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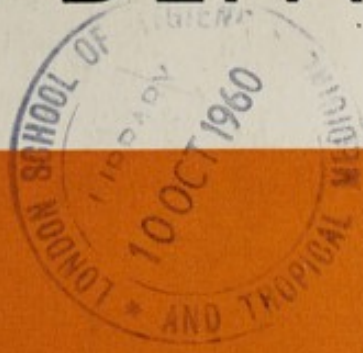


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MEDICAL DEPARTMENT

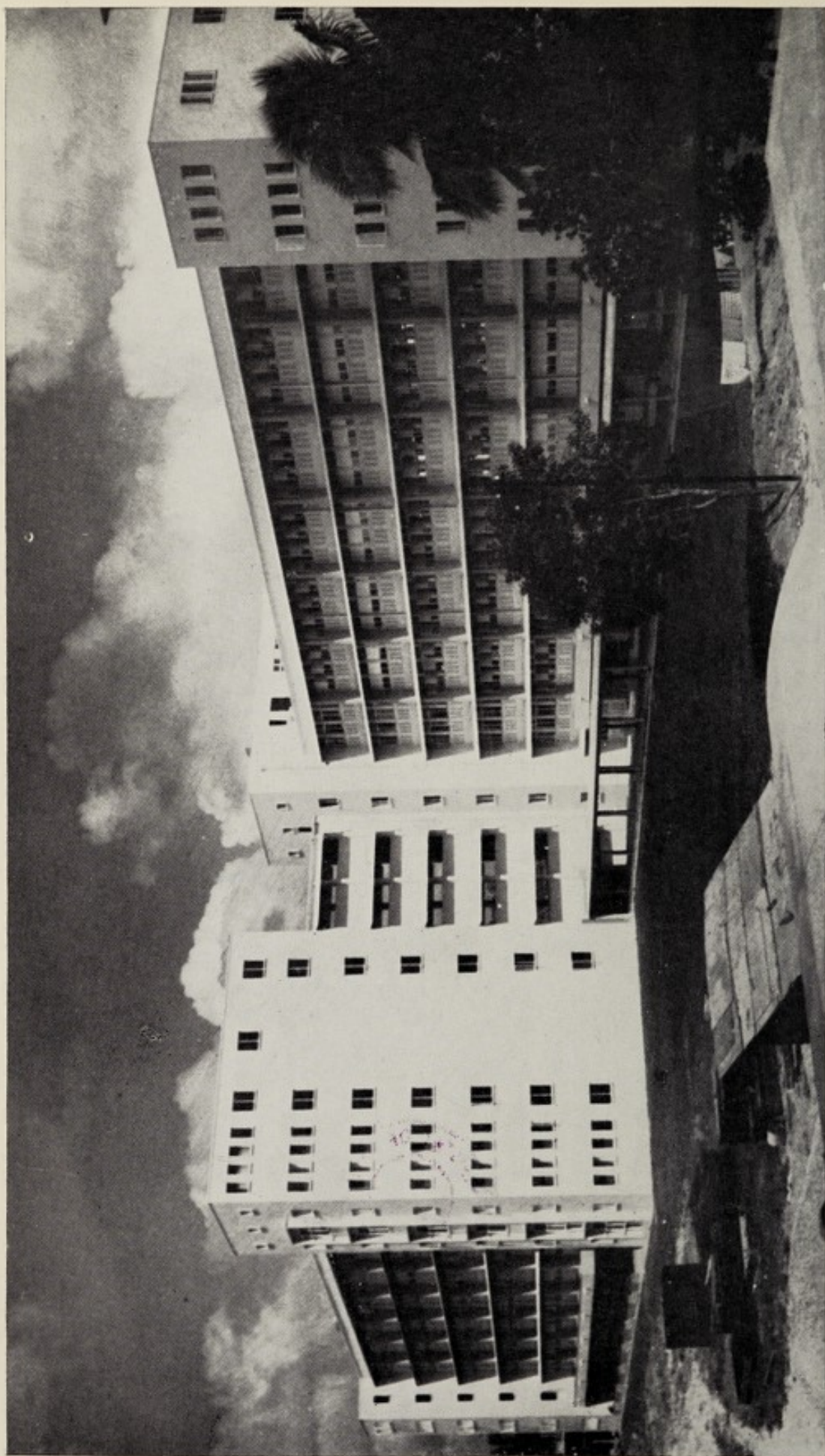


ANNUAL REPORT FOR
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MEDICAL DEPARTMENT



New Ward Block at Tan Tock Seng's Hospital



COLONY OF SINGAPORE



REPORT OF THE MINISTRY OF HEALTH

for the year ended 31st December, 1956

BEING THE ANNUAL REPORT ON THE MEDICAL DEPARTMENT
BY THE DIRECTOR OF MEDICAL SERVICES
FOR THE YEAR
1956

*Presented by the Minister for Health to Legislative Assembly by
Command of His Excellency the Governor
June 1958*




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THE REPORT OF THE DIRECTOR OF MEDICAL SERVICES ON
THE MEDICAL DEPARTMENT

For the Year Ended 31st December, 1956

INTRODUCTION

TO: THE HONOURABLE MR. A. J. BRAGA, M.L.A.
MINISTER FOR HEALTH,
SINGAPORE.

Sir,

I HAVE THE HONOUR to submit a report on the state of the Medical and Health Services in Singapore for the year ended 31st December, 1956.

2. The expansion of preventive and curative services has continued in 1956, but it is still true that the rate of physical development and the rate of training of professional staff, though better than ever before, has not proceeded fast enough to keep pace with an ever-increasing demand. All institutions and centres which are giving personal services have been seriously overcrowded and overworked.

3. The figures in Table I of out-patients and in-patients attending clinics and hospitals demonstrate the ever-increasing need for expansion of our services.

TABLE I

PATIENT ATTENDANCES AT HOSPITALS AND CLINICS

<i>Year</i>	<i>Total In-patients in all Hospitals</i>	<i>Total Out-patient Attendances</i>
1938 ...	35,400	87,447
1947 ...	33,960	530,116
1952 ...	51,883	863,242
1953 ...	58,818	1,111,582
1954 ...	62,972	1,361,366
1955 ...	67,450	1,541,632
1956 ...	75,665	1,963,811

4. To provide for this genuine need it is necessary to press on as quickly as possible with the training of professional staff as well as with the provision of hospital beds and out-patient facilities.

5. The decision to make a change in the conditions of service of expatriate officers might possibly result in loss to the department of a number of valuable officers, and this loss is likely to affect mostly the nursing and ancillary services.

6. Recruitment of and specialised training of local officers in all branches of the service was accelerated during 1956 when fifty-four Departmental Training Awards were offered, mostly for overseas study, as compared with twenty-two offered in 1955. Suitable candidates were found for forty-two of the awards offered.

7. *Medical Officers.*—The total establishment for 1956 was increased by thirty-one posts as compared with 1955; "Housemen" posts were increased by fourteen. For 1957 a further addition of thirty-four posts was approved. During 1956 sixteen medical officers were awarded study leave for post-graduate qualifications and during the same year five local officers obtained specialist qualifications and returned to duty.

8. In 1956 the Dean of the Faculty of Medicine and the Director of Medical Services visited Australia and were successful in obtaining the consent of the Royal Australasian College of Surgeons to hold a primary examination for the Fellowship in Singapore. It was agreed also that a preliminary preparatory Study Course of ten weeks duration would be conducted in Singapore by Australian lecturers and that the first primary examination would be held in 1957. Apart from the usual fees and local costs, all the expenses in connection with this project are to be financed by the Commonwealth of Australia under the Colombo Plan. Under the Colombo Plan, Australia also has promised to receive post-graduate students for training in Australian Hospitals and to arrange for the "secondment" of specialists of Senior Registrar status on short term contracts to Singapore hospitals.

9. *Dental Officers.*—At the end of 1956 there was an establishment of thirty-seven dental officers as compared with twenty-four in 1955. The Chief Dental Officer, the only expatriate officer in this branch of the service, is to leave on retirement during 1957. During 1956 one officer was sent overseas for post-graduate training; another such training award has been approved for 1957.

10. *Nursing Staff.*—At the General Hospital, Sepoy Lines, a new Nurses' Training School and an extension to the Student Nurses' Hostel were opened in September, 1956. The Nursing School is a modern building containing seven classrooms and including a practical demonstration room, a laboratory and air-conditioned lecture hall which can be used for the showing of films. Added to this there are offices for the Sister Tutors and a well equipped cooking and domestic science classroom. The extension to the Student Nurses' Hostel provides for 192 more students, so that we can have now 450 student nurses in residence at one time. At Tan Tock Seng Hospital the old university students' hostel has been converted to accommodate 100 assistant nurses.

11. During 1956 sixty-eight nurses, forty-one assistant nurses and fifty-one midwives were successful in their final examinations and were admitted to the Register. This output from the training schools in Singapore is the highest achieved so far. Nursing recruitment continues to improve both in quality and in quantity, and it is envisaged that in the near future only girls who have sat their School Certificate examination will be accepted for general nursing training. There were, as at December 1956, 465 general nurses in training as compared with 388 in the same month of 1955 and there were 154 assistant nurses as compared with 128 at the same time last year. The rapid expansion of the Department, however, will easily absorb all this extra staff. Thirteen sisters, nurses and hospital assistants returned from overseas study courses and three were sent overseas. Twenty-five study awards will be available in 1957.

12. It was unfortunate that the services of the two W.H.O. Sister Tutors who were assisting in the Nursing School were lost; one left on termination of her contract and one on resignation. Fortunately, however, Miss Chalmers, the Senior W.H.O. Tutor, who was associated with the work during the whole year continued to give excellent assistance in connection with the domiciliary

aftercare and domiciliary midwifery services. The Department also was fortunate in having a three months visit from Miss E. J. Merry General Superintendent, Q.I.D.N., who was sent by W.H.O. to advice on the setting up of a Health Visitor—District Nurse Training Scheme. Her advice was considered and formed the basis on which to plan the training course which it is hoped, will commence in September, 1957. In August 1956, Miss I. Marwick, W.H.O. Psychiatric Nursing Consultant came to visit the Department for three weeks. She submitted a most useful report on the planning of a psychiatric nursing service.

13. *Ancillary Staff.*—At the end of 1956 there were eight Pupil Almoners under training locally; four of them should qualify in 1958. There were four Occupational Therapists, three Physiotherapists and seven Radiographers under training in the United Kingdom. Departmental Awards have been approved for 1957 to send eleven more local officers for training, three in occupational therapy, four in physiotherapy and four in radiography.

14. *Sanitary Inspectors.*—Training for the certificate of the Royal Society for the Promotion of Health has been carried out in Singapore since 1921. During 1956 thirty-one candidates, (five from Singapore, twenty-three from the Federation of Malaya, two from North Borneo and one from Sarawak) received instruction; of the thirty-one candidates, twenty were successful.

15. On 31st December, 1956, the number of registered doctors, dentists, pharmacists, nurses and midwives, was as shown in Table 2.

TABLE 2
REGISTERED MEDICAL PERSONNEL ON 31ST DECEMBER, 1956

	Doctors	Dentists	Pharmacists	Nurses		Midwives	Asst. Nurses
				Male	Female		
Private Practice ..	325	34*	67	10	174	93	28
Government ..	199	33	15	205	439†	131‡	84
University ..	33	9	4	..	..	..	..
City Council ..	19	..	..	20	57	16	..
Provisionally Registered	58	..	..	..	..	..	..
Total ..	634	76	86	235	670	240	112

* There are in addition 247 unqualified dentists in private practice.

† Includes 56 with Rural Board.

‡ Includes 60 with Rural Board.

16. For an estimated population of 1,261,677 the professional care available still is inadequate but the University and the training schools in Singapore now are at full capacity and one can look forward ten years or so to a time when existing shortages will have been supplied.

17. The development building programme of new hospitals and clinics and of extensions to existing institutions continued throughout 1956. In existing hospitals 725 additional beds were provided during the year and the improved staffing position has made it possible to make a real start on the projects for a new District Hospital and for a hospital for the chronic sick.

18. In the **General Hospital** a new Ear, Nose and Throat Unit of 60 beds, with its own consultant out-patient clinic and operating theatres, was completed and brought into use. The bed strength of this hospital on 31st December, 1956 was 1,205 as compared with 957 at the end of 1955. The total number of in-patients treated during the year was 32,324 as compared with 28,222 for the previous year; this represents an increase of 4,102 patients or about 14 per cent. Out-patients at the General Hospital numbered 881,742 as compared with 684,492 in 1955; this represents an increase of about 30 per cent.

19. At the **Kandang Kerbau Hospital** for Women the building programme, which commenced in 1953, still is in progress; tenders have been invited for the remodelling of an existing building to provide a gynaecological department of 130 beds with two twin theatre suites and for the construction of a central sterile supply unit. Work on the matrons' and sisters' quarters is in progress. Although the official bed strength of the Kandang Kerbau Hospital is 316 of which 50 are reserved for gynaecological cases, the number of deliveries in the hospital averaged over 2,000 per month. The total number of admissions was 32,203 as compared with 29,534 in 1955. The hospital provides ante-natal, post-natal and gynaecological clinics together with a clinic for women and children with general ailments. Attendances at these clinics numbered 212,048 in 1956; in 1955 the figure was 161,544. The domiciliary delivery service which was started in August 1955, delivered and cared for 975 cases during 1956.

20. At **Tan Tock Seng's Hospital** for Tuberculosis two new ward blocks providing 408 beds were completed in 1956. This brought the bed strength from 564 up to 972. Work on another two ward blocks and on new kitchens, stores, laundry and central sterile supply unit had already started before the end of the year. The proposed development envisages a total of at least 1,500 beds. The number of in-patients treated in this hospital during 1956 was 2,565 and the number of out-patient attendances was 259,470. In 1955 the figures were 2,175 and 213,436 respectively.

21. Work has started on plans for doubling the size of the **Childrens' Orthopaedic Hospital** at Siglap. At present there are 120 beds which remained full throughout the year and, since September, all the children under treatment have been cases of bone tuberculosis; an extension of this hospital urgently is needed to provide facilities for early treatment of children who may otherwise become permanently crippled.

22. Throughout 1956 there has been a steady increase in the number of patients at the **Woodbridge Hospital** for the mentally sick. Although the hospital is supposed to have accommodation for 1,800 in-patients, the average number constantly is over 2,000; this increase has occurred despite all efforts to limit admissions. Four new ward blocks providing 240 extra beds were nearing completion at the end of the year. The new wards will be unlocked and there is no separating fence between them. Minor but very important alterations to existing buildings have been carried out; in several wards iron bars have been removed and replaced by curtains; other wards will be treated in a similar manner but some will have the bars replaced by wire mesh of wide diameter. Wards are now in three categories, those without barriers which are never

locked, those with minimal window obstructions and which are never locked during the day and those where the windows remain barred and the doors locked.

23. During 1956 two new out-patient and after-care psychiatric clinics were set up enabling us further to implement the policy of treating as many patients as possible as domiciliary cases. As an extension of this policy it is now possible to give advanced treatment (e.g. electrotonics under curarising drugs) in patients' homes. Additional extra mural activities also started in 1956. A prisons psychiatric service with weekly visits to the main prisons, regular visits to patients in the Opium Treatment Centre, a psychiatric service to homes for delinquent boys and girls, for the aged and for the retarded and a close liaison with the Juvenile Court—all these services now are being provided by the psychiatrists from the Woodbridge Hospital.

24. In the **Trafalgar Leprosy Hospital** a new dental clinic and three senior staff quarters were built during the year. On 31st December, 1956 there were 938 in-patients as compared with 889 at the end of 1955. The out-patient division has continued to grow and now over 1,790 smear negative cases are attending regularly; there are 3,809 contacts under observation. This increase in the total number of leprosy patients is encouraging because it is largely a result of early diagnosis through the careful tracing of contacts.

25. Considerable progress in further expansion of facilities at the **Middle Road Hospital** has been made. On the ground floor a waiting hall for out-patients has replaced the old male wards which have been rebuilt in an adjacent inter-connecting building. The old dispensary was demolished and replaced by a much larger room. Two additional consultation rooms for medical officers have been provided and the registration counter has been enlarged and modernised. These alterations will facilitate out-patient care which is the main work at this hospital. In 1956 the total out-patient attendances numbered 185,452 as compared with 184,000 odd in 1955 and 125,150 five years ago.

26. In the **Middleton Hospital** for Infectious Diseases a new 30 bed cubicle ward of modern design was built in 1956 by the City Council and altogether 50 additional beds were provided during the year.

27. General **out-patient services** were expanded by the opening of two new clinics and in all clinics the volume of out-patient work again has increased. The average of monthly attendances at all Government outdoor dispensaries was 74,645 as compared with 66,342 in 1955.

28. Five new **Maternal and Child Health Clinics** were completed during 1956; a few unsuitable centres having been closed, there are now forty-seven Maternal and Child Health Centres in the rural areas of Singapore; in the urban area the City Council have seven such clinics, two of which were newly opened in 1956.

29. In the **Dental Service** additional staff made it possible for considerable expansion to take place. Five new Dental Centres were opened during the year and a second Mobile Dental Clinic came into service. During 1956, 41,435 patients were attended by the Government's Dental Service.

30. One of the most important features of this year's Development Programme has been the success of the economy campaign instituted by the present Government. The cost of building very appreciably has been reduced without any sacrifice of efficiency. The two new ward blocks at Tan Tock Seng's Hospital are an outstanding example of economy with efficiency. These are six-storey ward blocks; the typical ward floor comprises: Nurses Duty

(Control) Room, Doctor's Room, Observation Room, Ward Pantry, Sterilising Room, Sluice Room, Dirty and Clean Linen Rooms, Patients' and Staff Toilets and an open-plan ward of thirty-four beds. The ward is divided into 4-bed and 2-bed units each separated from the others by dwarf walls. Each bed is equipped with a flexible call bell, a three-programme radio point and a light point. Wards are also provided with floor level night lights beside the normal light and ventilating fittings. These Ward Blocks are served by two main passenger/bed lifts and two service lifts. A sputum disposal unit is on the ground floor next to a service lift and on the general service corridor system. In the design, careful thought has been given to through ventilation at bed level, glare elimination and the introduction of pleasant colour schemes, especially in the ceilings, for the benefit of bed-ridden patients. The more economical of aseptic finishes were used in floors and dadoes and these were selected for their colour and hardwearing values. The cost of construction of these two ward blocks, with 408 beds, was \$1 $\frac{3}{4}$ million, or \$4,289 (about £500 sterling) per bed, which is an amazingly low figure for hospital construction. The buildings were designed by the Chief Architect's Division of the Public Works Department and they deserve the highest credit.

31. Of the revised Medical Plan, approved by the Government in 1955, the following projects have been completed or are in process of construction or planning:—

A.—WORK COMPLETED UP TO AND INCLUDING 1956

(a) *General*

- (i) The Base Medical Store and Manufactory.
- (ii) Medical Officer's Quarters, Bukit Panjang.
- (iii) Extensions to Central Medical Store.

(b) *General Hospital*

- (i) Nurses hostel for 250 nurses.
- (ii) Out-patient Division with Casualty Division. Blood Transfusion Service Wing and Pharmacy Block.
- (iii) Remodelling of ward to form Eye Diseases Operating and Out-patient Division.
- (iv) Flats for six Medical Officers.
- (v) New double carriage way entrance roads.
- (vi) Remodelling of Wards 1, 2, 3, 4 and 5.
- (vii) Operating Theatre Block comprising two complete operating wings each with four theatres, built-in equipment and thirty-four beds.
- (viii) New Children's Ward (Mistri Wing) 300 beds.
- (ix) Remodelling of Brebner Sisters' Home to convert to a staff nurses hostel.
- (x) Extension to Dental Clinic—(Half University, half Government).
- (xi) New E.N.T. Unit of 60 beds with theatres and out-patient clinic.
- (xii) Hostel for 200 Student Nurses.
- (xiii) Nurses Training School.
- (xiv) Quarters for 140 Hospital Servants.

- (c) *Kandang Kerbau Hospital (Maternity and Gynæcologic)*
- (i) Four blocks of 4-storey flats for ninety-six servants.
 - (ii) New Hospital Wing for 116 beds together with theatre, labour rooms, dispensary, administrative offices, etc.
 - (iii) Out-patients' Division (Gynæcological, Ante-natal and Post-natal Clinics) and Laboratory Block.
 - (iv) Hostel for seventy-four nurses.
 - (v) Students' Hostel and teaching department. (a joint project with the University).
 - (vi) Laboratory, Museum and Library (a joint project with the University).
- (d) *Woodbridge Hospital (Mental)*
- (i) Medical Store.
 - (ii) X-ray Division.
- (e) *Trafalgar Home (Leprosy)*
- (i) Sixty-nine Chalets for 276 patients.
 - (ii) Two Dormitories for 104 patients.
 - (iii) Matrons' and Sisters' Quarters.
- (f) *Orthopædic Hospital*
- New 40-bedded ward.
- (g) *Tan Tock Seng's Hospital*
- (i) Temporary pre-fab. buildings for Diversional Therapy Unit.
 - (ii) Temporary pre-fab. buildings for Nurses lounge and dining room.
 - (iii) Temporary pre-fab. buildings for Nurses Training School.
 - (iv) Temporary Hostel accommodation for 100 nurses.
 - (v) Conversion of Students' Hostel for 100 nurses.
 - (vi) Two Ward Blocks with 408 beds.
- (h) *Maternal and Child Health Centres*
- (i) Seven large Rural Health Centres at Nee Soon, Holland Road, Thomson Road, Serangoon, Yio Chu Kang, Ama Keng and Buona Vista.
 - (ii) One centre with six beds at Pulau Tekong.
 - (iii) Five Midwife Centres at Bulim, Chua Chu Kang Road 13½ m.s., Kg. Sungei Tengah, Kg. Kuala Loyang, Pulau Ubin and Ponggol.

B.—BUILDINGS UNDER CONSTRUCTION AT END OF 1956

- (a) *General*
- (i) Institute of Health (a joint project with the University and City Council).
 - (ii) New Pathology Institute (a joint project with the University).
- (b) *General Hospital*
- Quarters for 78 sisters.

