6	0	93	6	4	51	10
Epid. S. - sl. ex.	19,993	5,868	12,443	1,617	65	6,510	2,568	3,537	3,623	3,755
- sl. pos.	157	104	53	0	0	93	3	29	10	22
Follow-up - sl. ex.	5,722	4,041	1,545	103	33	2,123	816	1,348	866	660
- sl. pos.	78	59	16	3	0	39	6	13	10	10
Special S. - sl. ex.	12,423	10,811	1,230	340	42	2,581	4,116	620	4,468	638
- sl. pos.	123	119	4	0	0	88	10	0	25	0
Cases by Parasite Species:										
P. Vivax	804	556	192	33	23	379	119	155	123	28
P. falciparum	408	355	41	7	5	356	43	5	1	3
P. malariae	195	110	70	11	4	43	16	43	39	54
Mixed infection	6VF,1VM	6VF,1VM	0	0	0	6VF,1VM	0	0	0	0
Cases by Age:										
Below 1 year	7	7	0	0	0	6	1	0	0	0
1-4 years	199	149	48	2	0	118	8	15	38	20
5-14 years	536	414	111	11	0	312	44	69	62	49
15 years and over	672	458	144	38	32	349	125	119	63	16
Cases by Origin of Infection										
Indigenous	438	303	135	0	0	210	62	46	75	45
Relapsing	67	34	22	7	4	18	13	12	10	14
Imported from outside Sarawak	153	111	23	6	13	86	54	8	4	3
Imported from attack ph., Sarawak	106	47	30	16	13	67	12	12	8	5
Imported from other ph., Sarawak	20	1	13	5	1	5	2	8	2	3
Induced	0	0	0	0	0	0	0	0	0	0
Introduced	61	1	46	14	0	7	17	11	19	7
Unclassified	569	531	34	3	1	392	18	106	45	8

B. TUBERCULOSIS CONTROL PROJECT

I. General

65. This project has already been referred to in general terms in Part II, Section VIII—Epidemic and Endemic Diseases.

II. Statistics

66. The project, which was extended to the Second and Fourth Divisions of the State during 1964, has now begun to operate in rural areas in First and Third Divisions.

Tuberculosis Statistics — 1961 to 1965

	1961	*1962*	*1963*	*1964*	*1965*
1. *Population under control* (running total)	24,228	74,324	130,835	193,798	244,855
2. *Reservoir of infection*					
(1) Number on chemotherapy on December 31st	2,131	3,994	3,393	7,520	10,628
(2) Number of new cases diagnosed during the year	805	1,211	814	1,256	1,262
(3) Number whose treatment was completed during the year	279	380	1,087	1,220	1,113
3. *Tuberculin testing*					
(1) First tests					
(i) Total number of tests carried out during the year	12,277	18,527	28,892	33,255	28,280
(ii) Total number of reactions under 10 mm. in diameter (negative reactors)	5,754	10,562	21,068	22,797	20,669
(iii) Total number of positive reactors ...	6,483	7,571	7,606	8,332	5,818
(iv) Total number not read for various reasons	40	394	218	1,126	1,793
(2) Retests					
(i) Total number of tests carried out during the year	—	—	4,232	3,510	4,545
(ii) Total number of reactions under 10 mm. in diameter (negative reactors)	—	—	1,938	943	1,322
(iii) Total number of positive reactors ...	—	—	2,294	2,426	2,559
(iv) Total number not read for various reasons	—	—	—	142	664
4. *B.C.G. Vaccination*					
(1) Total number vaccinated for the first time	11,826	15,906	29,790	32,020	24,296
(2) Total number revaccinated	—	—	1,896	694	1,079
5. *X-ray examination*					
(1) Total number of miniature exposures	15,359	43,009	32,398	36,127	31,446
(2) Total number of large films used ...	3,250	5,137	5,753	2,793	7,773
(3) Total number of persons X-rayed for the first time	12,402	34,910	26,721	17,700	20,943
6. *Microscopy*					
(1) Total number of sputa examined (including repeats)	10,499	19,135	28,938	16,915	19,950
(2) Total number of positive sputa found (including repeats)	460	1,203	1,603	1,311	1,750

	1961	1962	1963	1964	1965
7. *House-to-House survey*					
(1) Number of houses visited	80	3,445	3,904	6,541	9,013
(2) Population of houses visited	881	36,070	31,909	35,340	47,750
(3) Number of houses visited to tracé contacts	288	117	93	479	577
(4) Number of contacts traced	—	1,116	595	870	1,865
(5) Number of contacts found positive ...	—	50	10	29	99

67. The following explanations are given to clarify the above figures:—

1. *Population under Control*

The figures are cumulative and the total to the end of 1965 is 244,855 persons.