- (c) *Tan Tock Seng's Hospital*
 - (i) 2 Ward Blocks for 408 beds.
 - (ii) Kitchen, Laundry and Central Sterile Supply.
- (d) *Middle Road Hospital*
Extension to Out-patient Department.
- (e) *Woodbridge Hospital*
 - (i) Ward Blocks, four.
 - (ii) Quarters for male nurses.
 - (iii) Student Nurses' Hostel.
- (f) *Maternal and Child Health Centre, Sembawang.*

C.—DRAWINGS IN PREPARATION AT END OF 1956 FOR CONSTRUCTION TO BEGIN IN 1957

- (a) *General*
 - (i) First District Hospital.
 - (ii) Extensions to Children's Orthopædic Hospital.
 - (iii) Outdoor Dispensary and School Dental Clinic, Pegu Road.
 - (iv) Hospital for Chronic Sick, Thompson Road.
 - (v) Medical Centre, Queenstown.
- (b) *General Hospital*
 - (i) Housemen's Quarters.
 - (ii) Remodelling of Wards 21 and 23.
 - (iii) Alterations to Wards to enlarge Orthopædic Unit.
 - (iv) Alterations to Radiology Department.
 - (v) Garages for ambulances.
- (c) *Kandang Kerbau Hospital*
 - (i) Quarters for Matrons and Sisters.
 - (ii) Flats for twelve medical Officers.
 - (iii) Alterations and additions to existing hospital buildings, i.e. new Gynæcological Department, Central Sterile Supply Department, Kitchen and Stores.
 - (iv) Quarters for 103 Student Assistant Nurses.
- (d) *Tan Tock Seng's Hospital*
 - (i) Central Tuberculosis Culture Laboratory.
 - (ii) Mortuary.
 - (iii) Student Nurses Hostel and Training School.
 - (iv) Quarters for Hospital Servants.
- (e) *Woodbridge Hospital*
 - (i) Staff Quarters.
 - (ii) Mental Deficiency Institution.
- (f) *Rural Maternal and Child Health Centres*
Three main centres at Ulu Bedok, Kim Chuan Road, and Woodlands. Midwife centres at Tanjong Kling, Chia Keng, Bah Soon Pah, Pulau Bukom Ketchil and Bukit Mandai.

32. The **preventive health services** have continued their progressive trend of previous years and their success to some extent is reflected in the figures given in Table 3.

TABLE 3
COMPARATIVE STATISTICAL DATA

	1939	1944	1947	1950	1955	1956
Infant Mortality Rate ..	130.43	285	87.3	82.2	49.67	42.66
Death Rate	21	51	13.3	12.1	8.73	8.11
Estimated Population (mid-year) ..	727,564	860,000	938,144	1,015,453	1,210,534	1,261,677
Birth Rate	45	37	46	46	47.63	48.26
Maternal Mortality Rate	4.0	4.1	2.9	1.9	0.9	0.7

33. Improved recruitment of specialised staff is likely to ensure that even better standards will be achieved in future years. During 1956 all the medical officers employed in the supervision of environmental services were in possession of Diplomas in Public Health and two more were given study leave for the same examination. During the year approval was given for a general increase in the establishment of the Health Branch with particular reference to the Maternal and Child Health and Health Visitor Services. Additional posts were provided for five Health Officers, one Health Education Officer, one Almoner, twenty Health Nurses, fifty Assistant Health Nurses and four Sanitary Inspectors. The World Health Organisation has supplied us with a Public Health Sister Tutor and a post has been made for a Government counterpart; this will provide for the Health Visitors' and Assistant Health Nurses' training courses which are to commence in 1957.

34. Singapore has maintained its record of freedom from all the major quarantinable diseases—plague, cholera, small-pox, yellow fever and typhus. For the fifth year in succession there has been no case of indigenous malaria on the main island. Two cases of malaria were reported from St. John's Island, where passengers from ships from infected ports may be detained; investigations revealed breeding of *A. maculatus* in a nearby island. Incidents of this kind emphasise the importance of constant vigilance in malarial control. Typhoid fever, anterior poliomyelitis and diphtheria are endemic in Singapore although the incidence is not high. It is disappointing that, in spite of sustained and island-wide propaganda, the incidence of diphtheria has shown no improvement. Great efforts were made to persuade mothers to bring their infants for inoculation; because the main excuse for not doing so was that they were too busy, a mobile inoculation team was formed in 1956 to visit those villages and communities distant from any clinic. The Singapore Health Education Council has organised a special propaganda campaign; if this proves unsuccessful serious consideration must be given to legislation making diphtheria inoculation compulsory even as vaccination already is compulsory.

35. The Department's programme for improvement of **village sanitation** which started in 1954 has been continued through 1956. The Rural Board has been most co-operative and the joint effort has proved rewarding. During the year fourteen more Kampongs were attended to and sanitation improved

by the construction of drains, by provision of latrines and by improvement of wells, or by supplies of piped water; during the year sixty-eight standpipes were provided and six wells were constructed in rural villages.

36. In 1956 the Singapore (Paya Lebar) Airport was designated "a sanitary airport" under the terms of Article 19 of the International Sanitary Regulations, 1951. This has followed a sustained mosquito control programme which started at the end of 1954. The controlled area extends to 880 yards from the airport perimeter. The general *Aedes* index has been brought down from 33 per cent in November 1954 when control began to an index of 1.2 per cent at the end of 1956. What is most important is that the *Aedes aegypti* mosquito, which is the natural carrier of yellow fever, has been completely eradicated. No breeding of *Aedes aegypti* has been found since April 1955. The negligible *Aedes* index of 1.2 per cent is accounted for by *Aedes albopictus* which because of its habits, cannot easily be eliminated completely.

37. The Department's interest in occupational health has continued. Routine inspection and supervision of the hygienic aspects of industrial establishments was maintained in 1956. Although there is no legislation to provide compulsive powers, most employers have co-operated and there has been noticeable improvement in conditions of work. During the year four new factories were established in the rural area—a steel mill, a sago factory, an asbestos paste factory and a cooking fat packing establishment.

38. The work of the **Maternal and Child Health Service** has continued to expand, five new clinics were opened in 1956 and there was a steady increase in the number of attendances at all centres. This work among mothers and children is of supreme importance because of its persistent educative value in matters of health. It is indeed a pity that the work is being hampered by lack of staff. The Health Nurses worked under great difficulties throughout 1956 because there were insufficient in number to cope with increasing attendances. It is hoped that it will be possible to tackle the problem of recruitment and training in the immediate future.

39. During 1956 twenty-nine new schools were opened in Singapore, bringing the total to 624. The total school-going population rose from 204,154 to 235,079. The work of the **School Health Section** of this Department correspondingly mounted and there was an overall increase of 30 per cent in the attendance figures at school clinics. As a routine, the School Health Officers examine all new entrants and primary and secondary school leavers and follow up those whose health has been found defective at previous examinations; with the staff at present available it has not been possible to cover all schools but, in 1956, 459 schools were visited for routine examinations. As in the Maternal and Child Health Service, so in the School Health Service the work is seriously handicapped by a grave shortage of Health Nurses and it will be some years before an adequate number can be trained and experienced to provide an efficient service.

40. The **Tuberculosis Section** of the School Health Service has registered considerable progress but much remains to be done. During 1956 work concentrated on the routine X-Ray examination of all new teachers, school servants and school hawkers, and on the detailed examination with tuberculin testing of all children known to have been in contact with cases of tuberculosis or of children with doubtful clinical symptoms and on giving B.C.G. vaccination to the tuberculin negative. 13,394 school children and school staff were X-Rayed. 264 children were found with active primary infection and 26 with chronic disease. One teacher had active primary infection, thirty-eight were found with chronic tuberculous disease (five with positive sputa) and fifty-nine

had healed or quiescent lesions. Of school servants twelve had chronic tuberculosis and twenty-six had healed or quiescent disease. A whole school population is at risk from one infectious case in their midst and these figures therefore show how important it is to ensure an adequate coverage by the School Health Service. It is hoped to expand this work rapidly from 1957 onwards.

41. During 1956 the Government took the wise and far-sighted decision to set up a separate organisation within the Ministry of Health for tuberculosis control so that all existing work of treatment and prevention can be co-ordinated into one co-operative effort towards control of the disease. Now that additional staff and hospital beds are becoming available it will be possible to embark on a planned case-finding programme: a central tuberculosis register will facilitate case-finding and make it easier to ensure that patients are receiving treatment and are being enabled to maintain it.

42. In the **Dental Service** there has been a noteworthy change of policy giving greater effort to the prevention of disease. For the first time funds were provided for Information Services and for propaganda. The Dental Section also undertook dental surveys of about 3,000 school children; the results obtained were coded and when fully tabulated and analysed are expected to produce valuable information. These surveys were carried out primarily in connection with the fluoridation of the Singapore water supply; this commenced in May 1956. It is undoubtedly the most important measure ever taken in Singapore or indeed anywhere in the British Colonies—to deal with the problem of dental disease. The fluoridation scheme is not yet fully developed and only about 10 per cent of the island's water supply is being treated at present, but it is hoped that the system will be completed in 1957.

43. The **Health Education Section** of the Medical Department was most active during 1956. A second Health Education Officer was recruited and, together with a Health Education Sister, was sent overseas for special training. A pilot Health Education project for rural villages was started; village committees were set up to stimulate local initiative and interest. During the year three Health Exhibitions were staged and it is estimated that about 200,000 people visited these exhibitions; 100,000 pamphlets, 12,000 posters and 700 booklets on various health matters were distributed. The Health Education Council of Singapore came into being on 31st August 1956 and straight away planned a Diphtheria Immunisation Campaign for 1957. The Council received an initial grant of \$20,000 from Government.

44. **New legislation** during 1956 included amendments to the Poisons Ordinance and Rules and the coming into force of The Medicines (Advertisement and Sale) Ordinance 1955. This Ordinance prohibits advertisements in connection with certain specified diseases and requires the labelling of all packed medicines with a declaration of formula of contents.

45. The steadily increasing work of the Medical Department demands a proportionate increase in the scope and output of the central **Medical Stores and Manufactory**. Minor building extensions to the pharmaceutical laboratories were constructed in 1957; these extensions provided a new air-conditioned room for tableting machines and a separate laboratory for packing supplies of the standard intravenous transfusion fluids. A new godown also was completed to provide additional storage accommodation. The Pharmaceutical Laboratories increased production appreciably this year in order to meet the hospital's increased requirements. In the stores section the total value of drugs, chemicals and pharmaceuticals issued amounted to \$1,438,000 and the value of dressings, instruments and equipment was \$800,000. This annual turnover represents a 15 per cent increase over the figure for 1955.

46. The **recurrent expenditure** (i.e. excluding Development) on the Department's Medical and Health Services amounted to \$25.5 million in 1956; the comparable figure in 1955 was \$22.4 million. Of the \$25.5 million, \$16.4 million was incurred on "Personal Emoluments" (1.8 million more than in 1955) and 9.1 million on "other Charges" (1.3 million more than in 1955). During 1956 there was a very large addition (over 450) to the number of established posts at all levels. The very great increase in the volume of the Department's work already has been referred to; an increase of only \$3.1 million in departmental expenditure therefore shows that a real degree of economy is being exercised. It must be clearly understood, however, that if adequate medical services are to be provided for the present and rapidly increasing population, a far larger proportion of public funds will have to be allocated to the Ministry of Health. The higher the general standard of education the greater becomes the demand for western medicine; recurrent expenditure on education reached a figure of \$39.5 million in 1956; disproportionate budgeting of this degree is bound to lead in the end to grave problems of supply and demand. In the United Kingdom, although it is not possible to quote figures exactly comparable to those of Singapore, it is quite evident that expenditure on the Health Services is far greater than that on education. The figures for Scotland are better compared with those of Singapore; in Scotland the estimated expenditure for 1955/56 was £38.2 million on public education as compared with £52.2 million on the national health service.

47. It is appropriate that record should be made here of the gratitude of the Ministry for the contribution to the health of Singapore made by many public spirited citizens who have supported and worked for the following voluntary bodies:—

- The Hospitals Diversional Therapy Unit.
- The Rotary Club of Singapore.
- The St. Andrew's Mission Hospital.
- The Singapore Anti-tuberculosis Association.
- The Singapore Association for the Blind.
- The Singapore Association for the Deaf and Dumb.
- The Singapore Branch of the British Red Cross.
- The Singapore Branch, St. John Ambulance Association and Brigade.
- The Singapore Children's Society.
- The Singapore Leprosy Relief Association.

48. The Medical Department is officially represented on the following Councils, Committees and Statutory Boards:—

- Ambulance Committee.
- Blood Transfusion Committee.
- Bursaries Committee.
- Civil Defence Advisory Committee.
- Dental Boards of Singapore and of the Federation.
- Education Committee.
- Health Education Council.
- Hospitals Board.
- Medical Councils of Singapore and of the Federation.
- Medical Advisory Council.

Midwives Board.

Nursing Board.

Official Economic Advisory Committee.

Pharmacy Boards of Singapore and of the Federation.

Public Assistance Board.

Public Health Conference.

Rural Board.

Social Welfare Council.

Staff Committee of Teaching Hospitals.

Tan Tock Seng's Hospital Committee of Management.

T. B. Treatment Allowances Advisory Committee.

University Council.

University Court.

Woodbridge Hospital Visitors.

Venereal Disease Advisory Committee.

49. It is also appropriate to record the Ministry's appreciation of the effort of many private citizens who have given of their time and who have made a valuable contribution to the work of these bodies.

50. Table 4 showing the number of professional officers available for work of the Ministry on 1st January, 1957, is appended for your information.

I have the honour to be,

Sir,

Your obedient servant,

R. H. BLAND, O.B.E., B.A., M.B., B.C.H.,
B.A.O., M.D. (Dublin), M.R.C.P. (Ireland),

*Director of Medical Services,
Singapore.*

TABLE 4

TOTAL NUMBER OF OFFICERS AUTHORISED AND AVAILABLE
1ST JANUARY, 1957

	Estimates 1957	Permanent	Short Contract and Temporary	Gone or going on leave (including study)	Total to be available
<i>A.—Administration</i>					
Director	1	1	..	..	1
Deputy Director ..	1	1	..	..	1
Deputy Secretary (Adminis- tration)	1	1	..	..	1
A.D.M.S. (Health) ..	1	..	..	..	..
A.D.M.S. (Hospitals) ..	1	..	..	..	..
A.D.M.S. (Tuberculosis) ..	1	1	..	..	1
Medical Superintendent, Gen- eral Hospital	1	1	..	..	1
Medical Superintendent, Kan- dang Kerbau Hospital ..	1	1	..	..	1
Medical Superintendent, Tan Tock Seng's Hospital ..	1	..	1	..	1
Medical Superintendent, Woodbridge Hospital ..	1	1	..	..	1
Medical Superintendent, Tra- falgar Home	1	..	..	..	..
Chief Dental Officer ..	1	1	..	..	1
Senior Medical Officer, Social Hygiene	1	..	1	..	1
Superintending Pharmaceuti- cal Chemist	1	1	..	..	1
Senior Pathologist ..	1	1	..	..	1
Senior Health Officer ..	1	1	..	..	1
Deputy Medical Superinten- dent, Woodbridge Hospital	1	1	..	..	1
Medical Officer i/c Out- patients Department ..	1	1	..	..	1
Health Officer i/c Schools ..	1	1	..	..	1
Health Officer i/c Maternal and Child Health Services (Rural)	1	..	1	..	1
Principal Matron ..	1	1	..	..	1

TABLE 4—continued

	Estimates 1957	Permanent	Short Contract and Temporary	Gone or going on leave (including study)	Total to be available
<i>B.—Hospital Division</i>					
Specialist officer, Grade 'E'	6	5	..	..	5
Specialist Officer, Grade 'G'	26	13	8	..	21
Medical Officer including Senior Registrars (excluding Housemen)	199	107	68	38	137
Housemen	50	50	..	..	50
Matrons	13	11	..	1	10
Sisters	193	56	75	14	117
*Nurses	894	667	103	15	755
Hospital Assistants Dispensing Assistants	} 224	186	36	16	206
*Qualified Midwives	74	30	40	..	70
Dental Officers (including Housemen)	36	23	4	3	24
Pharmaceutical Chemists	2	1	..	..	1
Pharmacists	16	16	3	..	13
Laboratory Assistants	80	59	3	2	60
Male Nurses	13	9	..	4	5
<i>C.—Health Division</i>					
Health Officer	35	13	22	..	28
Health Education Officer	2	1	1	..	2
Public Health Engineer	1	1	..	..	1
Supervisor of Public Health Works	1	1	..	..	1
Chief Sanitary Inspector	1	1	..	..	1
Sanitary Inspectors	25	20	..	1	19
Matrons	2	1	1	..	2
Health Sisters	17	6	8	2	12
Health Nurses	83	9	50	1	58
Hospital Assistants	23	14	4	..	18
Qualified Midwives	70	32	28	..	60
Assistant Health Nurses	50	17	..	..	17

* Excludes Assistant Nurses

Table 4 - continued

Year	Number of cases	Number of deaths	Number of recoveries	Number of cases by sex	Number of cases by age
1950	100	10	90	50	50
1951	120	12	108	60	60
1952	150	15	135	75	75
1953	180	18	162	90	90
1954	200	20	180	100	100
1955	220	22	198	110	110
1956	250	25	225	125	125
1957	280	28	252	140	140
1958	300	30	270	150	150
1959	320	32	288	160	160
1960	350	35	315	175	175
1961	380	38	342	190	190
1962	400	40	360	200	200
1963	420	42	378	210	210
1964	450	45	405	225	225
1965	480	48	432	240	240
1966	500	50	450	250	250
1967	520	52	468	260	260
1968	550	55	495	275	275
1969	580	58	522	290	290
1970	600	60	540	300	300
1971	620	62	558	310	310
1972	650	65	585	325	325
1973	680	68	612	340	340
1974	700	70	630	350	350
1975	720	72	648	360	360
1976	750	75	675	375	375
1977	780	78	702	390	390
1978	800	80	720	400	400
1979	820	82	738	410	410
1980	850	85	765	425	425
1981	880	88	792	440	440
1982	900	90	810	450	450
1983	920	92	828	460	460
1984	950	95	855	475	475
1985	980	98	882	490	490
1986	1000	100	900	500	500
1987	1020	102	918	510	510
1988	1050	105	945	525	525
1989	1080	108	972	540	540
1990	1100	110	990	550	550
1991	1120	112	1008	560	560
1992	1150	115	1035	575	575
1993	1180	118	1062	590	590
1994	1200	120	1080	600	600
1995	1220	122	1098	610	610
1996	1250	125	1125	625	625
1997	1280	128	1152	640	640
1998	1300	130	1170	650	650
1999	1320	132	1188	660	660
2000	1350	135	1215	675	675
2001	1380	138	1242	690	690
2002	1400	140	1260	700	700
2003	1420	142	1278	710	710
2004	1450	145	1305	725	725
2005	1480	148	1332	740	740
2006	1500	150	1350	750	750
2007	1520	152	1368	760	760
2008	1550	155	1395	775	775
2009	1580	158	1422	790	790
2010	1600	160	1440	800	800
2011	1620	162	1458	810	810
2012	1650	165	1485	825	825
2013	1680	168	1512	840	840
2014	1700	170	1530	850	850
2015	1720	172	1548	860	860
2016	1750	175	1575	875	875
2017	1780	178	1602	890	890
2018	1800	180	1620	900	900
2019	1820	182	1638	910	910
2020	1850	185	1665	925	925
2021	1880	188	1692	940	940
2022	1900	190	1710	950	950
2023	1920	192	1728	960	960
2024	1950	195	1755	975	975
2025	1980	198	1782	990	990
2026	2000	200	1800	1000	1000
2027	2020	202	1818	1010	1010
2028	2050	205	1845	1025	1025
2029	2080	208	1872	1040	1040
2030	2100	210	1890	1050	1050

PART I

GENERAL

PART I
GENERAL

CHAPTER ONE

LEGISLATION

51. While no new major Ordinances were passed during the year a number of amendments to existing legislation was made. Considerable work in respect of subsidiary legislation was done during the year; the new Poisons Rules were finalised and gazetted; The revision of the Food and Drugs Regulations was in its final stages at the end of the year and the Regulations will be published in 1957.

52. The Medicines (Advertisement and Sales) Ordinance, 1955 (No. 19 of 1955), which was enacted in September 1955, with the principal objects of enforcing disclosure of the formula on labels of packed medicines and preventing advertisements of remedies or treatments for Diabetes, Tuberculosis, Leprosy, Cancer, etc., came into force as from 26th June, 1956.

The Sale of Food and Drugs (Amendment) Ordinance, 1956 (No. 1 of 1956)

53. The object of this amending Ordinance, which came into operation on 24th February 1956, is to revise the provisions for protecting the public against the sale of food containing injurious ingredients and against misdescription of food and drugs and to provide fuller powers to secure that food is not contaminated in the course of preparation, distribution or sale. The definition of "food" has been brought in line with corresponding legislation in countries from which food is imported into Singapore; the definition of "drug" has been extended to include cosmetics, many of which contain harmful chemicals such as lead, carbolic acid and selenium. Other amendments facilitate entry and inspection of places where there is any food or drug intended for sale, facilitate sampling procedure, permit the use of biological and other methods of analysis in addition to chemical and physical methods, and lays down certain conditions under which food and drugs shall be deemed to be adulterated.

The Poisons (Amendment) Ordinance, 1956 (No. 5 of 1956)

54. The principal provisions of this amending Ordinance, which came into operation on 29th March, 1956, are to restrict the sale of medicinal poisons (Part I Poisons) to pharmacists, to permit sales by wholesale under the terms of the shopkeeper's licence for Part II Poisons, to widen the powers of poisons inspectors and to simplify the procedure for the publication and bringing into force of new Poisons Rules.

The Dangerous Drugs (Amendment) Ordinance, 1956 (No. 30 of 1956)

55. The principal provisions of this amending Ordinance, which came into operation on 19th October, 1956, permit the imposition of a fine to a first offender as an alternative to imprisonment in cases where the offender is considered by the court unsuitable for treatment at the Opium Treatment Centre on St. John's Island. It also enables the certificate of a Medical Officer to be given in evidence during the trial.

The Poisons (Amendment) Rules, 1956

56. These rules, which were gazetted on 4th May, 1956 as Notification No. S 145, provide for the new form of shopkeepers poison licence and define the scope of the sales which can be made by a person licensed to sell by wholesale only. Proper provision is made in these amending rules for the purchase of poisons by signed order, and the use by dentists of Third Schedule poisons is limited to Division I dentists. Division II dentists are barred from the use of "prescription only" poisons classified as Schedule IV under the corresponding United Kingdom law.

CHAPTER TWO
STAFF WELFARE

57. The work of the Personnel and Welfare Section in the Government Health Department continued to increase with the expansion of the Cleansing Section during 1956 when more labourers were engaged. The new Code of Wages has been brought into force in the latter part of the year and has facilitated labour administration.

58. During the year there has been a marked decline in the domestic problems officially reported to the Department. This is in large measure due to the growing confidence of the Labour force in the Welfare Section. Most problems were settled on the spot in an amicable manner.

59. The financial position of the Government Health Department Labourers' Co-operative Credit Society Ltd., is given in Table 5.

60. Proposals to expand the Medical Department Interim Council which was set up in 1949 to a full Departmental Joint Council were under consideration. The formation of a Departmental Joint Council will take place early in 1957.

61. Progress has been made in the formation of a Nursing Association. The inaugural meeting has been held (at which the Hon. Minister for Health welcomed the formation of such a professional organisation).

62. The Singapore Medical Services Annual Sports was held in September. Woodbridge Hospital won the Challenge Shield.

63. Concerts, social activities and children's parties were held in various institutions during the year.

TABLE 5

FINANCIAL SUMMARY OF GOVERNMENT HEALTH DEPARTMENT
LABOURERS' CO-OPERATIVE CREDIT SOCIETY LTD.

	Year ended 31st Dec. 1951	Year ended 31st Dec. 1952	Year ended 31st Dec. 1953	Year ended 31st Dec. 1954	Year ended 31st Dec. 1955	Year ended 31st Dec. 1956
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Post Office Savings Bank ..	12,657 28	7,932 08	8,130 33	8,130 33	18,130 33	26 79
Chartered Bank ..	8,958 16	12,890 74	11,381 03	24,026 23	4,085 84	5,119 35
Cash in transit ..	1,862 03	2,519 34	2,778 30	2,927 96	1,964 85	1,815 35
Investments ..	31,506 25	40,506 25	40,506 25	40,506 25	50,256 25	50,256 25
Loans outstanding	4,878 00	7,472 00	11,180 00	15,382 00	15,172 00	9,756 00
Total Credit Balance	59,861 72	71,320 41	73,975 91	90,972 77	89,609 27	66,773 74
Membership ..	420	396	417	452	301	211
Total Staff eligible	721	679	711	795	1,065	1,097

CHAPTER THREE

VITAL STATISTICS

64. The present population for the mid-year 1956 is based on the actual 1947 census figure plus migrational surplus plus excess births over deaths since then. On this calculation the estimate is 1,261,677.

65. It was mentioned in the last Report that indications have appeared during the work of the Diagnostic Survey Team and from other sources that the present figure of a little over 1,260,000 is almost certainly substantially lower than the actual population. Provisional figures from the Census count in 1957 indicate that the population estimate represents an underestimate of some 20 per cent.

66. Details of the population by race since 1911 are given in Table 6.

TABLE 6
POPULATION OF SINGAPORE, 1911-56

Year	Chinese	Malay- sians	Indians and Pakis- tanis	Euro- peans	Eura sians	Others	Total
1911 (Census) ..	219,577	41,806	27,755	5,711	4,671	3,801	303,321
1921 (Census) ..	315,151	53,595	32,314	6,145	5,346	5,717	418,358
1931 (Census) ..	418,640	65,014	50,811	8,082	6,903	8,295	557,745
1947 (Census) ..	729,473	113,803	68,967	9,279	9,110	7,512	938,144
1948 (Mid-year) ..	749,591	116,364	69,474	9,660	9,354	7,599	962,042
1949 (Mid-year) ..	761,962	119,623	70,749	10,923	9,716	7,845	980,818
1950 (Mid-year) ..	789,160	123,624	72,467	11,504	10,093	8,605	1,015,453
1951 (Mid-year) ..	806,690	127,063	75,601	12,785	10,451	9,343	1,041,933
1952 (Mid-year) ..	830,079	131,664	80,096	14,565	10,820	9,931	1,077,155
1953 (Mid-year) ..	859,201	136,887	87,213	15,811	11,130	10,535	1,120,777
1954 (Mid-year) ..	891,550	142,843	91,012	17,122	11,402	11,200	1,165,129
1955 (Mid-year) ..	926,453	148,102	94,290	18,202	11,684	11,803	1,210,534
1956 (Mid-year) ..	965,274	153,962	98,258	19,416	11,994	12,773	1,261,677

67. Population trends, largely due to natural increase, show a rising linear trend. In the 20-year period from 1911-1931 the increase was some 83 per cent when the cause was due to large-scale immigration from India and China. Since 1931 the overall increase is about 126 per cent due in the main to an increasing natural (births over deaths) cause. This natural increase has become phenomenal over the post-war period and has in fact been masked over recent years by a balance of emigration over immigration.

68. The ratio of females to males in 1931 was 584 to 1,000. At the 1947 Census it was 819 to 1,000. The ratio of females to males in 1951 was 862 to 1,000, in 1952 was 873 to 1,000, in 1953 was 877 to 1,000, in 1954 was 887 to 1,000, in 1955 was 895 to 1,000. The ratio of females to males in 1956 was 902 to 1,000.

69. The approaching parity of sexes, the intensive overcrowding, the very young ages at which women marry and the increase in the young state of the population are the factors of real significance in present and future population trends.

70. It will be seen from Table 7 that while the ages of mothers range from twelve years to more than forty-five years, no less than 11,878 babies out of a total of 60,892, i.e. more than 20 per cent were born to women under 21 years. What effect this must have in contributing to our comparatively high infant mortality rate as judged by the standards of more developed territories, it is difficult to assess. Indeed the fact that the Malaysians who have the highest infant mortality rate (95.46 as against 42.66 for all races, 24.86 for Europeans, 33.97 for Chinese, 34.27 for Indians) gave birth to 3,323 out of a total of 9,431 deliveries; this represents more than 35 per cent in the 12-21 age group. This would suggest that in this age-group of near adolescence and near childhood pregnancy carries an added risk of death to the infant.

71. The annual increase in the number of births over the post-war period is continuing at a phenomenal rate. The 1956 figure of 60,892 constitutes an all-time record.

72. The crude birth rate is 48.26 The trend in the birth rate appears to be stabilising around 48 for the last few years. In spite of our improving standards of education, the promotion of education including adult education, and the fostering of a responsible attitude of parents to their children, these factors do not appear to have produced any appreciable effect on the high birth rate. Those factors which may be expected to promote family limitation are probably more than counter-balanced by the intense overcrowding and the approaching parity of the sexes.

TABLE 7
BIRTHS BY SEX, RACE AND MOTHER'S AGES, 1956

Mother's Ages in years	European		Eurasian		Chinese		Malaysians		Indians and Pakistans		Others		Total	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
12 years	1	..	..	..	..	..	..	..	..	1
13 years	2	..	..	..	..	..	3
14 years	4	..	..	..	..	..	9
15 years	30	..	..	..	..	..	57
16 years	128	..	..	..	..	..	240
17 years	170	..	..	..	..	..	426
18 years	299	..	..	..	..	..	794
19 years	312	..	..	..	..	..	1,056
20 years	449	..	..	..	..	..	1,705
21 years	321	..	..	..	..	..	1,600
22 years	339	..	..	..	..	..	1,815
23 years	269	..	..	..	..	..	1,900
24 years	234	..	..	..	..	..	1,926
25 years	335	..	..	..	..	..	2,022
26 years	271	..	..	..	..	..	2,045
27 years	201	..	..	..	..	..	1,754
28 years	333	..	..	..	..	..	1,876
29 years	141	..	..	..	..	..	1,386
30 years	254	..	..	..	..	..	1,509
<i>Carried forward</i>	340	361	139	123	15,846	14,885	4,102	3,794	1,746	1,752	203	187	22,376	21,102

TABLE 7—continued

Mother's Ages in years	European		Eurasian		Chinese		Malaysians		Indians and Pakistanis		Others		Total	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<i>Brought forward</i>	340	361	139	123	15,846	14,885	4,102	3,794	1,746	1,752	203	187	22,376	21,102
31 years	22	16	7	6	856	749	83	113	46	47	14	8	1,028	939
32 years	22	25	9	5	944	860	151	145	66	60	8	9	1,200	1,104
33 years	21	24	10	8	788	682	103	81	44	35	4	6	970	836
34 years	13	18	7	5	740	672	76	52	37	39	6	6	879	791
35 years	14	17	8	4	723	655	126	112	56	51	4	5	931	844
36 years	18	12	6	7	682	577	68	61	24	30	5	7	803	694
37 years	6	4	6	2	600	553	31	42	21	22	3	3	667	626
38 years	6	5	6	4	571	527	51	56	15	20	4	3	653	615
39 years	3	6	5	2	398	394	18	22	13	10	4	3	438	437
40 years	7	4	..	1	438	391	23	25	4	6	1	..	473	427
41 years	4	2	..	3	305	300	5	7	6	2	..	1	320	315
42 years	2	6	..	1	217	264	12	14	4	4	..	..	237	289
43 years	1	..	..	..	174	155	8	7	1	2	1	..	185	164
44 years	1	..	..	..	113	108	2	6	2	2	..	..	118	116
45 years	..	..	..	..	70	74	7	8	..	..	..	..	77	82
Over 45 years	..	..	..	..	67	49	7	6	..	2	..	..	74	57
Unknown	..	..	..	..	4	1	3	4	..	1	5	6	13	12
Total	480	500	204	171	23,536	21,896	4,876	4,555	2,086	2,084	260	244	31,442	29,450

TABLE 8
BIRTHS AND BIRTH RATES

Racial Group	1931		1947		1952		1953		1954		1955		1956	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Chinese ..	15,993	37.85	33,629	46.20	39,088	47.09	41,653	48.48	42,780	47.98	43,069	46.30	45,225	46.85
Malaysians ..	2,862	43.69	5,473	47.73	6,858	52.09	7,276	53.15	8,143	57.10	8,336	56.35	8,999	58.45
Indians and Pakistans ..	1,020	19.64	3,087	43.30	3,672	45.84	3,956	45.36	4,230	46.48	4,431	47.08	4,678	47.61
Europeans ..	169	20.55	312	35.79	757	51.97	853	53.95	889	51.92	1,033	56.75	1,039	53.51
Eurasians ..	199	28.53	359	39.84	359	33.18	325	29.20	334	29.29	358	30.90	362	30.18
Others ..	227	29.09	185	28.27	460	46.32	499	47.37	555	49.55	585	49.90	589	46.11
Unknown ..	..	..	..	..	2	..	..	..	..	..	..	..	..	..
Total ..	20,470	36.37	43,045	45.89	51,196	47.53	54,562	48.68	56,931	48.86	57,812	47.63	60,892	48.26
Males ..	10,753	..	22,152	..	26,342	..	28,179	..	29,514	..	29,648	..	31,442	..
Females ..	9,717	..	20,893	..	24,854	..	26,383	..	27,416	..	28,164	..	29,450	..
Unknown ..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Total ..	20,470	..	43,045	..	51,196	..	54,562	..	56,931	..	57,812	..	60,892	..
Male births per 100 births ..	..	52.04	..	51.23	..	51.45	..	51.65	..	51.84	..	51.28	..	51.64

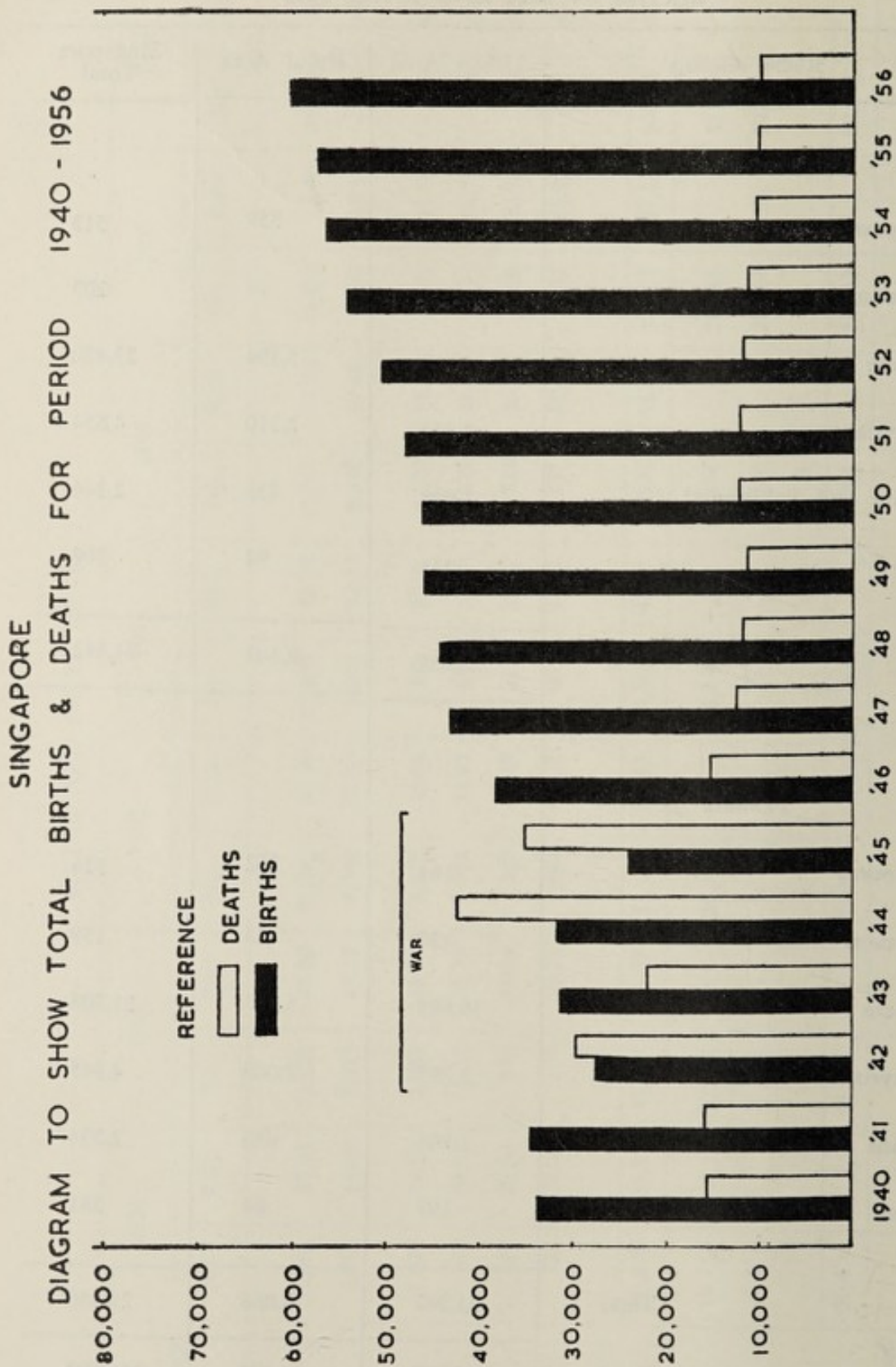
TABLE 9
BIRTHS BY SEX AND RACE, 1956

Racial Group	Urban Area	Rural Area	Singapore Total
<i>Males</i>			
Europeans	154	359	513
Eurasians	189	14	203
Chinese	18,026	5,394	23,420
Malaysians	2,444	2,210	4,654
Indians and Pakistanis ...	1,908	436	2,344
Others	214	94	308
Total ...	22,935	8,507	31,442
<i>Females</i>			
Europeans	164	362	526
Eurasians	134	25	159
Chinese	16,698	5,107	21,805
Malaysians	2,285	2,060	4,345
Indians and Pakistanis ...	1,904	430	2,334
Others	197	84	281
Total ...	21,382	8,068	29,450
Grand Total ...	*44,317	†16,575	‡60,892

* Includes 1 Chinese of unknown sex.

† Includes 2 Chinese and 2 Malaysians of unknown sex.

‡ Includes 5 of unknown sex.



SINGAPORE
TREND OF CRUDE BIRTH AND DEATH RATES: 1920 ONWARDS

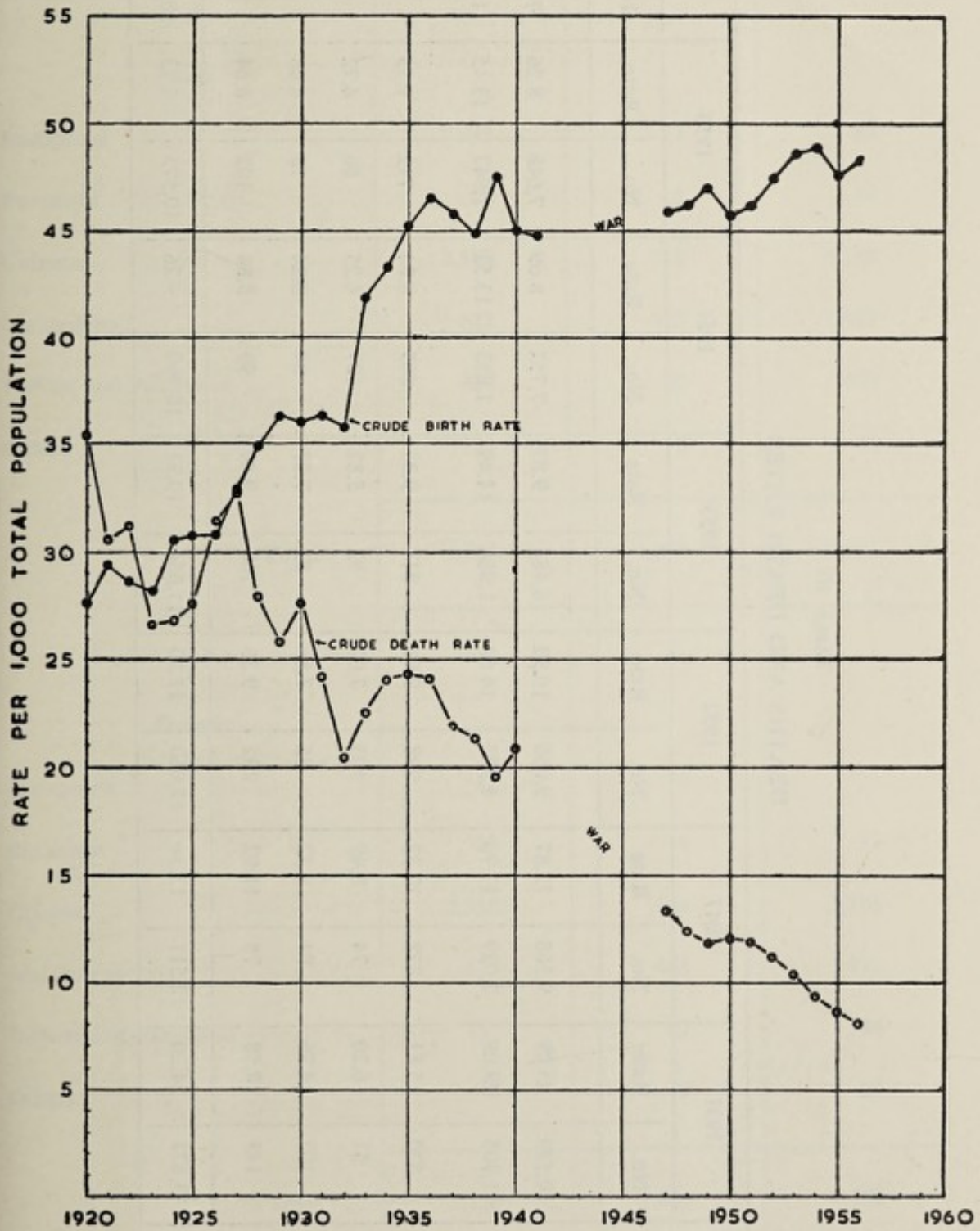


TABLE 10
DEATHS AND DEATH RATES

Racial Group	1931		1947		1952		1953		1954		1955		1956	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Chinese ..	10,599	25.09	9,368	12.87	9,050	10.90	8,484	9.87	7,752	8.69	7,648	8.26	7,404	7.67
Malaysians ..	1,905	29.08	2,029	17.70	1,922	14.60	1,984	14.49	1,933	13.53	1,947	13.15	1,930	12.54
Indians and Pakistans ..	820	15.81	878	12.32	798	9.96	814	9.33	805	8.84	712	7.55	694	7.06
Europeans ..	51	6.20	74	8.49	103	7.07	92	5.82	107	6.25	86	4.72	81	4.17
Eurasians ..	103	14.76	84	9.32	85	7.86	82	7.37	94	8.24	78	6.68	69	5.75
Others ..	145	18.58	78	11.92	102	9.36	100	9.49	99	8.84	102	8.64	60	4.70
Total ..	13,623	24.20	12,511	13.34	12,060	11.20	11,556	10.31	10,790	9.26	10,573	8.73	10,238	8.11

TABLE 11
DEATHS BY SEX AND RACE, 1956

Racial Group	Urban Area	Rural Area	Singapore Total
<i>Males</i>			
Europeans	33	27	60
Eurasians	29	5	34
Chinese	3,550	748	4,298
Malaysians	622	435	1,057
Indians and Pakistanis ..	446	50	496
Others	31	5	36
Total ..	4,711	1,270	5,981
<i>Females</i>			
Europeans	12	9	21
Eurasians	29	6	35
Chinese	2,538	568	3,106
Malaysians	470	403	873
Indians and Pakistanis ..	157	41	198
Others	14	9	23
Total ..	3,220	1,036	4,256
Grand Total ..	7,932*	2,306	10,238*

* Includes 1 of unknown sex (others).

TABLE 12

DEATHS BY AGE-GROUP, REGISTRATION AREA AND SEX, 1956

Age Group	URBAN AREA			RURAL AREA			SINGAPORE TOTAL		
	Male	Female	Male and Female	Male	Female	Male and Female	Male	Female	Male and Female
Under 1 day	181	115	296	28	12	40	209	127	336
1 day and under 2 days ..	87	42	129	24	10	34	111	52	163
2 days and under 3 days ..	46	41	87	7	8	15	53	49	102
3 days and under 4 days ..	42	27	69	9	5	14	51	32	83
4 days and under 5 days ..	30	19	49	12	7	19	42	26	68
5 days and under 6 days ..	29	17	46	3	6	9	32	23	55
6 days and under 7 days ..	24	12	36	2	1	3	26	13	39
7 days and under 14 days ..	78	34	112	14	18	32	92	52	144
14 days and under 21 days ..	51	30	81	14	4	18	65	34	99
21 days and under 28 days ..	40	14	54	14	5	19	54	19	73
NEO-NATAL DEATHS ..	608	351	959	127	76	203	735	427	1,162
28 days and under 2 months ..	124	77	202†	48	39	87	172	116	289
2 months and under 3 months ..	77	57	134	48	32	80	125	89	214
3 months and under 4 months ..	57	46	103	25	20	45	82	66	148
4 months and under 5 months ..	50	43	93	17	12	29	67	55	122
5 months and under 6 months ..	41	36	77	29	17	46	70	53	123
6 months and under 7 months ..	48	42	90	16	22	38	64	64	128
7 months and under 8 months ..	32	29	61	15	7	22	47	36	83
8 months and under 9 months ..	34	43	77	18	14	32	52	57	109
9 months and under 10 months ..	28	23	51	15	8	23	43	31	74
10 months and under 11 months ..	24	30	54	8	10	18	32	40	72
11 months and under 1 year ..	17	21	38	13	11	24	30	32	62
Infant Mortality* ..	1,140	798	1,939†	379	268	647	1,519	1,066	2,586
Under 1 year	1,140	798	1,939	379	268	647	1,519	1,066	2,586
1 year and under 2 years ..	167	155	322	59	96	155	226	251	477
2 years and under 3 years ..	92	97	189	30	26	56	122	123	245
3 years and under 4 years ..	64	79	143	17	18	35	81	97	178
4 years and under 5 years ..	33	34	67	12	16	28	45	50	95
5 years and under 10 years ..	111	96	207	24	28	52	135	124	259
10 years and under 15 years ..	58	33	91	9	8	17	67	41	108
15 years and under 20 years ..	83	47	130	14	11	25	97	58	155
20 years and under 25 years ..	86	68	154	22	18	40	108	86	194
25 years and under 30 years ..	92	53	145	19	20	39	111	73	184
30 years and under 35 years ..	109	73	182	17	18	35	126	91	217
35 years and under 40 years ..	184	84	268	22	23	45	206	107	313
40 years and under 45 years ..	238	121	359	30	20	50	268	141	409
45 years and under 50 years ..	315	146	461	52	37	89	367	183	550
50 years and under 55 years ..	419	182	601	71	36	107	490	218	708
55 years and under 60 years ..	429	199	628	112	57	169	541	256	797
60 years and under 65 years ..	395	210	605	97	49	146	492	259	751
65 years and under 70 years ..	306	206	512	107	71	178	413	277	690
70 years and under 75 years ..	181	191	372	83	74	157	264	265	529
75 years and under 80 years ..	122	173	295	57	54	111	179	227	406
80 years and under 85 years ..	50	106	156	20	44	64	70	150	220
85 years and over	31	69	100	17	44	61	48	113	161
Age unknown	6	—	6	—	—	—	6	—	6
Total all ages ..	4,711	3,220	7,932†	1,270	1,036	2,306	5,981	4,256	10,238†

* Includes neo-natal deaths.