The calculation for each year is obtained by first adding together the total number of persons falling into each of the following groups:—

(a) All positive reactors (first test).

(b) All those given B.C.G. (first vaccination).

(c) All those undergoing X-ray examination for the first time, less any positive reactors examined. The final figure is then obtained by adding the total for the previous year.

2. *Reservoir of infection*

The figures for those on chemotherapy include all cases diagnosed prior to the commencement of the project in an area, and actually under treatment. These old cases are automatically taken over as part of the activities of the project, when operations are extended to any new area. The figures cover all areas in which the project is operating.

3. *Tuberculin testing*

This has been subdivided into first test and retests. Retests are carried out on sample populations to assess the conversion rate after B.C.G. vaccination.

4. *B.C.G. vaccination*

These figures include the vaccination of all new-born infants in the areas covered by the project.

5. *X-ray examination*

These is an increase in 1965 as compared to 1964 due to increased activities and coverage over a large area including the urban areas of the Second and Fourth Divisions.

6. *Microscopy*

The figures do not include examinations carried out in the other laboratories which are not directly connected wth the project, including many positive results. Thus positive smears for new cases diagnosed in an area, prior to the commencement of activities there by the project staff, are not included. This explains the apparent difference in figures between 2(2) and 6(2) in the above table.

7. *House-to-House Survey*

The density per house of population is much lower than that of the previous years. This is due to the peri-urban and rural pattern of living where there is less crowding.

C. RURAL HEALTH IMPROVEMENT SCHEME

General

68. There are twenty-four Rural Health Supervisors in the country, deployed as follows:—

First Division	15
Second Division	4
Third Division	4
Fourth Division	1

Most are based on one *kampong* with another 4-8 nearby to look after, but a small number are now based in new development scheme villages in order to keep a good standard of environmental hygiene in these villages.

69. The duties of a Rural Health Supervisor include frequent visits to *kampongs* where he sets up *kampong* committees for control of sanitation. He undertakes health education on latrines, water supplies, sanitary pig and poultry husbandry, refuse disposal, care of babies and personal hygiene. He suggests and discusses improvements suitable to the economics and geography of the *kampongs* concerned. He is usually well received and is progressively effecting necessary improvements. Medically, he is equipped with a combination of the Home Help and First Aid Kits and acts as malaria passive case detection unit. He liaises with personnel of the local council notably the health inspectors and midwives, with the home-helps, peace corps personnel and the Agricultural Extension Workers in the area. He is in constant contact with the hospital assistant of the static dispensary located in the area.

Training

70. On 30th September, 1965, ten supervisors passed out from the departments Rural Health Improvement Scheme School at Tarat, First Division, all trainees having successfully completed the course.

71. In December, 1965, twelve trainees from all parts of the State were selected for training in 1966. They are:— One from First Division, three from Second Division, three from Third Division, one from Fourth Division and four from Fifth Division.

The Training School comes under the supervision of the First Divisional Medical Organisation. A full time training officer is stationed at Tarat who in addition to classroom teaching is also responsible for the day to day running of the school.

MORBIDITY RETURN FOR IN-PATIENTS TREATED IN THE KUCHING, SIMANGGANG, SIBU, SARIKEI AND MIRI HOSPITALS

International Classification of Diseases (Intermediate List)

			Cases
A	1	Tuberculosis of respiratory system	1,154
A	2	Tuberculosis of meninges and central nervous system	26
A	3	Tuberculosis of intestines, peritoneum, and mesenteric glands	13
A	4	Tuberculosis of bones and joints	55
A	5	Tuberculosis, all other forms	51
A	6	Congenital syphilis	2
A	7	Early syphilis	—
A	8	Tabes dorsalis	—
A	9	General paralysis of the insane	4
A	10	All other syphilis	20
A	11	Gonoccoccal infection	38
A	12	Typhoid fever	246
A	13	Paratyphoid fever and other Salmonella infections	3
A	14	Cholera	15
A	15	Brucellosis (undulant fever)	—
A	16	Dysentery, all forms	603
A	17	Scarlet fever	—
A	18	Streptococcal sore throat	8
A	19	Erysipelas	10
A	20	Septicaemia and pyaemia	21
A	21	Diphtheria	67
A	22	Whooping cough	7
A	23	Meningococcal infections	25
A	24	Plague	—
A	25	Leprosy	15
A	26	Tetanus	25
A	27	Anthrax	—
A	28	Acute poliomyelitis	2
A	29	Acute infectious encephalitis	40
A	30	Late effects of acute poliomyelitis and acute infectious encephalitis	31
A	31	Smallpox	—
A	32	Measles	44
A	33	Yellow fever	—
A	34	Infectious hepatitis	261
A	35	Rabies	—
A	36	Typhus and other rickettsial diseases	64
A	37	Malaria	115
A	38	Schistosomiasis	—
A	39	Hydatid disease	—
A	40	Filariasis	35
A	41	Ankylostomiasis	408