† Includes 1 of unknown sex.

TABLE 13

DEATHS GROUPED ACCORDING TO AGE, SEX AND RACE, 1956

Age Group	Euro-peans		Eura-sians		Chinese		Malay-sians		Indians and Pakis-tanis		Others		Total		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M & F
Under 1 day ..	3	..	3	1	147	79	38	32	16	12	2	3	209	127	336
1 day and under 2 days	2	..	..	..	79	34	22	13	8	5	..	..	111	52	163
2 days and under 3 days	..	2	..	1	39	33	12	11	2	2	..	..	53	49	102
3 days and under 4 days	1	..	..	..	33	23	11	6	6	3	..	..	51	32	83
4 days and under 5 days	..	..	..	..	23	17	16	6	3	1	..	2	42	26	68
5 days and under 6 days	..	..	..	..	26	17	6	5	..	..	1	..	32	23	55
6 days and under 7 days	..	..	1	..	21	10	3	1	1	2	..	..	26	13	39
7 days and under 14 days	1	2	..	1	63	31	21	14	7	4	..	..	92	52	144
14 days and under 21 days	..	..	..	..	37	22	24	10	4	2	..	..	65	34	99
21 days and under 28 days	..	..	..	..	33	10	18	8	3	1	..	..	54	19	73
Neo-natal Deaths ..	7	4	4	3	501	276	171	106	50	32	2	6	735	427	1,162
28 days and under 2 months	1	..	1	..	85	64	75	42	8	9	2	1	172	116	289†
2 months and under 3 months	2	..	..	..	53	47	61	38	9	4	..	..	125	89	214
3 months and under 4 months	..	..	..	..	40	37	36	26	6	2	..	1	82	66	148
4 months and under 5 months	..	1	..	1	34	33	32	17	1	3	..	..	67	55	122
5 months and under 6 months	1	..	..	..	33	25	34	27	2	1	..	..	70	53	123
6 months and under 7 months	1	..	..	..	42	28	17	33	3	3	1	..	64	64	128
7 months and under 8 months	..	..	..	..	22	20	20	15	5	1	..	..	47	36	83
8 months and under 9 months	..	..	..	..	28	31	22	22	2	3	..	1	52	57	109
9 months and under 10 months	..	..	..	..	31	15	5	13	6	2	1	1	43	31	74
10 months and under 11 months	..	..	..	..	22	27	9	10	1	2	..	1	32	40	72
11 months and under 12 months	..	..	..	..	16	19	12	10	2	3	..	..	30	32	62
Infant Mortality* ..	12	5	5	4	907	622	494	359	95	65	6	11	1,519	1,066	2,586†
Under 1 year ..	12	5	5	4	907	622	494	359	95	65	6	11	1,519	1,066	2,586†
1 year and under 2 years	..	2	1	..	145	164	66	71	13	13	1	1	226	251	477
2 years and under 3 years	..	..	1	..	90	84	28	37	3	2	..	..	122	123	245
3 years and under 4 years	..	..	..	..	61	69	17	21	3	6	..	1	81	97	178
4 years and under 5 years	..	..	..	..	34	36	10	10	1	4	..	..	45	50	95
5 years and under 10 years	2	..	1	..	94	93	25	20	13	11	..	..	135	124	259
10 years and under 15 years	1	..	..	..	49	28	13	9	3	4	1	..	67	41	108
15 years and under 20 years	1	..	..	..	73	40	15	16	6	2	2	..	97	58	155
20 years and under 25 years	5	1	2	..	75	55	17	22	9	8	..	..	108	86	194
25 years and under 30 years	4	..	..	2	73	42	19	22	13	7	2	..	111	73	184
30 years and under 35 years	2	1	1	1	75	57	20	23	24	8	4	1	126	91	217
35 years and under 40 years	3	..	1	2	135	81	22	17	42	5	3	2	206	107	313
40 years and under 45 years	2	2	..	2	204	99	26	31	35	6	1	1	268	141	409
45 years and under 50 years	7	4	2	2	265	147	41	25	50	5	2	..	367	183	550
50 years and under 55 years	8	1	2	2	364	177	52	29	63	9	1	..	490	218	708
55 years and under 60 years	3	1	2	4	424	201	55	36	52	13	5	1	541	256	797
60 years and under 65 years	1	..	2	2	410	222	49	29	29	6	1	..	492	259	751
65 years and under 70 years	4	1	3	6	355	238	28	21	19	9	4	2	413	277	690
70 years and under 75 years	1	..	3	1	231	234	21	23	8	6	..	1	264	265	529
75 years and under 80 years	3	..	5	5	141	193	22	24	8	5	..	..	179	227	406
80 years and under 85 years	1	2	2	..	58	134	7	12	2	2	..	..	70	150	220
85 years and over	..	1	1	2	31	90	10	16	5	2	1	2	48	113	161
Age unknown ..	..	..	..	..	4	..	..	..	..	..	2	..	6	..	6
Total All Ages ..	60	21	34	35	4,298	3,106	1,057	873	496	198	36	23	5,981	4,256	10,238†

* Includes neo-natal deaths.

† Includes 1 of unknown sex.

73. The death rate for 1956 is the lowest on record at 8.11 per 1,000 of the population and compares favourably with any country as a crude death rate. Almost certainly the explanation for the low crude death rate lies in the fact that the population of the Island is a very young one.

TABLE 14
INFANT MORTALITY

Racial Group	1931		1947		1952		1953		1954		1955		1956	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
Chinese ..	3,041	183.83	2,671	79.43	2,434	62.27	2,425	58.22	2,002	46.80	1,731	40.36	1,529	33.97
Malaysians ..	722	261.35	784	143.25	823	120.01	905	124.38	869	106.71	873	104.61	853	95.46
Indian and Pakistanis ..	171	163.73	236	76.45	243	66.19	249	62.94	257	60.76	196	44.15	160	34.27
Europeans ..	5	29.59	18	57.69	24	31.70	22	25.79	19	21.37	18	17.42	17	16.41
Eurasians ..	23	110.55	28	77.99	17	47.35	24	73.85	12	35.93	12	33.24	9	24.86
others ..	34	149.78	21	113.51	41	78.28	30	60.12	35	63.06	34	57.72	18	29.95
Total ..	3,996	191.30	3,758	87.33	3,582	69.97	3,658*	67.04	3,194	56.10	2,864	49.67	2,586	42.66

* Includes 3 of unknown racial group.

74. The infant mortality rate now stands at 42.66 as against 191.3 in 1931, 103.47 in 1939, 284.95 in 1944, 87.33 in 1947, 69.97 in 1952 and 49.67 in 1955. In the three main races—Chinese, Malays and Indians—the Chinese rate is still the lowest at a record of 33.97 as compared with 40.36 in 1955, the Indian rate being 34.27 as compared with 44.15 in 1955. The Malay rate shows a decrease from 104.61 in 1955 to 95.46 in 1956.

75. A reason for the very high infant mortality rate among Malays has already been advanced above in the discussion on the ages of parturient mothers. Other causes are environmental, social and economic. Both in the City and in the Rural areas the majority of the Malays live in circumstances far less satisfactory in regard to modern standards of hygiene and sanitation. On the whole it is not a wealthy section; the grandmother, the pawang and the dukun (local medicine men) still wield their traditionally powerful influence in these households.

76. If the present trend in the progressive drop in our infant mortality rate continues, it may be possible in the coming years to record rates comparable with more advanced countries. Nevertheless there is reason for satisfaction when account is taken of the fact that Singapore is subject to disease conditions which are unknown in England and its population is concentrated to a very great extent in cubicle housing which creates the worst of slum conditions. In addition any territory which is subject to such a phenomenally high birth rate as that of Singapore will never be able to attain the low levels that are possible in countries with birth rate of under 20. Furthermore areas with more than one ethnic group and with a percentage still adhering to Eastern forms of medicine have considerable effect on our infant mortality rate.

77. Singapore has always recorded a very much lower still-birth rate than England and Wales. In 1956 the still birth rate was 14.7 per thousand births.

78. The maternal deaths during the year was 45. The maternal mortality rate was 0.7 per thousand births.

TABLE 15

STILL BIRTHS AND STILL BIRTH RATE

Year	Still-Births	Still-Birth Rate	Year	Still-Births	Still-Birth Rate
1931	568	27.0	1944	610	18.9
1932	528	24.8	1945	459	18.4
1933	527	23.9	1946	645	16.4
1934	586	25.1	1947	671	15.3
1935	650	24.5	1948	753	16.7
1936	693	24.1	1949	803	17.1
1937	755	24.7	1950	807	17.1
1938	783	24.0	1951	802	16.4
1939	814	23.0	1952	901	17.3
1940	719	20.8	1953	925	16.9
1941	816	23.2	1954	932	16.1
1942	467	16.6	1955	904	15.4
1943	599	18.8	1956	909	14.7

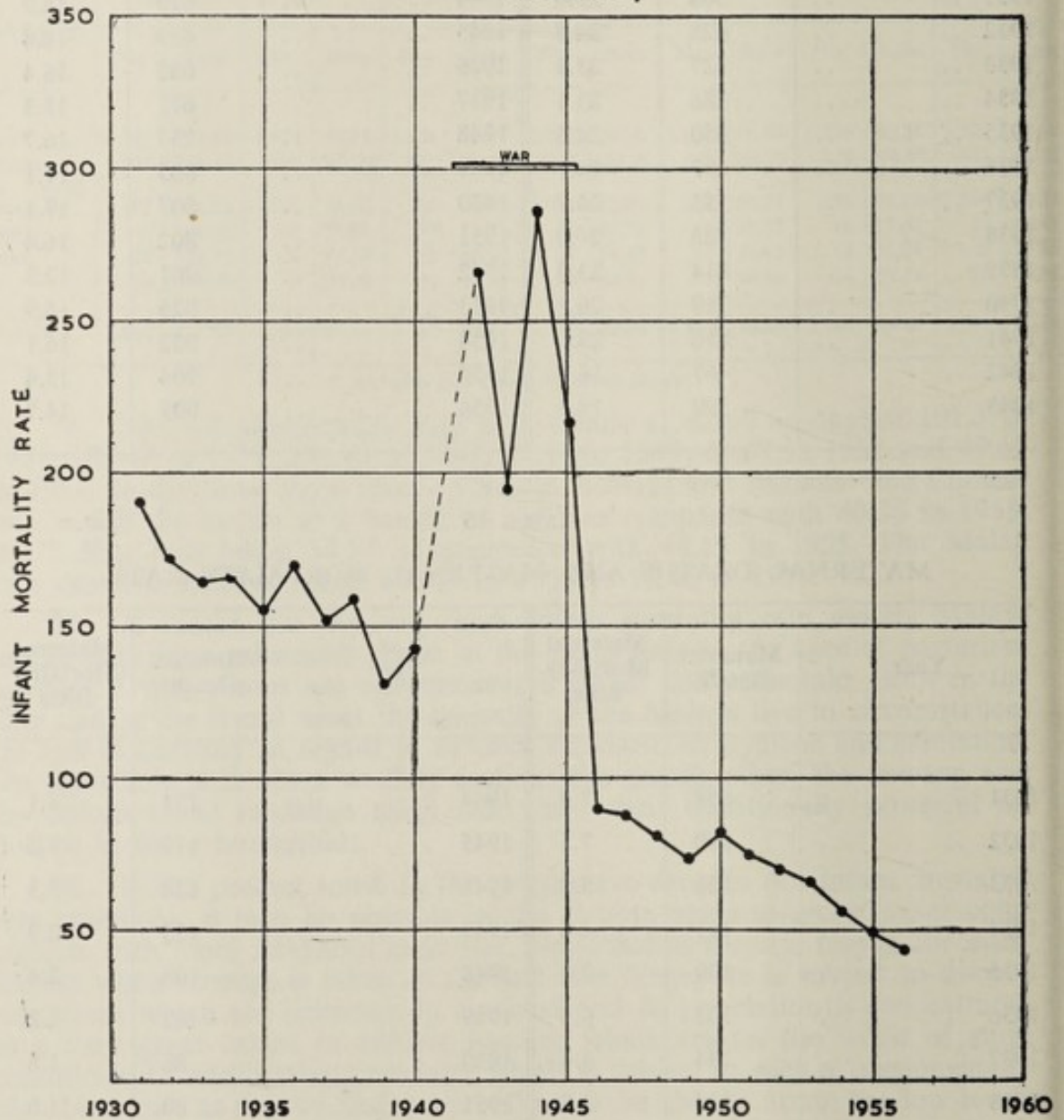
TABLE 16

MATERNAL DEATHS AND MATERNAL MORTALITY RATE

Year	Maternal Deaths	Maternal Mortality Rate	Year	Maternal Deaths	Maternal Mortality Rate
1931	158	7.5	1944	131	4.1
1932	160	7.5	1945	179	7.2
1933	128	5.8	1946	128	3.3
1934	111	4.8	1947	125	2.9
1935	100	3.8	1948	108	2.4
1936	103	3.6	1949	102	2.2
1937	134	4.4	1950	86	1.8
1938	154	4.7	1951	80	1.6
1939	140	4.0	1952	87	1.7
1940	148	4.3	1953	68	1.2
1941	146	4.1	1954	88	1.5
1942	160	5.7	1955	52	0.9
1943	139	4.4	1956	45	0.7

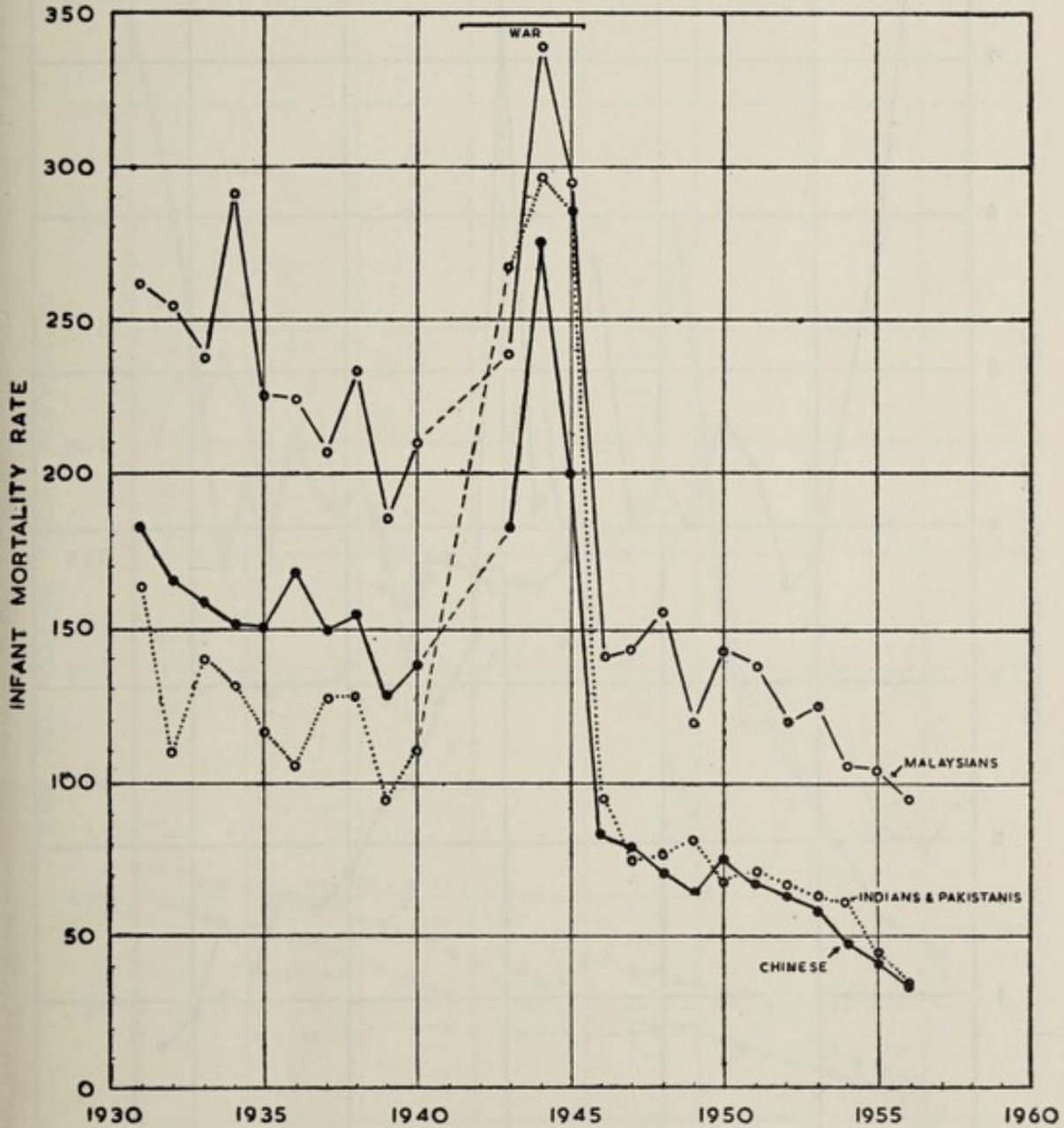
(Note:—Maternal deaths are taken as deaths due to deliveries and complications of pregnancy, child-birth and the puerperium.)

SINGAPORE
TREND OF INFANT MORTALITY RATE: 1931 ONWARDS
(Rates are the number of deaths reported under one year of age per 1,000 live births).



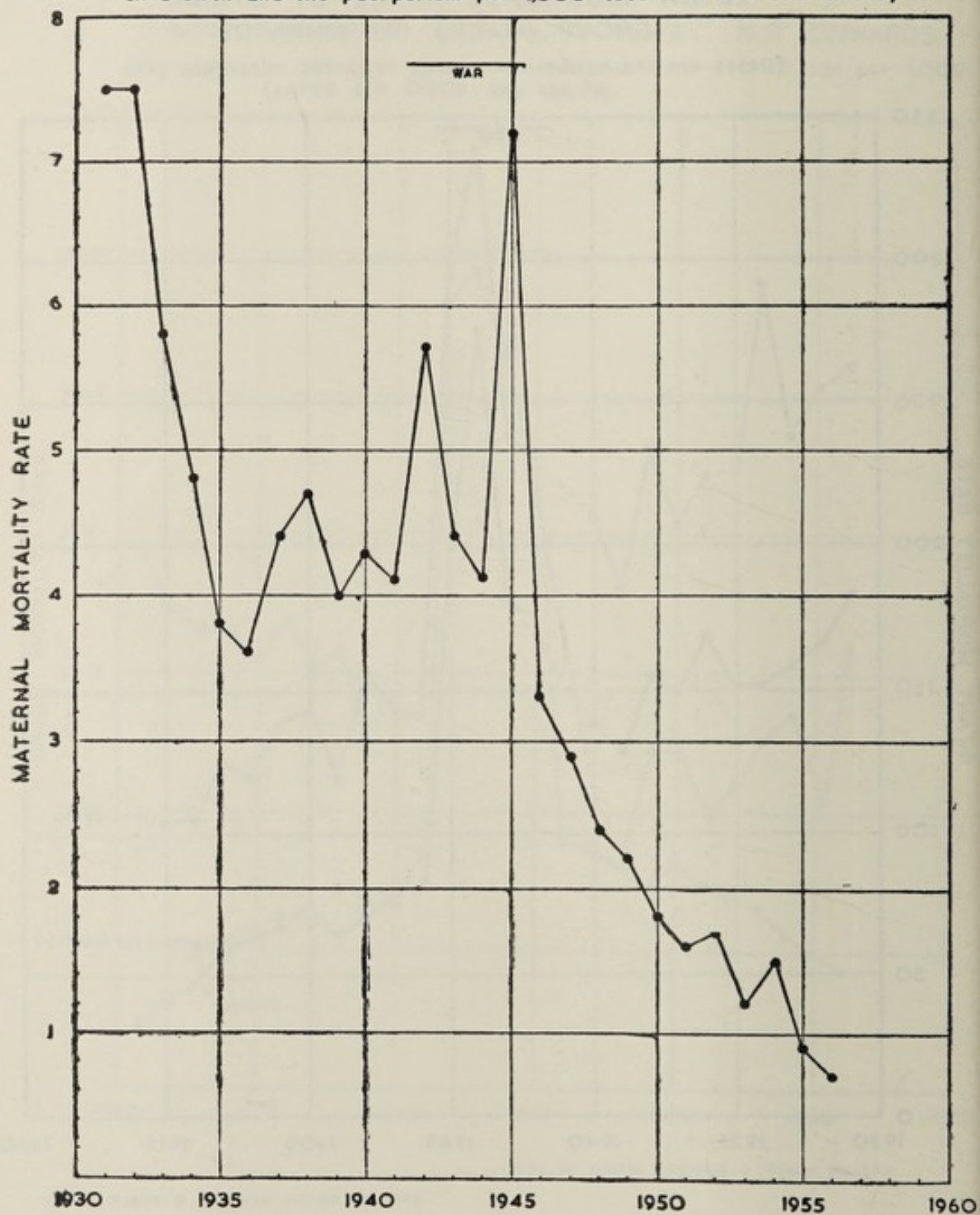
SINGAPORE
 INFANT MORTALITY RATES BY ETHNIC
 GROUP (RACE): 1931 ONWARDS

(Rates are the number of deaths reported under one year
 of age per 1,000 live births)



SINGAPORE
TREND OF MATERNAL MORTALITY RATE 1931 ONWARDS

(Rates are the number of deaths due to deliveries and complications of pregnancy, child-birth and the puerperium per 1,000 total live and still births)



TREND OF TUBERCULOSIS DEATH RATES: 1920 ONWARDS
(Singapore and certain other countries)

(Rates are the number of deaths reported from tuberculosis (all forms) per 100,000 total population).