			Cases
A	42	Other diseases due to helminths	1,003
A	43	All other diseases classified as infective and parasitic ...	360
A	44	Malignant neoplasm of buccal cavity and pharynx ...	38
A	45	Malignant neoplasm of oesphagus	24
A	46	Malignant neoplasm of stomach	84
A	47	Malignant neoplasm of intestine, except rectum	8
A	48	Malignant neoplasm of rectum	15
A	49	Malignant neoplasm of larynx	10
A	50	Malignant neoplasm of trachea, bronchus and lung, not specified as secondary	58
A	51	Malignant neoplasm of breast	15
A	52	Malignant neoplasm of cervix uteri	55
A	53	Malignant neoplasm of other and unspecified parts of uterus	27
A	54	Malignant neoplasm of prostate	3
A	55	Malignant neoplasm of skin	17
A	56	Malignant neoplasm of bone and connective tissue ...	38
A	57	Malignant neoplasm of all other and unspecified sites ...	56
A	58	Leukaemia and aleukaemia	17
A	59	Lymphosarcoma and other neoplasms of lymphatic and haematopoietic systems	63
A	60	Benign neoplasm and neoplasms of unspecified nature ...	208
A	61	Non-toxic goitre	66
A	62	Thyrotoxicosis with or without goitre	38
A	63	Diabetes mellitus	109
A	64	Avitaminosis and other deficiency states	96
A	65	Anaemias	315
A	66	Allergic disorders; all other endocrine, metabolic, and blood diseases	346
A	67	Psychoses	220
A	68	Psychoneuroses and disorders of personality	140
A	69	Mental deficiency	12
A	70	Vascular lesions affecting central nervous system	193
A	71	Non-meningococcal meningitis	24
A	72	Multiple sclerosis	10
A	73	Epilepsy	31
A	74	Inflammatory diseases of eye	290
A	75	Cataract	163
A	76	Glaucoma	22
A	77	Otitis media and mastoiditis	74
A	78	All other diseases of the nervous system and sense organs ...	189
A	79	Rheumatic fever	60
A	80	Chronic rheumatic heart disease	99
A	81	Arteriosclerotic and degenerative heart disease	187
A	82	Other diseases of heart	190
A	83	Hypertension with heart disease	41
A	84	Hypertension without mention of heart	177

			Cases
A	85	Diseases of arteries	14
A	86	Other diseases of circulatory system	88
A	87	Acute upper respiratory infections	326
A	88	Influenza	226
A	89	Bronchopneumonia	636
A	91	Primary atypical, other, and unspecified pneumonia	33
A	92	Acute bronchitis	407
A	93	Bronchitis, chronic and unqualified	79
A	94	Hypertrophy of tonsils and adenoids	106
A	95	Empyema and abscess of lung	25
A	96	Pleurisy	17
A	97	All other respiratory diseases	274
A	98	Diseases of teeth and supporting structures	133
A	99	Ulcer of stomach	188
A	100	Ulcer of duodenum	229
A	101	Gastritis and duodenitis	256
A	102	Appendicitis	406
A	103	Intestinal obstruction and hernia	347
A	104	Gastro-enteritis and colitis, except diarrhoea of the newborn	1,467
A	105	Cirrhosis of liver	113
A	106	Cholelithiasis and cholecystitis	102
A	107	Other diseases of digestive system	342
A	108	Acute nephritis	80
A	109	Chronic, other, and unspecified nephritis	73
A	110	Infections of kidney	146
A	111	Calculi of urinary system	203
A	112	Hyperplasia of prostate	56
A	113	Diseases of breast	167
A	114	Other diseases of genito-urinary system	1,104
A	115	Sepsis of pregnancy, childbirth, and the puerperium	47
A	116	Toxaemias of pregnancy and the puerperium	250
A	117	Haemorrhage of pregnancy and childbirth	406
A	118	Abortion without sepsis or toxaemia	1,128
A	119	Abortion with sepsis	78
A	120	Other complications of pregnancy, childbirth, and the puerperium	1,014
A	121	Infections of skin and subcutaneous tissue	1,561
A	122	Arthritis and spondylitis	177
A	123	Muscular rheumatism and rheumatism unspecified	58
A	124	Osteomyelitis and periostitis	59
A	125	Ankylosis and acquired musculoskeletal deformities	10
A	126	All other diseases of skin and musculoskeletal system	153
A	127	Spina bifida and meningocele	—
A	128	Congenital malformations of circulatory system	23
A	129	All other congenital malformations	131
A	130	Birth injuries	—

		Cases
A 131	Postnatal asphyxia and atalectasis	1
A 132	Infections of the newborn	4
A 133	Haemolytic disease of the newborn	5
A 134	All other defined diseases of early infancy	75
A 135	Ill-defined diseases peculiar to early infancy, and immaturity, unqualified	65
A 136	Senility without mention of psychosis	8
A 137	Ill-defined and unknown causes of morbidity and mortality	883
AE 138	Motor vehicle accidents	353
AE 139	Other transport accidents	17
AE 140	Accidental poisoning	94
AE 141	Accidental falls	568
AE 142	Accident caused by machinery	165
AE 143	Accidents caused by fire and explosion of combustible material	116
AE 144	Accidents caused by hot substance, corrosive liquid, steam, and radiation	88
AE 145	Accidents caused by firearms	95
AE 146	Accidental drowning and submersion	18
AE 147	All other accidental causes	1,276
AE 148	Suicide and self-inflicted injury	15
AE 149	Homicide and injury purposely inflicted by other persons (not in war)	82
AE 150	Injury resulting from operations of war	—
AN 138	Fracture of skull	94
AN 139	Fracture of spine and trunk	93
AN 140	Fracture of limbs	696
AN 141	Dislocation without fracture	56
AN 142	Sprains and strains of joints and adjacent muscle	145
AN 143	Head injury (excluding fracture)	233
AN 144	Internal injury of chest, abdomen, and pelvis	24
AN 145	Laceration and open wounds	1,036
AN 146	Superficial injury, contusion and crushing with intact skin surface	314
AN 147	Effects of foreign body entering through orifice	86
AN 148	Burns	236
AN 149	Effects of poisons	125
AN 150	All other unspecified effects of external causes	77
	Total	28,588