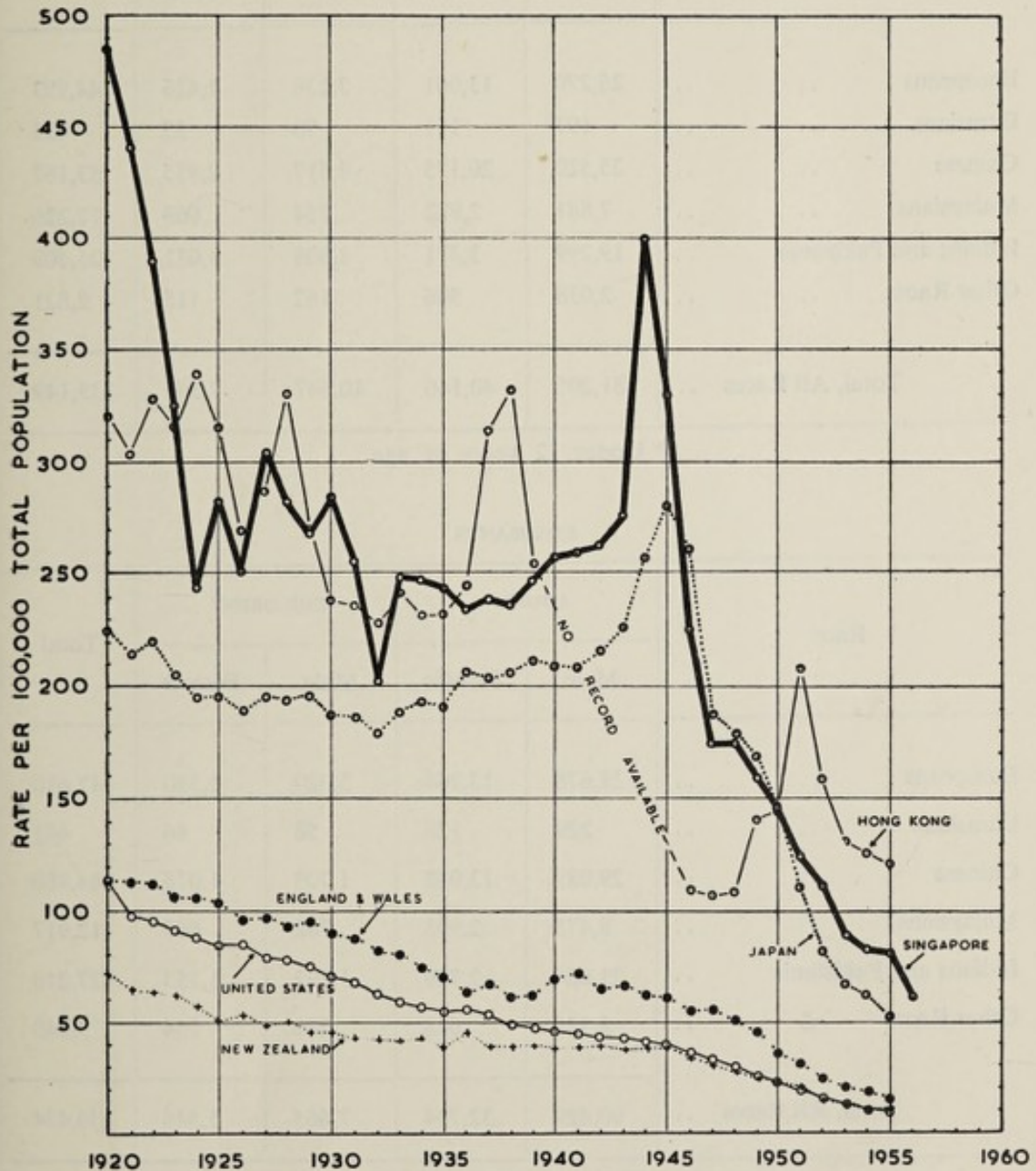


TABLE 17
MIGRATION STATISTICS BY SEA AND AIR DURING 1956
IMMIGRANTS

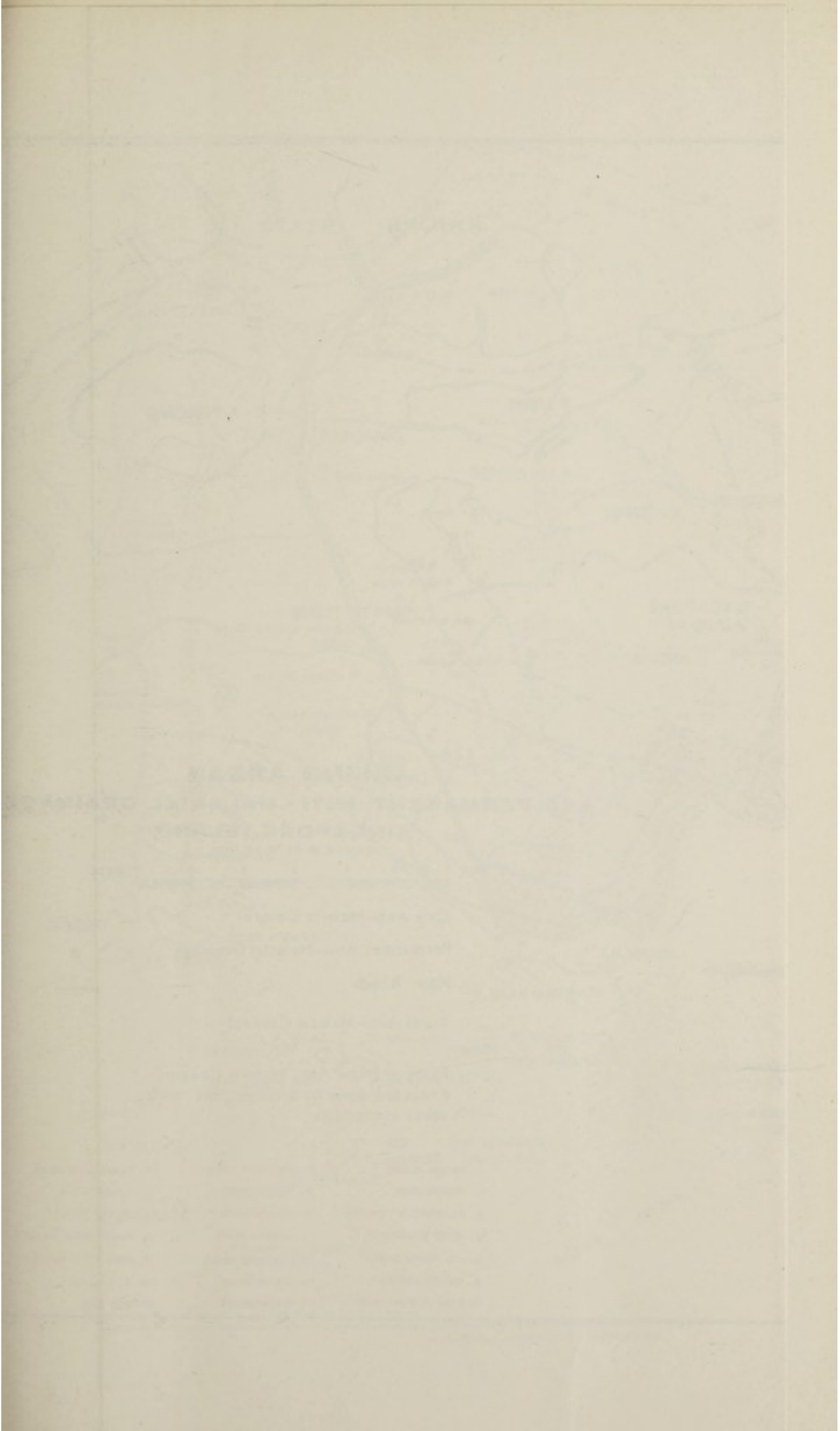
Race	ADULTS		CHILDREN*		Total
	Male	Female	Male	Female	
Europeans	26,270	13,061	3,236	2,426	44,993
Eurasians	197	111	70	55	433
Chinese	25,520	20,175	4,617	2,855	53,167
Malaysians	7,881	2,922	754	669	12,226
Indians and Pakistanis ..	19,299	3,371	1,808	1,031	25,509
Other Races	2,038	506	162	115	2,821
Total, All Races ..	81,205	40,146	10,647	7,151	139,149

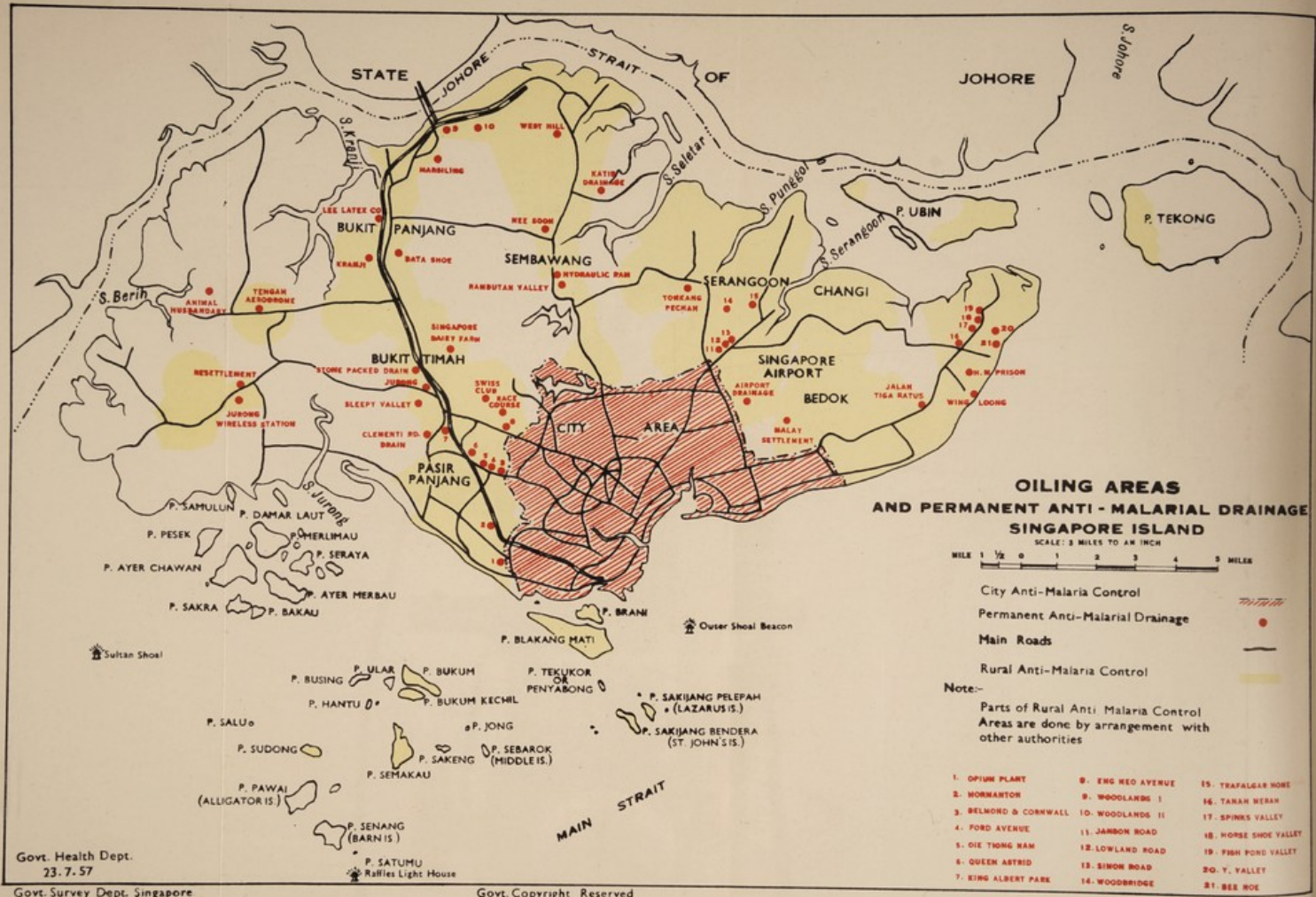
* Under 12 years of age.

EMIGRANTS

Race	ADULTS		CHILDREN*		Total
	Male	Female	Male	Female	
Europeans	28,676	13,264	3,320	2,350	47,610
Eurasians	229	128	58	46	461
Chinese	29,089	13,012	1,703	1,076	44,880
Malaysians	8,475	2,993	782	667	12,917
Indians and Pakistanis ..	21,624	2,749	1,592	1,253	27,218
Other Races	2,336	648	210	154	3,348
Total, All Races ..	90,429	32,794	7,665	5,546	136,434

* Under 12 years of age.





PART II

THE HEALTH DIVISION

PART II
THE HEALTH DIVISION

CHAPTER FOUR

INTRODUCTION

79. The Colony of Singapore comprises the main island of Singapore with several small surrounding islands including the Christmas Island. The main island is 27 miles long and 14 miles wide with a land area of 216 square miles. The area of the smaller islands is about 10 square miles.

80. There are two Local Authorities: The City Council and the Rural Board. The City Council administers a very thickly populated area of 31 square miles and is responsible for all environmental and some personal health services. The rest of the area is under the jurisdiction of the Rural Board, and the Government Health Division under the direction of the Director of Medical Services is responsible for all Health Services in this area. The School Health and Curative Services are on all-Colony basis.

81. The fundamental goals of public health have not changed with the changing of years although there has been much change in outlook. The conditions of perfect health, either public or personal, though attainable are seldom attained. The role of public health is not merely to extend life but to augment its power. The impact of ill health on the full physical, mental, economic and social well-being of the individual is recognised as the proper target of public health action; and prevention includes "mitigation or removal". The narrow vision of conquering specific disease entities by specific techniques is being challenged. Many public health problems have changed and so have the methods for their solution. Even the traditional fields of sanitation and communicable disease control demand new approaches and methods. It is a challenge of adjustment and adaptation to changing needs, a challenge that can hardly be fully met over a life-time.

82. Public health has now made the prospect of better health and of longer happier lives for the people of Singapore a reality. As in over rapidly developing territories, the gap between what is possible and what is actual is rapidly being narrowed down.

HEALTH SERVICES

83. The Health Branch has progressed rapidly. The maintenance of existing health services at a high level and extension of both personal and environmental services are necessary to meet the needs of the rapid increases of the population in the Rural areas. This population is now estimated to be nearly half a million. Not least important has been the improvement in the recruitment of specially qualified staff; in the Rural Health section all the four medical officers now employed are in possession of Diplomas in Public Health. A programme of rural sanitation has gained momentum and sanitary improvements have been effected in 31 villages, 15 of these during the current year.

84. No case of malaria of indigenous origin has been reported from the main island. Two cases were reported from St. John's Island where passengers from ships from infected ports are quarantined.

85. The Aedes Mosquito control around the International Airport at Paya Lebar covers an area of more than six square miles where prior to the institution of control measures indices for *A. ægypti* and *A. albopictus* were 34 and 86 per cent respectively. Since May 1955 the *A. ægypti* index has been zero and the index of *A. albopictus* declined to 1.6.

86. There has been no epidemic outbreak of any infectious disease other than chicken-pox and measles during the year, but typhoid, amœbic dysentery, acute anterior poliomyelitis and diphtheria remain endemic though with a low incidence.

87. The Maternity and Child Health Section now has 8 medical officers, 30 health visitors and nurses and 60 midwives in addition to a public health matron. Six new clinics have been completed during the year. There are now 47 Maternal and Child Health Clinics in rural areas of the Colony.

88. An anti-diphtheria campaign was started in January 1956 for immunisation of children living in isolated villages. A mobile unit in charge of a health sister with a health education officer paid regular visits to these villages and successfully immunised 6,126 children (1st dose), but completed two doses in 3,531 cases only. 11,483 children in addition were immunised at the regular clinics.

89. The school population on roll increased to 235,079 in 1956 as compared to 204,154 at the end of 1955. 446 out of 494 Government and Government-aided schools have been inspected. There has been an overall increase of 30 per cent in attendance at the 4 school clinics and another travelling dispensary for school children has been commissioned to meet the increased demand. The School Tuberculosis Section has registered considerable progress. The new Institute of Health (formerly termed Urban Health Centre) where the whole of the school section will be accommodated is nearing completion and is expected to be in commission during next year.

QUARANTINE SERVICES

90. With its unique geographical position large numbers of passengers, ships' crews and air crews pass through Singapore from neighbouring infected countries. Its port health services are an essential bastion against disease from outside.

TABLE 18

SUMMARY OF QUARANTINE SERVICES

	1954	1955	1956
Ships arriving from infected or suspected ports	1,587	1,783	1,849
Sea passengers inspected	98,994	116,275	95,779
Aircraft arriving from infected or suspected ports	1,341	1,315	1,647
Air passengers and crew inspected	39,725	45,976	71,600
Passengers quarantined	16,034	20,537	33,834

ENVIRONMENTAL HEALTH

91. Routine work includes the inspection of places where food is prepared, premises used for offensive trades, house inspections, inspections on reports of nuisance, inspection of premises on behalf of various Government departments and visits in connection with the control of infectious diseases. Samples of food and drugs are taken regularly and prosecutions instituted where necessary. Samples taken under the Food and Drugs Ordinance are analysed by the Department of Chemistry.

92. Water supply and sanitary services of the Colony are under the control of the City Council and the Rural Board. In the City area they are up to the standards of western cities and the Singapore piped water supply is safe to drink.

93. Dr. L. M. Ram, M.B., B.S., M.R.C.P., D.P.H., was the Chief Health Officer until November 1956, when Dr. K. Sivam, L.M.S. (Singapore), D.P.H. (Liverpool) took charge of the Health Branch.

CHAPTER FIVE

INFECTIOUS DISEASES IN RURAL SINGAPORE

94. No case of cholera, plague or small-pox occurred in the year under review.

95. Endemicity, however, exists in respect of diphtheria, chicken-pox and tuberculosis. Diseases, whose spread and prevalence are favoured by overcrowding are on the increase. This is particularly the case with diphtheria, chicken-pox and tuberculosis.

96. The number of cases of various Infectious Diseases notified from the rural areas during the year is given in Table 19.

TABLE 19

INFECTIOUS DISEASES IN RURAL SINGAPORE 1956

1.	Chicken-pox	...	...	...	447
2.	Pulmonary Tuberculosis	...	...	...	654
3.	Diphtheria	...	...	...	114
4.	Leprosy	...	...	...	31
5.	Puerperal Sepsis	...	...	...	24
6.	Enteric Fever	...	...	...	25
7.	Ac. Anterior Poliomyelitis	...	...	...	20
8.	Infective Hepatitis	...	...	...	5
9.	Erysipelas	...	...	...	2
10.	Scrub Typhus	...	...	...	Nil

CHICKEN-POX

97. The incidence of this disease seems to be increasing in the rural area during the last few years:—

<i>Year</i>	<i>Cases</i>
1950	71
1951	186
1952	128
1953	212
1954	359
1955	414
1956	447

This increase is apparently due to the more urbanisation of the rural areas, shift of the population from the crowded city area to the suburbs, and a yearly increase in the number of schools, where children from various sections come together. In 1956 the total number of schools in the Colony was 624 with 235,079 pupils.

PULMONARY TUBERCULOSIS

98. The Health Division concerns itself chiefly with health education of the public, improving the sanitary condition of the people and in the prevention of Tuberculosis in pre-school and school children.

DIPHTHERIA

99. There can be little doubt that there is a high incidence of diphtheria as the following distribution for the rural area shows:—

<i>Year</i>				<i>Cases</i>
1950	...	...	...	49
1951	...	...	...	90
1952	...	...	...	111
1953	...	...	...	95
1954	...	...	...	81
1955	...	...	...	119
1956	...	...	...	114

100. Immunisation against diphtheria has been offered in both City and Rural Maternity and Child Health clinics for some years and, in spite of this, the disease has been on the increase in its incidence in rural Singapore. The difficulties of health education amongst a people, whose traditional ideas and beliefs are backed by age-old custom and the necessity for two inoculations to secure the immunisation required, are the factors in operation for the poor immunisation rate so far recorded. The Health Education Section has devised various methods of propaganda, but it is doubtful to what extent we shall be able to break down prejudice and induce parents to bring their children to the clinics for this purpose.

POLIOMYELITIS

101. Sporadic cases have been observed throughout the year making a total of 20 compared with 16 cases in 1955. At present isolation of close contacts appears to be the effective method. Contacts of cases are excluded from schools for three weeks.

102. The age group incidence is highest among young children between 1 to 5 years of age accounting for 13 of the cases reported.

103. Since the epidemiology of the disease is still little understood it would be hazardous to predict the future of the disease which at present is endemic and sporadic.

LEPROSY

104. The cases notified from the rural areas since 1950 have been as follows:—

<i>Year</i>				<i>Cases</i>
1950	...	...	...	81
1951	...	...	...	79
1952	...	...	...	38
1953	...	...	...	48
1954	...	...	...	34
1955	...	...	...	39
1956	...	...	...	31

The incidence of the disease has been more or less constant for the last three years. It is heartening to note that the number of cases of leprosy have dropped from 81 in 1950 and 79 in 1951 to 31 in 1956. It is possible that the success of treatment so widely reported is bringing out persons from hiding in the hope of cure and that in due course the number of new cases will fall.

CHAPTER SIX

HYGIENE AND SANITATION IN RURAL AREAS

105. The Rural area of Singapore is divided into seven sanitary districts and the field staff of the Rural Health Section during the year is shown in Table 20. Dr. Lai Kuen Yee, L.M.S. (Singapore) D.P.H. (Malaya) was in charge of the Section until June 1956; from that date until the end of the year Dr. K. Kanagaratnam, M.B., B.S. (Malaya) D.P.H. (Malaya) was in charge of the Section.

TABLE 20

STAFF OF RURAL HEALTH SECTION

		1954	1955	1956
Rural Health Officers	... ..	2	3	4
Public Health Engineer	... ..	1	1	1
Supervisor of Public Health Works	... ..	1	1	1
Chief Sanitary Inspector	... ..	1	1	1
Senior Sanitary Inspectors	... ..	2	2	4
Probationer Sanitary Inspectors	}	17	19	{ 12
Sanitary Inspectors, Timescale					7
Technical Subordinates	... ..	30	32	35
Market Inspector/Overseers	... ..	1	1	4
Piggery Overseers	... ..	—	—	3
Labourers	... ..	431	605	586

Note:—One Sanitary Inspector, Timescale and three Probationer Sanitary Inspectors were seconded from the Rural Board.