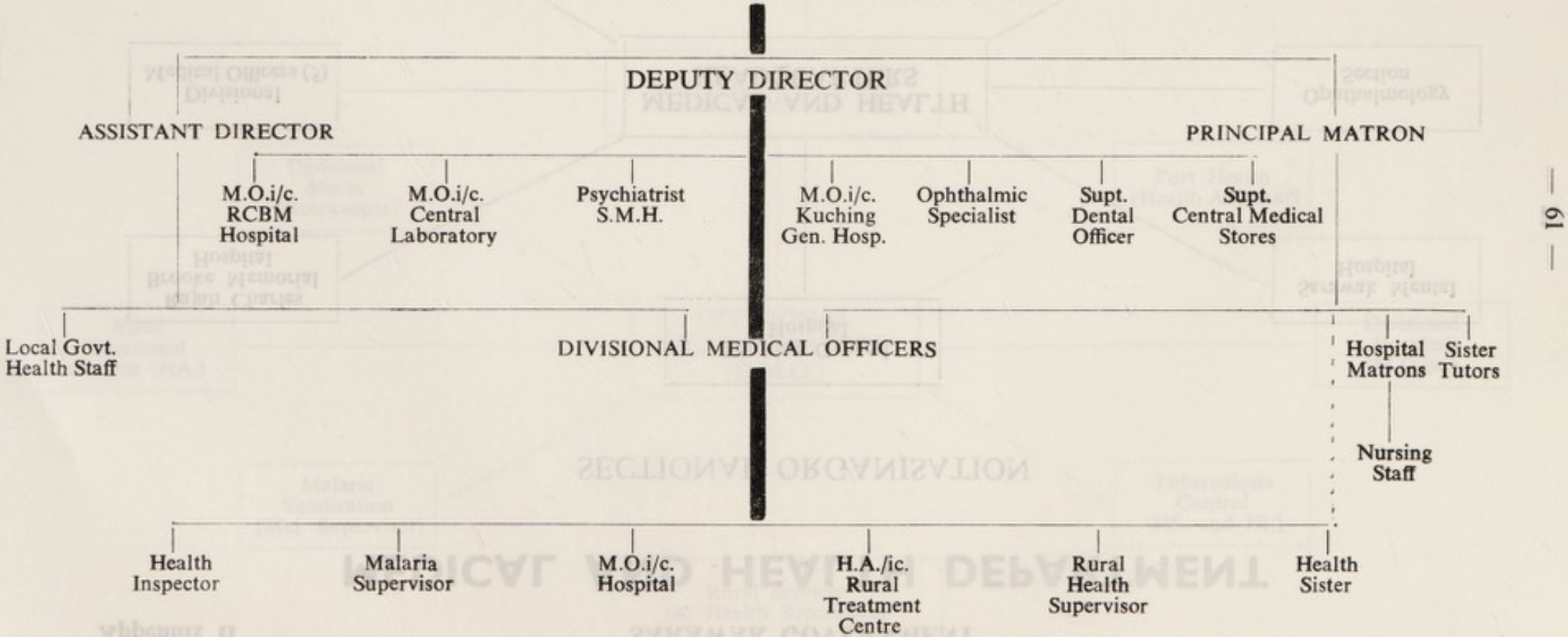
International List Classification Number	*Disease or Condition*	*No. of cases treated in Government Hospitals and Dispensaries*	*No. of cases treated in Non-Government Dispensaries*	*Total*
001–008	Tuberculosis of respiratory system	1,442	207	1,649
010–019	Tuberculosis - all other forms	335	39	374
020–029	Syphilis	49	4	53
030–035	Gonorrhoea	889	73	962
040–042	Typhoid and paratyphoid fevers and other Salmonella infections	131	103	234
045-048	Dysentery, all forms	4,978	415	5,393
055	Diphtheria	71	28	99
056	Whooping Cough	1,336	370	1,706
060	Leprosy...	22	—	22
061	Tetanus	20	19	39
073	Yaws	897	10	907
080–081	Acute Poliomyelitis and its late effects ...	32	—	32
085	Measles	4,947	430	5,377
087	Chickenpox	3,431	347	3,778
089	Mumps	9,010	714	9,724
095	Trachoma	343	11	354
110–117	Malaria	159	15	174
127	Filariasis	1,113	37	1,150
123–130	Worm Infestations	52,841	4,599	57,440
135	Scabies	8,014	782	8,796
036–138	All other diseases classed as infective or parasitic including fevers of unknown origin	28,968	2,414	31,382
140–239	Neoplasms (Tumours)	363	92	455
240–245	Allergic Disorders (asthma, urticaria) ...	14,390	1,607	15,997
250–254	Diseases of Thyroid	550	180	730
260	Diabetes mellitus	213	11	224
280–286	Avitaminosis and other deficiency states ...	25,541	2,009	27,550
290–293	Anaemias	21,871	1,540	23,411
300–318	Mental Disorders	382	21	403
370	Conjunctivitis	14,428	1,069	15,497
371–388	Other diseases of eye	6,712	618	7,330
389	Blindness	33	16	49
390–398	Diseases of ear	13,849	1,293	15,142
341–398	All other diseases of C.N.S. and sense organs	4,933	522	5,455
400–468	Diseases of the Heart and Blood Vessels ...	2,368	359	2,727
470	Common Cold...	79,448	6,981	86,429
473	Tonsillitis, acute	15,572	1,006	16,578
480–483	Influenza	8,174	1,396	9,570
490–493	Pneumonia	2,435	741	3,176
500–502	Bronchitis	31,199	2,583	33,782
471–527	Other respiratory diseases	50,679	1,642	52,321
540–545	Diseases of the stomach	25,225	1,798	27,023
560–561	Hernia	293	29	322
571–572	Diarrhoea and Enteritis	58,124	4,838	62,962
530–578	Other diseases of digestive system	45,478	3,423	48,901
580–587	Diseases of the Liver, Gall-bladder and Pancreas	875	187	1,062
600–609	Diseases of urinary system (excluding Gonorrhoea see 030–035)	7,281	547	7,828
610–637	Diseases of genital organs	2,972	292	3,264