106. Since May 1954 conservancy and cleansing services have been carried out by a separate Cleansing Section organised by the Rural Board; staff of this Section were transferred from the Health Branch to man the Cleansing Section; during the year under review the staff of the Cleansing Section is given in—Table 21.

TABLE 21

STAFF OF RURAL CLEANSING SECTION

Superintendent, Rural Cleansing Section	... ..	1
Senior Cleansing Inspectors	... ..	2
Cleansing Inspectors	... ..	2
Technical Subordinates	... ..	8
Overseers	... ..	8
Labourers	... ..	511

107. The Sanitary staff of the Rural Health Branch in the various districts has been concerned with Anti-malarial Control (Oiling and Drainage), Water Supplies, Inspection of Houses and housing sites, Water-borne System of Sewerage Disposal, food inspection, occupational health, village sanitation and control of infectious disease. The staff of the Cleansing Section is responsible for scavenging and conservancy services in the rural areas.

SPECIAL SURVEYS

113. 54 special mosquito surveys were made because of complaints received from the public for the investigation of malaria cases or for the purpose of extending oiling to new areas for anti-malarial control. The results of these Special Surveys are given in Table 23.

TABLE 23
SPECIAL SURVEYS 1956

	January	February	March	April	May	June	July	August	September	October	November	December	Total
No. of surveys ..	3	2	6	15	5	4	3	9	1	1	2	3	54
No. of Collections													
<i>A. maculatus</i> ..	..	..	5	13	..	..	..	..	..	1	..	..	19
<i>A. sundaicus</i> ..	..	1	..	..	..	..	..	..	..	..	..	..	1
<i>A. letifer</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
<i>A. karwari</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
<i>A. baezai</i> ..	..	..	..	..	..	..	1	..	..	..	..	..	1
<i>A. separatus</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
<i>A. hycranus</i> ..	..	4	14	38	..	..	..	3	..	2	2	..	63
<i>A. kochi</i> ..	..	1	19	17	..	..	2	9	..	3	6	10	67
<i>A. vagus</i> ..	..	..	5	19	..	..	..	..	..	..	1	5	30
<i>A. barbirostris</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
<i>A. leucosphyrus</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
<i>A. aitkeni</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
<i>A. philippinensis</i> ..	..	..	..	..	..	..	..	..	..	..	..	..	..
<i>Culex</i> ..	..	18	2	..	12	14	13	21	7	6	4	23	120
<i>Stegomyia</i> ..	15	8	2	16	18	19	15	22	8	..	..	25	148
													449

AEDES (STEGOMYIA) CONTROL

114. *Aedes stegomyia* mosquito control as a programme of Yellow Fever Precautions within the Airport proper and 880 metres from the Airport perimeter fence had been carried out vigorously as in the previous year by constant check surveys for breeding places, residual spraying, swing fogging, clearing of secondary vegetation and filling of tree holes and bamboo stumps to prevent harbouring and breeding of mosquitoes. As a result the *Aedes* collections made by the team of well trained checkers during the course of their daily check surveys were negligible when compared with the numerous places showing breeding at the initial stage of control started in November, 1954. The *Aedes* Index then was *Aedes* (S) *ægypti* 6 per cent, the present Index nil; *Aedes* (S) *albopictus* Index 33 per cent, the present Index 1.2 per cent. The odd *Aedes* mosquitoes found breeding now were mostly in jars and drums stored with water for domestic use by the squatters. Although repeated advice has been given to them to have all water containers emptied every fourth day and dried before filling again to prevent mosquito breeding, a few of the squatters had to be warned or reminded courteously to get their fullest co-operation in this programme. This "dry day" system was introduced after every village within the control area had been provided with standpipes.

Previously the squatters depended for their source of water supply on insanitary and shallow wells which became dry during the hot spells of the year when they were forced to store water for longer periods in containers without cleaning and replenishing.

115. Complete eradication of the Yellow Fever Vector, *Aedes (S) ægypti*, as required by International Sanitary Regulations has been achieved. No such species had been found breeding within the control areas since April 1955. All collections of *Aedes* mosquitoes collected were only *Aedes albopictus* which had been proved to be able to transmit Yellow Fever under experimental conditions. A large quantity of metallic containers, old tyres, bottles, jars, coconut shells, etc. which had been indiscriminately discarded in the open creating conditions favourable for the profuse breeding of *Aedes* mosquitoes were cleared. From observations made in the field *Aedes ægypti* prefer rusty water in old metal containers for their breeding place. Complete eradication of the *Aedes* mosquitoes can only be achieved by mass eviction of the squatter population from the control areas and resettling them elsewhere, for there will always be some inhabitants who will keep on creating breeding places in spite of the strict vigilance of this Section. So long as they are allowed to remain the work has to be carried on relentlessly as in the days of its inception. Complete *Aedes albopictus* control in a typical squatter area has not been possible.

Residual Spraying

116. Residual spraying with dieldrin against adult mosquitoes was started on 17.2.56 and ended on 26.5.56. 1,160 houses, 944 pigsties, 318 storehouses and 51 wells, latrine and bathroom enclosures with a total area of 3,725,994 sq. ft. of wall surface were treated using 162 gallons of Shell Dieldrix 15 emulsion. The rate of application was 7 oz. of emulsion to one gallon of water covering an area of approximately 1,000 sq. ft. of wall surface leaving a deposit of 28 mgs. per square foot which is expected to remain effective for one year.

117. Fowl coops were not sprayed this occasion. On the previous operation when they were treated, numerous complaints from the residents of fowl mites migrating from the coops to dwellings and attacking people were received. The bite caused intense irritation of the skin. Counter measures had to be taken against the mites by D. D. T. spraying and by issuing Benzoate emulsion to be applied on the affected parts of the body. These mites seem to have an extraordinary resistance against the effect of dieldrin.

Swing Fogging

118. Swing fogging to destroy the existing adult mosquito population with 5 mechanical fog generators within the control areas was carried out on 10th to 13th January using 38 gallons of dieldrin emulsion and again on 12th, 19th September and 5th October using 36½ gallons of dieldrin emulsion. The later operation was carried out against profuse fly breeding created by large scale fly breeding at Kim Chuan Road Swerage Works.

119. The fogging this time was done with the machines operating at 100 yards apart. On previous occasions this distance was between 150 to 200 yards. The reduction in space proved to be highly effective against the adult mosquitoes and other insects. Out of 250 houses checked at random

for adult mosquito prevalence a fortnight after the first fogging operation only 14 collections were made, all of which were *Culex*. No *Aedes* or *Anopheles* adult mosquitoes were found.

Clearing of Secondary Vegetation

120. To prevent harbourage of mosquitoes and mosquito breeding in artificial containers which may lie hidden, the control areas on the north, west, south and eastern sides of the Airport proper had been completely cleared of secondary vegetation 6 successive times during the year. A total of 8,627 acres had been cleared during this process.

Destruction of Natural Breeding Places

121. To prevent mosquito breeding 23,946 tree holes and bamboo stumps were filled up with coal tar and granite chippings. The corresponding figure for the year 1955 was 182,642. This work has to be continued as the squatters fell bamboo whenever they need them for weaving baskets and for fencing in their vegetable plots.

AEDES CONTROL SURVEYS

122. In addition to weekly checking of the 122 artificial check points in the control areas quarterly surveys were made around Paya Lebar to assess the *Aedes* Index. Fifty-six surveys were made and the data is given in Table 24.

TABLE 24
AEDES (*STEGOMYIA*) SURVEYS 1956

Month	No. of surveys	No. of houses checked	No. of <i>Aedes aegypti</i> collections	No. of <i>Aedes albopictus</i> collections	No. of <i>Aedes armigeres</i> collections	No. of <i>Culex</i> collections	<i>Aedes</i> Index
March	14	1,160	Nil.	17	3	13	1.4%
June	13	1,160	Nil.	14	1	27	1.2%
September	15	1,156	Nil.	19	2	11	1.6%
December	14	1,161	Nil.	15	7	20	1.2%

New Oiling Areas

123. After comprehensive malaria surveys, new oiling areas were included in routine control. New areas include Nanyang University and Bedok Catchment areas.

- (1) Nanyang University—15 m.s. Jurong Road.

Anti-malarial oiling was extended from quarter to half a mile radius from the original oiling areas to protect the resident population of the University numbering about 1,000; these include the tutorial staff and undergraduates, many of the undergraduates coming from areas where malaria is prevalent.

- (2) Bedok Catchment Area—off 8 m.s. Changi Road.

This area bounded by Jalan Kongkeng, Tampenis Road to the north, Harvey Avenue to the east, Jalan Eunus to the west and Changi Road to the south cover an area of approximately 2,340 acres and is thickly populated. Innumerable seepages were found in the ravines and breeding of *A. maculatus* abound. A preliminary survey made around the area in a dry spell revealed

17 places breeding *A. maculatus* profusely. After recommendations by this Section and an indication of the serious risk of malaria transmission if left unattended funds were provided for the Anti-malarial Control to be extended to this area.

Malaria Cases

124. Three cases of Benign Tertian malaria were reported from St. John's Island Quarantine Station in June this year. On receiving the notification, immediate investigations were made and surveys showed seven collections of *A. Maculatus* on the neighbouring island of Lazarus, a quarter mile away from St. John's Island. No breeding was found in St. John's Island. The history of all the cases point to a local transmission and immediate steps were taken to control it. All the breeding places were destroyed. Residual spraying of all houses in St. John's Island and Lazarus Island was carried out with B.H.C. preceded by concentrated swing fogging of Lazarus Island with dieldrin.

125. No further cases of malaria from both islands were reported.

126. Six more cases of malaria were reported from Pulau Bukom Besar, Coronation Road, East Coast Road, Pulau Ubin, Bukit Panjang 10 $\frac{3}{4}$ m.s. and Kim Chuan Road. On investigation all the cases were found to be either imported or relapse cases.

TABLE 25

SUMMARY OF ANTI-MALARIAL DRAINAGE WORK 1956

Large sized channel drains constructed	...	1,847	yards
Small sized channel drains constructed	...	792	"
Subsoil pipes laid	... ..	7,971	"
Stone packed drains constructed	... ..	338	"
Fascine drains constructed	... ..	515	"
Earth drains ditched and graded	... ..	9,729	"
Storm water bunds constructed	... ..	914	"
Channel drains repaired	... ..	2,131	"
Subsoil pipe lines repaired	... ..	5,210	"
Wooden flume repaired	... ..	200	"
Permanent drains maintained	... ..	248,597	"
Anti-malarial wells constructed	... ..	7	
Flume constructed	... ..	1	
Culverts constructed	... ..	2	

Anti-malaria Materials

127. The amount of Anti-malarial oil used was 90,204 gallons, as compared with 66,145 gallons in 1955. 230 gallons of kerosene were used in controlling breeding in seepage wells, 8,916 gallons of residual insecticides (D.D.T., B.H.C. and Dioldrex) were used in residual spraying of the Southern Islands, Airport Area, and in controlling fly nuisance.

WATER SUPPLIES

128. It has been the policy to extend pipe water supplies to the rural areas as much as possible. At present there are water mains on most of the major roads and more are laid every year. Supply, however, cannot always catch up with demand, so that in the more remote areas it is still necessary to depend on wells for water. Whenever possible standpipes for communities are provided through the Rural Board at the earliest opportunity. During dry weather, the Rural Board provides drinking water, through a water-waggon service.

129. In places where permanent drainage has been laid for anti-malarial work relatively 'safe' water from subsoil pipes is available both for drinking and washing purposes. During the year 68 standpipes were installed in different localities and 6 anti-malarial wells were constructed.

TABLE 26
WATER SUPPLY IN THE RURAL AREAS

District	A.M. wash wells Existing in 1955	A.M. wash wells constructed in 1956	A.M. wells existing in 1955	A.M. wells constructed in 1956	Stand-pipes existing in 1955	Stand-pipes installed in 1956
Bukit Timah ..	37	..	34	1	33	11
Bukit Panjang ..	22	..	21	1	30	11
Pasir Panjang ..	5	..	15	2	28	1
Bedok ..	5	..	7	..	39	10
Changi ..	17	..	9	2	19	6
Serangoon ..	44	1	4	..	32	24
Sembawang ..	14	..	5	..	29	5
	144	1	95	6	210	68

FOOD HYGIENE

130. In a community where the major infectious disease has not existed for many years and where malaria and other tropical diseases are absent or present at a very low level, it is necessary and possible for a public health authority to pay increasing attention to Food Hygiene. Unfortunately the multiplicity of duties of the Sanitary Inspectorate and the inability of the Chemistry Department to cope with a large number of formal food samples limits food and drugs control in the rural areas. Despite these handicaps, the supervision of preparation, storage and sale of food is an important function of this Section.

Food Sampling.

131. The number of formal food samples examined was quite inadequate and consisted almost entirely of fresh milk, nearly half of which were found not to comply with the regulations. Added water was detected in most of the sub-standard milks with a resulting deficiency in milk solids; fat deficiencies are rare due to the high normal fat content of the local buffalo milk. The only other formal food samples were one of coffee, one of cooking fat and three of aerated water. These latter were all found to be satisfactory.

132. A number of informal samples were taken by the Sanitary Inspectors in the course of their duties. These were found to be of good quality but in a few cases the labels did not comply with the regulations and suitable amendments were required of the manufacturers.



Health Education Officer, Singapore

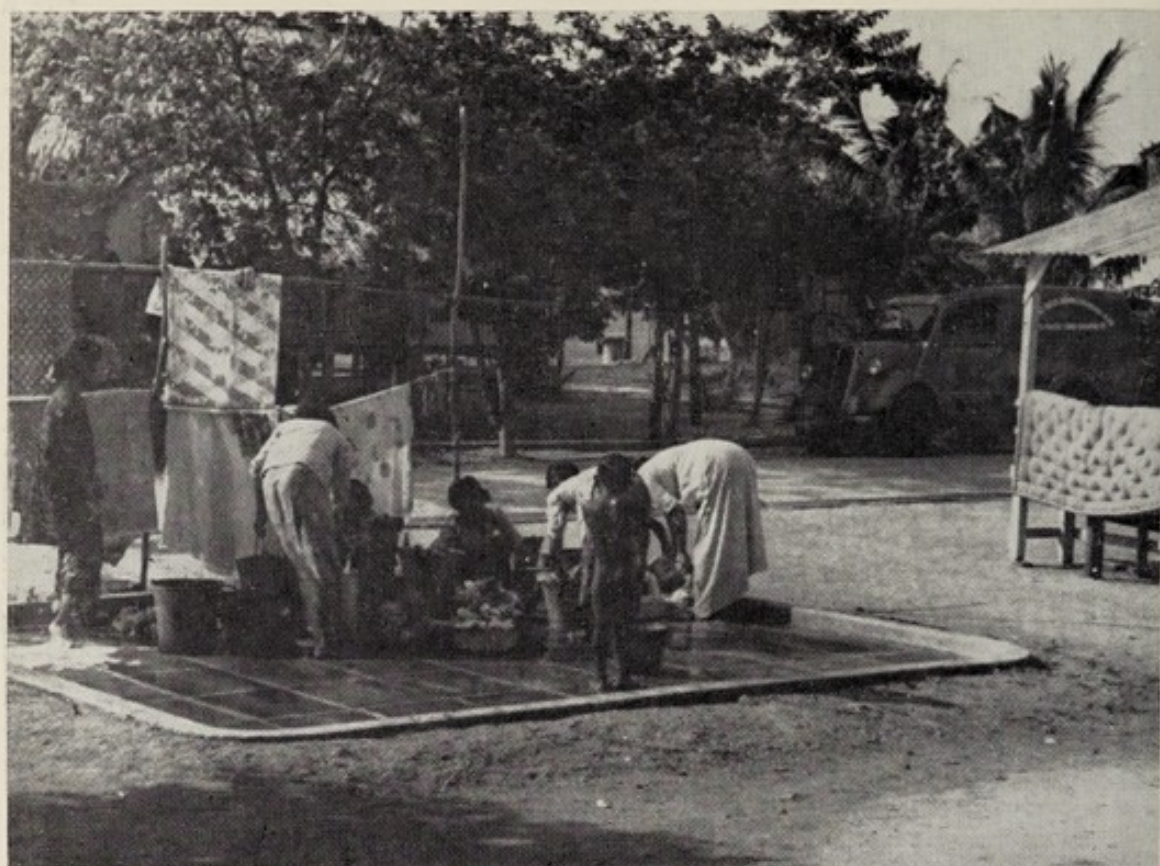
Regular inspection of food sold in markets and shops is done. Inspector checking on meat in a public market



Health Education Officer, Singapore

Factories like this glass factory in Paya Lebar are regularly supervised from the point of view of industrial and occupational health

VILLAGE SANITATION



Health Education Officer, Singapore

Standpipes with large aprons for washing purposes are being provided in increasing numbers



Health Education Officer, Singapore

Health Department labourers maintain sanitized villages

Markets

133. There are 4 public markets (Rural Board) and 10 private markets in the Rural area. A list of these markets is given in Table 27. During the year considerable attention was given to improvements to existing markets and more effective supervision of stall-holders and hawkers. The appointment of 3 Market Overseers during the year has enabled this supervision to be carried out.

Inspection of sites and planning for new Rural Board markets at the following places was done:—

Clementi Road, Thomson Road 5½ m.s., Ulu Bedok, Bedok/Changi Road and Jalan Eunos.

Improvements and extensions to Bukit Panjang and Upper Serangoon Rural Board markets were done.

Control of Food Hawkers

134. Supervision of food hawkers and food stalls continued during the year. The occurrence of large number of new food hawkers in every part of the rural areas make full control and supervision difficult.

Control of Cattlesheds and Dairies

135. Singapore depends mostly on imported milk. There are 45 licensed cattlesheds and 2 dairies. The cattlesheds are owned by Indians with small herds of cows. The absence of sufficient grazing grounds presents a serious problem. Cows are frequently found on the roads causing obstruction and in drained areas causing damage to anti-malarial drains.

136. Milk samples were taken from vendors and those found adulterating their milk were prosecuted. Owners of cattlesheds which were kept in an insanitary condition, were also prosecuted. The local population usually boil the milk before consumption. No spread of disease has been traced to source of milk supply.

137. There are 3 dairy farms, which import milch cows from Australia. Milking is done by machine and it is pasteurised before being sold to the public.

Control of Piggeries

138. There are 1,654 licensed piggeries in Rural Singapore. Many have not been licensed because of shortage of staff. The Rural Board has now employed piggery overseers. They work under the supervision of the District Sanitary Inspectors.

139. Although all pork sold in the rural areas is supposed to have come from the City Abattoirs, a substantial percentage is probably from illegally slaughtered pigs. There are only 2 licensed slaughter houses, one in Pulau Ubin and the other in Pulau Tekong. Plans for Rural Board Abattoirs in Lim Chu Kang and Sembawang are in hand.

140. The pig-dung is collected in cemented tanks in pigsties, often mixed with nightsoil from latrines built over the tanks and is used by the farmers as manure. Fly and mosquito breeding constantly arise. Strict vigilance is always required. 6,142 inspections were made during the year.

Food Inspection

141. Table 28 details the number of food premises and inspections carried out.

TABLE 27
MARKETS IN RURAL AREAS

Name of Market	Class of Market	Size of Market	Vegetable stalls	Fish stalls	Poultry	Pork	Beef	Mutton	Salted vegetable	Egg	Dried goods	Curry powder	Fruit	Bean cake	Cooked fish	Other	Total Stalls
Jalan Kayu Market	Public	40' x 80'	10	10	5	7	..	2	1	1	1	1	2	..	..	..	40
Upper Serangoon Market	Public	Block A 40' x 80'	..	35	..	20	..	..	..	..	..	1	2	..	..	..	58
	Public	" B 40' x 80'	26	..	6	..	3	..	3	..	..	1	2	..	..	..	46
	Public	" C 40' x 80'	19	26	..	7	..	..	1	..	1	..	2	..	..	..	54
Ponggol Road 10 m.s.	Private	Total	45	61	6	27	3	1	4	..	4	1	4	2	..	..	158
	Private	36' x 48'	6	9 pitches	..	7	..	..	1	..	4	..	..	..	..	..	27
Yio Chu Kang Road 6 m.s.	Private	32' x 56'	3	8	..	3	..	..	1	..	2	..	..	..	..	..	17
Bukit Timah Park 7 m.s.	Private	Block A 30' x 42'	2	11	..	4	2	2	..	..	..	1	..	3	..	..	25
	Private	" B 50' x 65'	12	12	..	10	..	..	1	..	..	..	..	2	..	..	37
Bukit Timah Market 7 m.s.	Private	Total	14	23	..	14	2	2	1	..	..	1	..	5	..	..	62
	Private	38' x 110'	12	..	..	14	..	..	..	..	..	..	2	..	..	..	28
Princess Elizabeth Estate Market	Private	20' x 35'	2	2	1	1	1	1	..	..	2	..	..	..	..	..	10
Bukit Panjang Road 10 m.s.	Public	Block A 40' x 80'	14	19	..	14	2	2	2	..	1	1	2	4	2	4	56
	Public	" B 30' x 65' (pitches)	25	..	2	..	..	..	..	..	..	..	..	..	..	..	42
Holland Road	Public	40' x 80'	14	14	4	8	2	2	..	1	..	1	..	4	..	..	50
Buona Vista Road	Private	Block A 35' x 67'	14	15	..	3	1	1	1	..	2	..	..	..	1	9	35
	Private	" B 35' x 67'	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12
Clementi Road	Private	Total	14	15	..	3	1	1	1	..	2	..	..	..	1	9	47
	Private	34' x 60'	12	10	4	..	1	1	..	..	..	2	2	..	..	..	32
Kampong San Teng	Private	30' x 75'	16	3	..	4	..	..	..	..	..	8	3	3	1	5	43
	Private	32' x 60'	4	20	..	10	..	1	1	..	2	..	..	..	..	..	38
Sembawang 13½ m.s.	Private	75' x 112'	20	18	4	12	2	2	..	..	9	1	..	..	..	..	68

TABLE 28
INSPECTIONS OF FOOD PREMISES

	<i>Number of Premises</i>	<i>Number of Inspections</i>
Noodle Factories ...	22	383
Bakeries and Biscuit Factories ...	50	591
Markets ...	18	1,599
Eating Houses and Coffee Shops ...	443	5,082
Food Stalls ...	208	4,926
Food Hawkers and Fish Mongers ...	—	827
Aerated Water Factories ...	3	68
Food Preserving Factories ...	6	41
Coffee Grinding Factories ...	11	73

HOUSING

142. The housing development that has taken place in the rural areas in the last few years continued at an accelerated rate during 1956. Details of housing development since 1951 are given in Tables 29 and 30.

TABLE 29
HOUSING ESTATES DEVELOPED IN RURAL AREAS

	<i>1952-1956 Housing Units</i>
Serangoon Garden Estate ...	2,362
Raffles Park ...	124
Adelphi Park ...	156
*Fu Yong Estate ...	109
Thomson Rise Estate ...	80
*Sembawang Hills Estate ...	310
*Oei Tiong Ham Park ...	25
Alsagoff Estate (Thomson Road) ...	38
Ang Hoon Whee Estate ...	118
*Bin Tong Park ...	11
*Binjai Park ...	18
Kilburn Estate ...	25
Ewart Park ...	24
Astrid Hill Estate ...	12
Leedon Park ...	22
*Marlyland Estate ...	9
*Opera Estate ...	250
*Alsagoff Estate (Sennett Road) ...	4
Harvey Avenue Estate ...	25
Guan Soon Avenue Estate ...	13
Changi Road 12½ m.s. Estate ...	15
Total ...	3,750

* Estate is still being developed.

Note:—This figure only represents houses built in housing estates in the last five years. All of them cater for the middle and higher income groups.

143. The work of the Rural Health Section covers every aspect of housing development from the embryonic stage when a layout is considered from the health point of view. From this point to the consideration of the detailed plans, the supervision of conditions on building sites, the inspection of buildings during every phase of construction, the approval and maintenance of sanitary fittings and septic tanks and the final sanitation conservancy and refuse removal services of the completed houses represent a very large volume of work.

TABLE 30
BUILDINGS ERECTED IN THE RURAL AREAS 1951-1956

	1951	1952	1953	1954	1955	1956	Total
Number of Buildings ..	609	735	1,039	1,667	1,668	1,388	7,106
	\$	\$	\$	\$	\$	\$	\$
Estimated Value ..	7,024,550	10,537,966	19,516,603	17,840,285	17,568,541	17,369,824	89,857,769.

MAJOR TYPES OF BUILDINGS ERECTED IN THE RURAL AREAS 1951-1956

	1951	1952	1953	1954	1955	1956	Total
Bungalows	106	177	230	300	269	304	1,386
Terrace Houses ..	27	52	120	618	561	470	1,848
Shophouses	49	24	70	29	44	37	253
Blocks of flats ..	1	8	7	7	4	19	46
Semi-detached Bungalows ..	..	2	178	143	202	105	630
Quarters for staff ..	6	4	12	8	6	3	39
Labourers Quarters ..	13	12	7	15	2	8	57
Industrial Buildings ..	57	58	64	48	27	26	280
School Buildings ..	3	3	9	3	4	2	24
Religious Buildings ..	1	1	4	5	2	2	15
Petrol Filling Stations ..	4	2	5	4	3	5	23
Cinema	1	..	..	..	..	1	2
Temporary Buildings ..	338	389	327	479	539	409	2,481

144. Plans and layouts of buildings handled during the year are given in Table 31.

TABLE 31
PLANS AND LAYOUTS CONSIDERED BY THE RURAL HEALTH SECTION

Plans of Residential Buildings	260
Plans of Industrial Buildings	2
Plans of sheds	1
Plans of Septic Tanks	38
Layouts of site for development under the Singapore Improvement Ordinance ...	216

CLEANSING SERVICES

Scavenging

145. Scavenging falls under two main categories—domestic refuse and trade refuse. From 1st March 1956 when the Rural Board Removal of Refuse Regulations, 1956 came into force a small charge was made for domestic refuse removal.

146. More than 3,000,000 cubic feet of refuse was collected and disposed of during 1956 from 14,648 premises; this compares with little over 2,500,000 cubic feet of refuse in 1955 from 14,225 premises. Of the 14,648 premises provided with scavenging services, 3,879 were trade premises and 10,769 were domestic premises.

147. The Cleansing Section was also responsible for the sweeping and cleansing of roads and back-lanes in built up areas.

148. Five Land Rovers and three open lorries were used for refuse removal. Localised sites for refuse disposal were used in most districts and handcarts were used for refuse removal to such sites. Factory and trade refuse was usually removed by mechanised transport.

149. Eleven incinerators were in use in various parts of the rural areas. Considerable amount of controlled tipping was done. Composting was done in two districts.

Conservancy

150. The Cleansing Section provides a direct conservancy service to Bukit Panjang, Bukit Timah and Serangoon Districts; in the other four districts removal by approved contractors was done. The daily average number of pails removed was 9,634. Disposal of nightsoil collected was by composting trenching and in two districts into digestion tanks. Six "Karrier" Conservancy Collectors were in use in the areas where the Cleansing Section was responsible for refuse removal.

VILLAGE SANITATION

151. A programme has been initiated since 1954 to improve living conditions in the kampongs. Sanitation is improved by constructing drains, latrines, wells, provision of standpipes and white washing of houses. The co-operation of the villagers is actively sought by personal approach, a method of health education is found to be the most effective.

152. Conservancy in kampongs has always been a problem. With a view to improving this, an experimental type of water-seal latrine is being tried out in Kampong Ayer Gemuroh, Changi. So far the few built has been satisfactory and active consideration is being given to the possibility of building more in this and other Malay kampongs. Water-seal latrines of this type can only be used for populations who use only water for cleansing after defecation.

153. The following kampongs were sanitated in 1956:—

- (1) Kampong Buona Vista
- (2) Kampong Alexandra Terrace
- (3) Kampong Hyderabad
- (4) Kampong Sungei Pandan

- (5) Kampong Pepys Road
- (6) Kampong Mendoza
- (7) Kampong Yu Ah Sai Barracks
- (8) Kampong Tuas
- (9) Kampong Kranji
- (10) Kampong Marsiling
- (11) Kampong Nee Soon
- (12) Kampong Chia Keng
- (13) Kampong Nallur
- (14) Kampong Tanah Merah Besar

INDUSTRIAL AND OCCUPATIONAL HEALTH

154. A survey and inspection of industrial establishments in the rural area of Singapore was commenced in April 1955 by the Rural Health Department in conjunction with the Inspectorate of Dangerous and Hazardous Materials. During 1955 a total of 186 such establishments were inspected. Advice on dangers and health hazards were given by the Inspectorate in writing to the managements concerned. Sanitary defects were communicated to the owners by the Rural Health Officer for the necessary rectification.

155. Routine inspection and normal supervision of hygienic aspects of these premises continued during 1956. The Inspectorate was again approached to do 25 inspections of certain factories during 1956. Many smaller trades are being conducted in crude and primitive ways and tend to increased the hazards and dangers to health due to ignorance and the empirical means of production on the part of the managements.

156. A vast improvement in the welfare arrangements for workers of the larger establishments in the rural area is noticeable of late, as regards the housing accommodation, hours of work, wages, provident fund schemes, bonuses, leave and other matters that pertain directly or indirectly to health. Most large establishments provide essential amenities for their workers; many of the smaller concerns do not.

157. Further improvements are still to be made in most of the factories. In some instances it has been possible to effect certain improvements by the removal of obstructions, by re-arrangements, by the provision of more windows and sky-lights and the installation of fluorescent strip lighting. In many others extensive reconstruction is necessary.

158. During the year four new factories have been established. A steel mill at Woodlands Road 12 m.s., a sago factory at Jurong Road 9 $\frac{3}{4}$ m.s., an asbestos paste factory at Clementi Road 10 m.s. and a cooking fat packing factory at Chua Chu Kang Road 12 m.s.

159. Table 32 gives a list of the various types of industries functioning in the rural area during the year.

TABLE 32

INDUSTRIAL CONCERNS IN THE RURAL AREAS 1956

Rubber mills, smoke houses and rubber products ...	30
Woodworking, furniture making and sawmills ...	13
Humes, asbestos and drums and metal works ...	11
Granite quarries, brickworks and lime making ...	26
Gases and bitumin products ...	3
Rattan bleaching ...	3
Lead recovery and tin smelting ...	3
Sago washing ...	6
Chewing gum base making ...	2
Yarn and rope making ...	2
Perfume making ...	1
Battery making ...	1
Incense making ...	1
Shoe polish making ...	1
Assembly of cars and trucks ...	1
Soap making ...	15
Food factories, refining oil, sauce making, coffee grinding, food canning and vermicelli making ...	24
Pineapple canning ...	2
Bakeries and cake shops ...	20
Brewing beer and stout ...	1
Creameries and milk packing ...	2
Tannery ...	2
Candle making ...	3
Paper products ...	3
Glass and lamps making ...	1
Manure making ...	1
Total ...	178

Note:—There are a number of small family establishments where no outside workers are employed; these are not included in the above list.

TABLE 33

PROSECUTIONS DURING 1956

	<i>Number of cases</i>	<i>Fines</i> S
Municipal Ordinance, Chapter 133 (1936 Edition)—		
Under Section 194 (Hawkers' Stalls) ...	93	650
Under Section 195 (Itinerant Hawkers) ...	207	1,445
Under Section 211 (Offensive Trades) ...	34	954
Under Section 246 (Nuisance Notice) ...	3	200
Under Section 247 (Nuisance Order) ...	14	215
Under Eating House Bye-laws ...	10	130
Under Piggery Bye-laws ...	14	442
Under Perishable Food Bye-laws ...	21	735
Under Market Bye-laws ...	16	89
Food and Drugs Ordinance, Chapter 148 ...	6	1,190
Destruction of Mosquitoes Ordinance, Chapter 139 ...	8	850
Total ...	426	6,900

SEPTIC TANKS AND SANITARY INSTALLATIONS

160. The intensive rate of building development continued during 1956. Housing estates, in particular, and most of the permanent houses built by private individuals generally had a water-borne system of waste disposal as an essential requirement. Of the smaller sewage disposal plants built (i.e. below 1,000 gallons in capacity) all of them were septic tanks constructed to the standard design of the Rural Board. There were 102 of these tanks completed or still under construction at the end of the year.

161. The bigger plants were Imhoff tanks designed to serve a small group of houses or a housing estate with their own systems of minor sewers. Two of these big installations had a capacity of 42,500 gallons each, while five tanks of 10,000 gallons each were still under construction.

162. The total number of tanks big and small which were assessed and maintained by the Rural Board up to the end of 1956 was 447 with a total capacity of 597,114 gallons and estimated to serve a total population of 23,890 persons.

163. With the development of big housing estates and the construction of comparatively big sewage disposal plants of capacities exceeding 20,000 gallons, the monthly fees chargeable by the Rural Board for the maintenance of such plants was found to be too low and not commensurate with the actual labour costs involved. Further, considering the possibility of building estates winding up after all houses had been completed and sold, responsibility of maintenance of the minor sewers in the estate and the purification plant would eventually fall on the Rural Board. The existing Septic Tank Bye-laws therefore required amendments to allow for sewage fees to be levied on all owners or occupiers of houses which are connected to a Rural Board system of sewage removal. Chemical Closets still continued to be installed and eleven applications were received and approved during the year.

CHAPTER SEVEN

MATERNAL AND CHILD HEALTH SERVICE IN THE RURAL AREAS

164. The year saw a further widening of the scope of the Maternal and Child Health Services in the rural areas. With the recruitment of more Lady Medical Officers it was possible to extend medical cover to larger sections of the population. The consequence was that there was a steady increase in the number of attendances in all rural clinics, noticeably that of the pre-school child. The continued and persistent health education of parents by the staff is also beginning to bear fruit.

Staff

165. The staff of the Section consisted of 8 Lady Medical Officers, 1 Public Health Matron, 2 Area Supervisors, 6 Health Sisters, 22 Health Nurses and 60 Midwives.

Maternal and Child Health Clinics

166. There are three types of Maternal and Child Health Clinics at present, i.e.

Main clinics (resident nurse/midwives) ...	18
Midwife centres (resident midwife) ...	4
Visiting centres (non-residential) ...	24

167. The following new clinics were opened during 1956:

Main clinics ...	2	(Ama Keng and Buona Vista).
Midwife centres ...	2	(Kampong Sungei Tengah and Kampong Kuala Loyang).

TABLE 34

MATERNAL AND CHILD HEALTH CENTRES AS ON 31st DECEMBER, 1956

<i>Main Centres</i>	<i>Midwife Centres</i>	<i>Visiting Centres</i>
Buona Vista (opened 17th October, 1956—replaces Pasir Panjang)	Bulim	Tanjong Penjuru.
Holland Road	St. John's Island	Race Course.
Bukit Timah	Sungei Tengah (opened 24th August, 1956)	Princess Elizabeth Estate.
Jurong 10 m.s.	Kuala Loyang (opened 30th October, 1956)	Tanjong Kling.
Jurong 18 m.s.	(Department of Broadcasting—closed down April 1956)	Woodlands.
Bukit Panjang		Tanjong Murai.
Ama Keng (opened 10th January, 1956—replaces Lim Chu Kang)		Kampong Blukang.
Mandai		Kampong Bajau.
Thomson Road		Damar Laut.
Yio Chu Kang		Pulau Sudong.
Lim Ah Pin		Pulau Semakau.
Kim Chuan Road		Pulau Seking.
Kampong Batak		Pulau Seraya.
Ulu Bedok		Pulau Bukom Kechil.
East Coast Road		Lazarus Island.
Changi		Pulau Ayer Merbau.
Pulau Brani		Pulau Samulun.
Pulau Tekong		Pulau Ayer Merlimau.
		Sembawang 15 m.s.
		Chia Keng Village.
		Ayer Gemuroh.
		Pulau Ubin.
		Ponggol.
		Kampong Loyang.

TABLE 35

SUMMARY OF WORK DONE IN MATERNAL AND CHILD HEALTH CENTRES

Families visited by Health Nurses	...	...	34,701
Home visits by (a) Health Nurses	...	...	66,821
(b) Health Midwives	...	...	61,836
Nursing visits by midwives	...	...	45,637
Confinements attended	...	...	8,553
Mothers in labour to hospitals	...	...	671
Clinic attendances:			
Infants (0—1 year)	...	...	121,756
Children (over 1 year)	...	...	79,317
Ante-natal	...	...	62,035
Post-natal	...	...	6,708
Family Planning (new cases)	...	...	949
Family Planning (repeat cases)	...	...	2,440
Primary vaccinations	...	...	13,428
Diphtheria immunisation:			
A.P.T. 1st dose	...	...	13,524
2nd dose	...	...	10,665
Booster	...	...	641
Diphtheria immunisation:			
1st dose	...	...	6,126
2nd dose	...	...	3,665
Triple Antigen immunisation:			
Diphtheria 1st dose	...	...	851
Whooping Cough 2nd dose	...	...	575
Tetanus 3rd dose	...	...	407
B.C.G. vaccination (0—4 weeks) (July—Dec. 1956)	...	...	221
Free Milk Distribution:			
1. Milk in lbs. to ante-natal mothers	...	...	10,186 lbs.
Number of mothers	...	...	11,787
2. Milk in lbs. to children	...	...	27,487 lbs.
Number of children	...	...	31,363
3. Total number of lbs. of powdered milk	...	...	37,673 lbs.

Maternity Services

168. *Ante-natal Care.*—The numbers of mothers attending ante-natal clinics during the year increased considerably. Ante-natal sessions by midwives weekly were instituted and all cases after examination and completion of certain routine tests were referred to Medical Officers, Ante-natal sessions, for a further fuller medical examination; thereafter all cases were seen by the midwives and referred to the medical officer at certain stated intervals during the period of pregnancy.

169. Anæmia observed amongst ante-natal women arising directly from worm infestation, particularly Ascariasis and Ankylostomiasis, is still high. The problem is, of course, one of good sewage disposal. Much of the rural population has still to rely on bucket latrines. The problem is further aggravated by the fact that night soil is used as manure for agricultural purposes by the rural farmer. While education of mothers in clinics and of children in

schools would tend to diminish its incidence, there can be no proper attack on worm infestation until water-borne sewage system is available to all people of the island.

170. *Post-natal Care.*—The attendances of the mothers at the post-natal clinics were still very much below what they should be, and more must be done in the education of the women about the benefit of post-natal examinations.

171. *Domiciliary Midwifery.*—The Health Midwives either from the main clinics or the midwife centres attended to 51 per cent of the births in the rural areas. Far too many births took place before the arrival of the midwife. This was due to several causes such as delay in calling for the midwife, ignorance on the part of the mother and in some cases difficult accessibility of the case to a clinic or a midwife.

172. The Kampong domiciliary midwifery service brought more complete ante-natal care. The midwives concerned gave regular ante-natal care in their premises and sent their cases to see the Lady Medical Officer at the nearest main centre at least twice during the ante-natal period.

TABLE 36

DOMICILIARY MIDWIFERY STATISTICS—RURAL AREA

Total number of live and still births in the rural area in 1956	16,746
	1955 1956
Confinements in Kandang Kerbau Hospital ...	1,883 3,356
Confinements attended by Government midwives ...	7,852 8,553
Confinements attended by private midwives Class B	4,766 4,560

173. There were 60 Health Midwives working in the rural area in 1956. Each midwife was responsible on an average for—

- (a) 143 deliveries in the year,
- (b) 761 nursing visits in the year.

In addition to the deliveries of and nursing visits to the mothers in the rural area, the midwives continued the nursing visits of all the mothers from the rural area delivered in Kandang Kerbau Hospital and discharged after 24 hours. During the nursing visits of these midwives they took the opportunity to call on defaulters from the ante-natal clinics to encourage them to attend the clinics more regularly.

Supervision of Midwives

174. The Supervisor of Midwives was responsible for the supervision of the work of all the rural Health Midwives, Class C bidans and midwives in private practice.

175. Owing to great pressure on the hospital beds in Kandang Kerbau Hospital many of the women delivered in the hospital were discharged in the first 24 hours of their puerperium. In these cases the domiciliary midwives continued the attendance of these women in their own homes.

Social Hygiene Clinics

176. The majority of ante-natal clinics in the rural area had weekly or fortnightly services of the Social Hygiene Team attached to the Middle Road Hospital. They took all the blood samples for Kahn tests and were responsible for the treatment of cases of Syphilis or Gonorrhœa occurring amongst the ante-natal mothers. This Team also undertakes the follow-up of cases of congenital syphilis and ophthalmia neonatorum.

Child Health Clinics

177. The attendances at all the clinics increased throughout the year, particularly those of the pre-school child. Parents were encouraged to bring their infants to the clinics at special sessions. More instructions to individuals and small groups were made possible. Home nursing was taught to mothers who appeared to be only too willing to co-operate. With the co-operation of mothers results were very satisfactory. Many children were also brought by their fathers or grand-parents when their mothers were indisposed.

Immunisation

178. *Diphtheria*.—This disease was still all too present in Singapore Island. In February 1956 a diphtheria immunisation campaign was recommended and an immunisation team toured the rural area three times a week immunising children in the more remote rural kampongs.

179. *Whooping Cough*.—An increase in the number of cases of whooping cough were noted early in the year. A drive was made at first on the young babies of three months' age to immunise them against whooping cough as well as diphtheria with combined antigen.

180. *Tetanus*.—Triple Antigen is now used in all rural clinics to immunise against diphtheria, whooping cough and tetanus.

181. *B.C.G. Vaccination*.—Newborn babies under four weeks old, after written permission from the parents had been obtained, were vaccinated in the Holland Road and Buona Vista Clinics. After three months a tuberculin test was made on all the babies vaccinated, and a very high proportion of them was found to have been converted to tuberculin-positive cases.

Supervision of Transferred Children

182. The Health Sisters were responsible for informing all foster parents of transferred children noted during the course of their duties, that these children must be registered by the Social Welfare Department. They also gave advice to such parents concerning legal adoption of these children and the legalities involved.

Foster Children

183. Early in 1956 a pilot experiment was launched by the Ministry of Labour and Welfare whereby children deprived of their parents and children who were abandoned or in need of proper care could be put in the care of a registered foster mother who would be paid \$50.00 per month to look after these children. This scheme has been most successful, and a close liaison between clinic staff and the Protector (Ministry of Labour and Welfare) has been maintained. Such foster children receive free milk from the clinics and are especially supervised by the clinic staff to ensure adequate care of the child by the foster parents. All these foster parents must have a lung X-ray before being accepted under the scheme. So far the experiment has been very successful and the babies have been very well cared for. As the babies become toddlers the amount of milk allowed them is increased to 1 lb. per week which is quite adequate with a full mixed diet.

CHAPTER EIGHT

MOBILE DISPENSARY SERVICE

184. The Government Health Division operates two floating and three travelling dispensaries to meet the minor medical needs of people in the rural areas and in the islands around Singapore. The units are staffed by senior and experienced hospital assistants. They cover their area according to a fixed schedule. The travelling dispensaries are supervised by two medical officers. One of the floating dispensaries carries a mobile maternity and child health team who hold clinic sessions on the various islands.

TABLE 37

ATTENDANCES AT MOBILE CLINICS*

	1951	1952	1953	1954	1955	1956
Travelling Dispensary ...	40,010	48,153	32,454	46,032	76,381	77,068
Floating Dispensary ...	4,214	4,420	4,406	3,556	3,548	5,150
Total ...	44,224	52,573	36,860	49,588	79,929	82,218

* This return does not cover attendances at the mobile school or social hygiene dispensaries or at the maternal and child health sessions as these are covered by reports of the respective sections.

CHAPTER NINE

QUARANTINE SERVICE

185. The Quarantine Service comprises three closely related sections that were unified under a Senior Port Health Officer in December 1954; the Sections were the Marine Port Health Service, Air Port Health Service and the Quarantine Station. Dr. K. Sivam, Senior Port Health Officer, visited Europe, Middle East and the Far East on a W.H.O. fellowship.

Staff

186. The staff position at the end of the year is given in Table 38.

TABLE 38

STAFF OF THE QUARANTINE SERVICE AS ON 31ST DECEMBER, 1956

—	Health Officers	Lay Superintendent	Sanitary Inspectors	Technical Subordinates	Hospital Assistants	Midwife
Marine Port Health Service ..	3	..	1	1	1	..
Airport Health Service ..	1	..	1	..	4	..
Quarantine Station	..	1	..	2	2	1
Total ..	4	1	2	3	7	1

Marine Port Health

187. Ships arriving from ports gazetted as infected in respect of major infectious diseases are cleared by a Port Health Officer at the Quarantine Anchorage. All passengers and crew are inspected and their health certificates examined. Unberthed passengers landing in Singapore are subject to vaccination and observation at the Quarantine Station on St. John's Island; unberthed passengers in transit are not permitted to disembark.

188. Small craft arriving at the Immigration Wharf from neighbouring islands are inspected by a Sanitary Inspector. The small craft plying between Singapore and the neighbouring islands provides a potential channel for the entry of dangerous infectious diseases into the port.

189. The Port Health Officers board and inspect all pilgrim ships, hospital facilities, medical equipment and supplies prior to embarkation of pilgrims. All pilgrims were medically examined and their health certificates checked before they were permitted to board the ships. Pilgrim ships returning from Jeddah were cleared by Port Health Officers.