International List Classification Number	*Disease or Condition*	*No. of cases treated in Government Hospitals and Dispensaries*	*No. of cases treated in Non-Government Dispensaries*	*Total*
640–659 & 661–689	Complications of pregnancy	2,902	456	3,358
690–698	Boils, abscesses, cellulitis and other local skin infections	65,590	2,948	68,538
700–716	Other diseases of skin	41,251	2,881	44,132
720–727	Arthritis and Rheumatism	17,664	1,503	19,167
730–744	All other diseases of musculoskeletal system	18,908	1,358	20,266
795	Diseases, causes unknown	19,429	471	19,900
E810–E845	Road accidents	1,200	72	1,272
E850–E858	Water transport	154	9	163
E916	Accidents caused by fire	2,075	290	2,365
E800–E999	Other accidents	29,978	1,851	31,829
E870–E895	Poisonings	305	25	330
	Total ...	751,872	57,281	809,153

Appendix I

SARAWAK GOVERNMENT

MEDICAL AND HEALTH DEPARTMENT

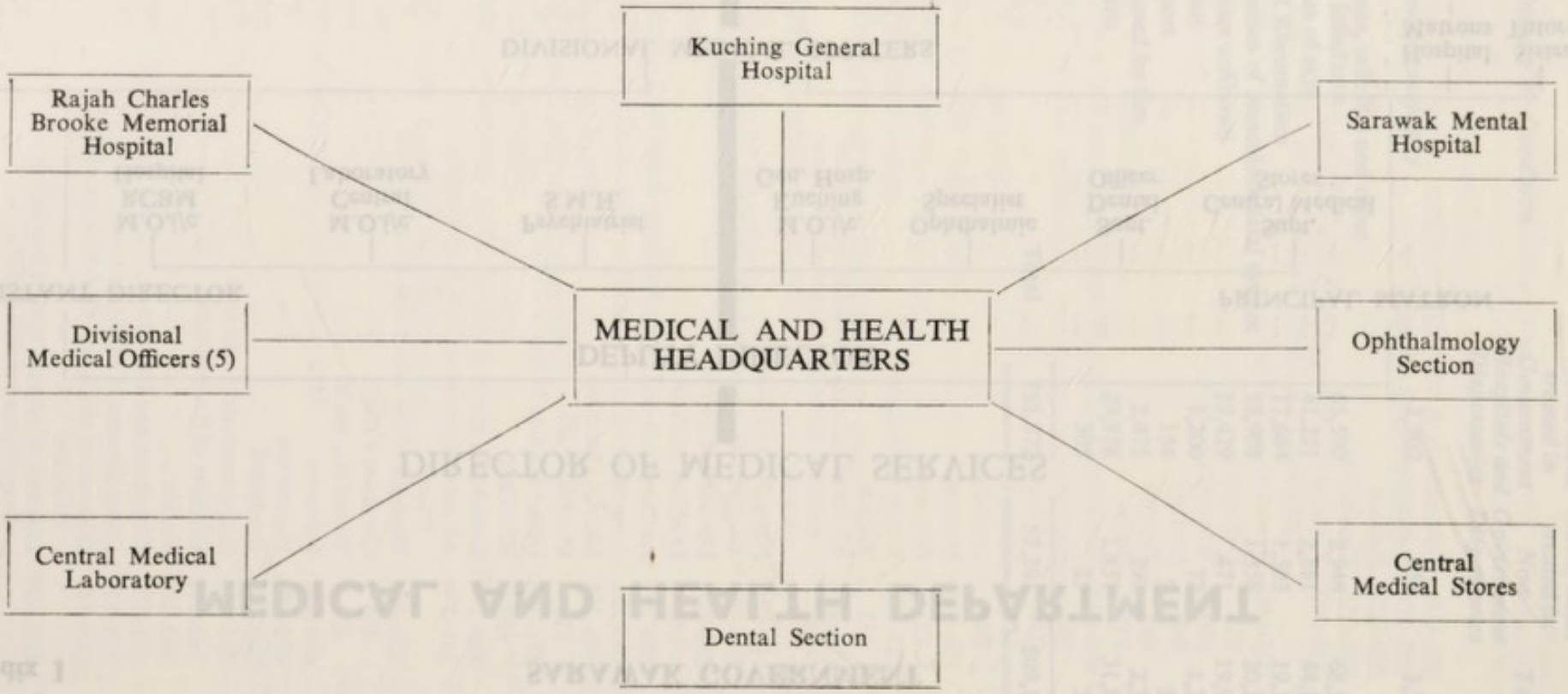


Appendix II

SARAWAK GOVERNMENT

MEDICAL AND HEALTH DEPARTMENT

SECTIONAL ORGANISATION



Appendix III

SARAWAK GOVERNMENT

MEDICAL AND HEALTH DEPARTMENT

DIVISIONAL ORGANISATION