190. Ships with expired Deratization Certificates or Deratization Exemption Certificates were examined for evidence of rodent life and dealt with appropriately. Ships that showed evidence of abnormal rodent life were required to be fumigated before a Deratization Certificate was issued; other ships in a satisfactory state were granted a Deratization Exemption Certificate.

191. Vaccination against small-pox and inoculation against cholera were done at the Government Vaccination Centre at Kadayanallur Street and persons so immunised were issued with authenticated International Certificates. Inoculation against typhoid is also done at the Centre. Emergency vaccination and inoculations are done at the Port Health Office and the Airport Health Office.

192. Bills of Health Permits to import or export coffins containing human remains, Certificates of Health to accompany goods and other sanitary documents were issued by the Port Health Officer.

TABLE 39

SUMMARY OF WORK DONE BY THE PORT HEALTH SERVICE					
	1952	1953	1954	1955	1956
INSPECTIONS AND CLEARANCE OF SHIPS					
Ships inspected and cleared ...	1,469	1,614	1,587	1,783	1,849
Passengers inspected on ships at the Quarantine Anchorage ...	86,804	79,713	98,994	116,275	95,779
Corpses inspected ...	14	14	4	14	14
Pilgrim Ships ...	3	6	5	3	4
Pilgrims ...	2,351	1,837	1,537	2,619	2,518
Disinfection of infected vessels ...	Nil	Nil	1	Nil	Nil
Small Craft from neighbouring islands inspected and cleared ...	—	—	1,926	3,871	4,788
Passengers from small craft inspected ...	—	—	12,836	22,324	23,611
Inspection of Bum Boats ...	101	97	101	106	103
Inspection of Water Boats ...	13	14	8	6	8
RODENT CONTROL					
Ships inspected for evidence of rodent life ...	393	379	378	399	401
Ships issued with Deratization Certificate	112	100	117	104	119
Ships issued with Deratization Exemption Certificate ...	281	279	261	295	282
Rats destroyed during fumigation ...	1,163	1,427	1,083	1,192	782
Rats examined bacteriologically* ...	74	459	183	191	193
VACCINATION AND INOCULATION					
Small-pox vaccination ...	10,294	10,324	10,351	10,157	10,042
Cholera inoculation ...	11,342	10,515	10,560	10,277	10,051
T.A.B. inoculation ...	128	98	38	52	58
SANITARY DOCUMENTS					
Bills of Health ...	7,411	7,771	3,836	598	500
Permits issued to import, export or trans- ship coffins containing human remains	208	46	45	81	88
Certificates to accompany goods ...	313	273	127	118	93
Certificates issued for articles disinfected by steam ...	—	—	2	1	—

* Rats are examined bacteriologically by the City Health Department.

Quarantine Station

193. St. John's is a small island about one mile in length by $\frac{1}{2}$ to $\frac{1}{4}$ mile in breadth, situated five miles due south of the Master Attendant's Pier. A cholera scare in the early seventies led to the erection of an attap-roofed Lazaretto which was completed in November 1874, and in that month 1,300 Chinese immigrants arriving in the s.s. *Milton* with cholera were landed on the island. St. John's has remained a quarantine station ever since. It was not until 1886 however that our first Quarantine Ordinance was passed. In 1894 the plague epidemic at Hong Kong caused the erection of a plague

hospital. The quarantine station was finally laid down on its present lines in 1903 under the guidance of Dr. Brooke. There are today special isolation hospital wards for cholera, plague and small-pox, a hospital for minor infectious disease, sixteen contact camps, a dispensary and staff quarters. In its planning much of the natural beauty of the island has been preserved, but the station remains somewhat deficient in modern accommodation. The Opium Curative Centre under the jurisdiction of the Commissioner of Prisons now uses more than half of the existing premises.

194. The limited number of contact camps available for the accommodation of passengers from infected ports under observation has on a number of occasions during the year proved to be inadequate. This position is serious and the situation in the Quarantine Station is such that facilities are totally inadequate for an outbreak of major infectious disease.

TABLE 40

PASSENGERS QUARANTINED AT ST. JOHN'S ISLAND

			<i>Total</i>	<i>Chinese</i>	<i>Indians</i>	<i>Malaysians</i>	<i>Others</i>
1952	...	...	26,314	5,591	19,927	739	57
1953	...	...	22,640	8,091	14,525	4	20
1954	...	...	16,034	7,400	8,175	21	438
1955	...	...	20,537	9,965	10,469	54	49
1956	...	...	33,842	22,260	11,424	109	49

Airport Health Service

195. Paya Lebar Airport is the International Airport for Singapore. During the year the Airport was designated a Sanitary Airport under the terms of Article 19 of the International Sanitary Regulations. Fifteen international airlines make use of the Paya Lebar Airport and there were 7,862 scheduled aircraft arrivals and the same number of departures on international flights. Round-the-clock service for the clearance of aircraft and passengers from 'infected airports' has been provided by 4 Senior Hospital Assistants.

196. In addition to the medical inspection and clearance of aircraft the Airport Health Officer is also responsible for the general sanitation of the Airport. Anti-mosquito control and pest destruction is done by the Rural Health officers in close liaison with the Airport Health Officer.

TABLE 41

SUMMARY OF WORK DONE BY THE AIRPORT HEALTH SERVICE

	1952	1953	1954	1955	1956
Aircraft from infected airports ...	1,230	1,321	1,341	1,313	1,647
Passengers and crew cleared ...	35,025	39,725	39,725	45,976	71,600
Passengers isolated ...	—	—	—	—	—
Passengers under surveillance ...	510	69	41	21	67
Aircraft disinfected ...	—	—	—	—	—

New Launch

197. Details of a new Launch for the Port Health Service were finalised during the year.

Teaching

198. 99 medical students attended the Government Vaccination Centre where they were trained in vaccination techniques and in the reading of results of vaccinations.

CHAPTER TEN

THE ISLANDS

199. The inhabited islands off the coast of Singapore and administered by the Government fall into these defined groups:—

1. Western group including Pulau Seraya, Merlimau, Damar Laut, Merbau, Semulon, Pesek and Ayer Chawan.
2. (a) Eastern group (inner) including Pulau Brani, Blakang Mati, Sekijang Pelepah and St. John's;
(b) Eastern group (outer) including Pulau Seking, Semakau, Sudong, Pawai, Senang, Bukom Besar, Bukom Kechil and Sebarok.
3. Johore Straits group including Pulau Ubin, Tekong Besar and Tekong Kechil.

200. The islands in the Western group are a compact group situated off the mouth of Sungei Jurong and are surrounded by many sand banks and coral reefs. No jetties are provided at these islands and hence landing has to be done in a dinghy or shallow draft boat. Most of the population here consists of Malay fishermen, there being limited number of Chinese and Indian shopkeepers. The water supply problem in this group of islands is less acute than in the outer Eastern Group. Pulau Merbau has a good and abundant well water supply. A Malay school at Pulau Seraya serves the needs of the children of this group of islands.

201. Most of the population of the Eastern Group (inner) are employees of the Straits Trading Company, the Marine Department and the Government Health Department. Blakang Mati is a military installation under H.M. Government except for a small portion of Crown land where civilians settle as petty traders.

202. Of the Eastern Group (outer), Pulau Bukom Besar and Pulau Sebarok are occupied by Petroleum Companies. Water and medical facilities on these two islands are provided by the respective companies. Most of the inhabitants of these islands are employees of the companies.

203. A summary of the main facilities available in the islands is given in Table 42.

TABLE 42
SUMMARY OF FACILITIES ON ISLANDS

Name of Island	Population	Schools	SCHOOL CHILDREN		Maternal and Child Health Service	Dispensary Service	Anti-malarial Control	Water Supply
			Boys	Girls				
Pulau Bukom Besar (Shell Installation)	5,500	English Primary School	334	188	Provided by the Shell Co.	Hospital and Static Dispensary facilities provided by Shell Co. Resident Doctor, Hospital Assistants (2) and Midwives (2)	Some permanent Drainage and routine oiling by Shell Co.	Municipal water supplied from Singapore by water boats
Pulau Bukom Kechil	677	Malay School	45	26	Maternal and Child Health Visiting Clinics 3 times a month Midwife, Class C (private) on island	Mobile Dispensary Service 6 times a month. Alterations and improvements to existing Clinic	Some permanent Drainage. Oiling done by Shell Co., Residual spraying with B.H.C. 3 times a year	One wash-well with sub-soil drainage Two water storage tanks for collection of water Earth wells.
Pulau Sakeng	145	Malay School	20	13	Maternal and Child Health Visiting Clinics once a month Resident midwife Class C (private) on island	Mobile Dispensary Service 3 times a month	Residual spraying with B.H.C. 3 times a year	Earth wells
Pulau Sebarok (Stanvac Installation)	90	Nil.	..	..	Company makes arrangements as required	..	Nil.	Cement and earth wells
Pulau Senang	9	Nil.	..	..	Nil.	Nil.	Nil.	Rain water collected in drums
Pulau Sudong	318	Malay School	19	14	Maternal and Child Health Visiting Clinics 3 times a month Resident midwife Class C (private) on island	Mobile Dispensary Service 6 times a month	Routine oiling weekly	Three cement wells (constructed by Health Department) Water supply problem under investigation
Pulau Pawai	72	Nil.	..	..	Islanders make use of facilities provided at Pulau Sudong	..	Nil.	Earth wells Two cement wells constructed by Health Department

TABLE 42—continued

Name of Island	Population	Schools	SCHOOL CHILDREN		Maternal and Child Health Service	Dispensary Service	Anti-malarial Control	Water Supply
			Boys	Girls				
Pulau Semakau ..	287	Malay School ..	34	21	Maternal and Child Health Visiting Clinic 3 times a month Resident midwife Class C (private) on island	Mobile Dispensary Service 7 times a month	Routine weekly oiling ..	Two tube wells and 2 concrete wells constructed by Health Department Earth wells Water supply problem under investigation
Pulau Sekijang, Pelepah and others uninhabited	271	Malay School ..	42	18	Maternal and Child Health Visiting Clinic 4 times a month Resident midwife Class C (private) on island Government midwife Class B from Quarantine Station available for work on this island	Mobile Dispensary Service 4 times a month Islanders go across to Pulau Sekijang, Bendera, the Quarantine Station for emergencies	Extensive Permanent drainage works Routine oiling weekly	Two A.M. wells and 1 reconstructed well done by the Health Department
Pulau Sekijang Bendera (St. John's Island)	380	English Primary School	..	..	Island is the Colony Quarantine Centre, and full medical care is available	Quarantine Station and Opium	Extensive Permanent drainage	Municipal water from Singapore in water boats
Pulau Seraya ..	299	Malay School ..	29	33	Maternal and Child Health Visiting Clinic 4 times a month Resident midwife Class C (private) on island	Mobile Dispensary Service 8 times a month	Residual spraying with B.H.C. 3 times a year	Two tube wells constructed by Health Department Earth wells
Pulau Semulon ..	322	Nil. (Attend at Tanjung Kling School)	..	..	Maternal and Child Health Visiting Clinic 4 times a month	Mobile Dispensary Service 8 times a month	Residual spraying with B.H.C. 3 times a year	One tube well constructed by Health Department Earth wells. Water also obtained from standpipe on mainland about ½ mile away

TABLE 42—continued

Name of Island	Popula- tion	Schools	SCHOOL CHILDREN		Maternal and Child Health Service	Dispensary Service	Anti-malarial Control	Water Supply
			Boys	Girls				
Pulau Ayer Merbau ..	65	Nil. (Attend at Tanjong Kling School)	..	..	Maternal and Child Health Visiting Clinic, once a month Resident midwife Class C (private) on island	Mobile Dispensary Ser- vice, twice a month	Residual spraying with B.H.C. 3 times a year	Earth wells
Pulau Ayer Chawan Pulau Pesik .. Pulau Sekira .. Pulau Sebueros and other islands un- inhabited	33 15 20 4	Nil. Nil. Nil. Nil.	..	..	Islanders go to Tanjong Pulau Seraya for	Kling, Pulau Semulon or r these facilities	Residual spraying with B.H.C. 3 times a year	Earth wells
Pulau Ayer Merlimau	115	Nil. (Attend at Tanjong Kling School)	..	..	Maternal and Child Health Visiting Clinic, once a month Resident midwife Class C (private) on island	Mobile Dispensary Ser- vice, twice a month	Residual spraying with B.H.C. 3 times a year	Earth wells
Pulau Damar Laut ..	95	Nil. (Attend at Tanjong Kling School)	..	..	Maternal and Child Health Visiting Clinic, once a month Resident midwife Class C (private) on island	Mobile Dispensary Ser- vice, twice a month	Residual spraying with B.H.C. 3 times a year	Rain water collected in storage tanks Two standpipes on main- land at Tanjong Kling
Pulau Brani ..	2,200	Malay School .. Chinese School ..	191 48	154 28	Maternal and Child Health midwife Clinic with Resident Govern- ment midwife, Class B Medical Officer visits island 4 times a month	Static Dispensary with Resident Hospital Assistant	Permanent drainage and routine oiling weekly (Scavenging and con- servancy services avail- able)	Municipal water supply by undersea main from mainland

TABLE 42—continued

Name of Island	Population	Schools	SCHOOL CHILDREN		Maternal and Child Health Service	Dispensary Service	Anti-malarial Control	Water Supply
			Boys	Girls				
Blakang Mati ..	405	Malay School .. Chinese School ..	39 25	30 33	Dispensary and Clinic at population here	Pulau Brani serve the here	Permanent drainage and routine oiling weekly	Municipal water supply
Pulau Tekong Besar .. Pulau Tekong Keehil (No facilities exist on Pulau Tekong Keehil, and the islanders come over to Pulau Tekong Besar for their needs)	4,500 ..	English School .. Malay Schools (2) Chinese Schools (3)	180 62 166	78 52 109	Maternal and Child Health midwife Clinic with 2 Resident Government midwives Class B Medical Officer visits weekly	Cottage Hospital Static Dispensary with Resident Hospital Assistant Medical Officer visits weekly	Some permanent works Routine oiling control (Scavenging and conservancy services available. Overhung latrines under construction at Kampong Selabin)	Four concrete wells constructed by Health Department Earth wells
Pulau Ubin ..	1,828	Malay School .. Chinese School ..	29 167	29 96	Maternal and Child Health midwife Clinic with a Government Resident midwife Class B on the island	Mobile Dispensary Service 4 times a month	Routine oiling control ..	Two concrete wells constructed by Health Department Earth wells

Note:—The Maternal and Child Health Visiting Clinics have a Medical Officer, Health Nurse and Midwife in the team. The Mobile Dispensary Service is provided by experienced Senior Hospital Assistants.

CHAPTER ELEVEN

SCHOOL HEALTH

204. The School Health Service is centrally administered in Singapore. At the end of 1956 there were 624 schools in the colony; this excludes the miscellaneous schools (e.g. religious, commercial, sewing, etc.).

205. During the year 29 new schools were opened in Singapore and many of the existing schools carried out alterations and extensions to enlarge their premises, consequently there was a considerable increase in the school population. There were approximately 47,000 new entrants into the schools and, as a proportionately much smaller number of children finished schooling at the end of 1955, the total school population rose from 204,154 in 1955 to 235,079 by the end of 1956, showing an increase of 30,925. A classification of Government, Government Aided and Private Schools, together with the enrolments for 1955 and 1956, is shown in Table 43. The geographical distribution of schools and the enrolment of Government and Aided Schools as compared with private schools are given in Tables 44 and 45.

TABLE 43
SUMMARY OF SCHOOLS AND SCHOOL POPULATION

Type of Schools	No. of Schools		ENROLMENT					
			1955			1956		
	1955	1956	Boys	Girls	Total	Boys	Girls	Total
<i>Government Schools:</i>								
(a) English ..	120	144	38,371	18,361	56,732	45,382	24,939	70,321
(b) Malay ..	62	64	6,609	4,822	11,431	6,943	5,398	12,341
(c) Trade ..	1	2	197	..	197	443	..	443
<i>Aided Schools:</i>								
(a) English ..	50	53	14,411	14,461	28,872	15,938	14,405	30,343
(b) Chinese ..	217	222	56,328	30,940	87,268	62,350	38,729	101,079
(c) Malay ..	1	1	72	92	164	80	86	166
(d) Tamil ..	18	18	464	794	1,258	517	809	1,326
(e) Technical ..	1	..	202	..	202	..	..	..
<i>Non-Aided Schools:</i>								
(a) English ..	69	69	6,870	4,184	11,054	7,631	4,208	11,839
(b) Chinese ..	56	51	4,030	2,946	6,976	4,279	2,942	7,221
Total ..	595	624	127,554	76,600	204,154	143,563	91,516	235,079

TABLE 44

GEOGRAPHICAL DISTRIBUTION OF SCHOOLS

	<i>City</i>	<i>Rural</i>	<i>Islands</i>
Government and Government Aided Schools	292	190	22
Private Schools	105	13	2

TABLE 45

DISTRIBUTION OF SCHOOL POPULATION

<i>Government and Government Aided Schools</i>	<i>Private Schools</i>	<i>Total</i>
216,019	19,060	235,079

Staff

206. At the end of 1956 the staff of the section consisted of one Health Officer-in-charge Schools, four Health officers, six Lady Health Officers, two School Tuberculosis Officers one Matron, three Sisters, sixteen Nurses, five Hospital Assistants and one Laboratory Assistant. Dr. S. M. Young, M.B., B.S. (U. Melb.) was the Health Officer-in-charge Schools.

TABLE 46

SUMMARY OF SCHOOLS, SCHOOL POPULATION, CHILDREN EXAMINED AND HEALTH OFFICERS 1952-1956

	1952	1953	1954	1955	1956
Registered Schools ...	517	509	585	595	624
Students	155,464	161,076	184,148	204,154	235,079
Students examined ...	41,181	51,302	46,943	63,424	69,644
Health Officers* ...	7	8	8	12	13

Note:—* During 1952-55 one School Health Officer was in charge of Tuberculosis work; in 1956 two School Health Officers were engaged in this work.

ROUTINE MEDICAL EXAMINATION

General

207. Medical examinations of children were carried out by the School Health Officers in Government and Government Aided Schools only. There were no examinations undertaken in private schools although the children from these schools attended the school clinics which are open to all school children.

208. As a routine the Health Officers examined (a) new entrants, (b) Primary and Secondary School leavers and (c) defectives found at previous examinations. In Table 49 these examinations are listed as "New Entrants", "Leavers" and "Re-examinations" respectively. During the visit to the school the staff were encouraged to refer any children who were not due for routine periodic examination but whose physical or mental progress appeared to be below normal; these children have been listed as "Others" in Table 49.

209. An invitation to be present at the medical examinations was issued to all parents of children in the Primary I classes; it is quite impossible to obtain an accurate history of past illnesses, previous inoculations, etc. from children aged 7-8 years, and it also affords an excellent opportunity for the Health Officers to advise the parents on hygiene and diet.

210. Out of a total of 504 Government English and Government Aided Schools, 459 were visited by either a Health Officer or a Lady Health Officer or both. The Health Officers examined the boys in 415 schools and Lady Health Officers examined the girls in 449 schools. The total number of children examined was 69,644, which represents approximately one third of the school population in Government English and Aided Schools. It was considered particularly important to examine the new entrants in order to diagnose and treat defects as early as possible and, where time was limited, the Health Officers concentrated on this group. According to the Ministry of Education nearly 47,000 children entered school for the first time in 1956; of these 41,013 were examined during the year by the School Health Officers.

TABLE 47

CLASSIFICATION OF SCHOOLS INSPECTED BY SCHOOL HEALTH OFFICERS

<i>Schools</i>	<i>City</i>	<i>Rural</i>	<i>Islands</i>	<i>Total</i>
Government English ...	94	43	2	139
Aided English ...	32	10	—	42
Government Chinese ...	2	—	—	2
Aided Chinese ...	89	114	4	207
Malay ...	24	17	11	52
Tamil ...	11	6	—	17
Total ...	252	190	17	459

TABLE 48

CLASSIFICATION OF CHILDREN EXAMINED

<i>Schools</i>	<i>Boys</i>	<i>Girls</i>	<i>Total</i>
Government English ...	15,304	10,850	26,154
Aided English ...	3,135	3,541	6,676
Government Chinese ...	—	230	230
Aided Chinese ...	16,445	14,611	31,056
Malay ...	2,288	2,374	4,662
Tamil ...	381	485	866
Total ...	37,553	32,091	69,644

TABLE 49

CLASSIFICATION OF EXAMINATIONS DONE

	<i>Boys</i>	<i>Girls</i>	<i>Total</i>
New Entrants ...	23,135	17,878	41,013
School Leavers ...	9,455	4,725	14,180
Others ...	2,802	4,335	7,137
Re-examinations ...	2,161	5,153	7,314
Total ...	37,553	32,091	69,644

GENERAL HEALTH

211. The School Health Officers, generally, expressed the view that there is a slow but steady improvement in the health of the school children of Singapore and that this is most noticeable among the older age group. Apart from dental caries and defective vision, a much higher percentage of defectives were found among the new entrants and generally speaking the incidence of poor nutrition is more prevalent in this age group.

Defects found during medical examinations and re-examination of Defectives

212. *Dental Caries* is still the most common defect found, and over 50 per cent of all children examined had carious teeth of varying severity. Although a second Mobile Dental Clinic was added to the School Dental Service in 1956, the Government facilities for conservative treatment and, for that matter, any treatment, are extremely limited. Children in the Urban areas were advised to attend private dentists, but parents on the whole are reluctant to follow the advice unless the child is in pain and, as far as children in Rural areas are concerned, treatment is practically non-existent.

213. *Skin Infections* are more common among the girls, particularly the fungus infections. Scabies is definitely on the decline.

214. *Eyes*.—Conjunctivitis was the most common eye infection and the majority of cases were successfully treated at the school clinics. Cases of trachoma or suspected trachoma were referred to the Ophthalmic Unit at the General Hospital. Defective vision was found more among the older children; the racial incidence was highest among the Chinese. Most cases were referred to their own optician for refraction and fitting of spectacles; in the case of parents of the lower income group the children were sent to the Hospital for refraction, and 97 children were recommended to the Ministry of Education for free glasses.

215. *Ear, Nose and Throat*.—A number of children were found to have enlarged tonsils and parents were instructed with regard to conservative treatment. In cases where the general condition of the child was below normal or there was a history of repeated "sore throats" the child was referred to the E.N.T. Unit at the General Hospital for consultation. Sinus infections were comparatively rare and also infections of the middle ear; these were generally chronic cases and were referred for treatment. There were six cases of deafness reported.

216. *Organic Vascular Heart Disease*.—Again the most common congenital heart defects were the ventricular septal and the patent ductus arteriosus. Although a history of a previous rheumatic infection is very difficult to obtain, most of the acquired cardiac conditions were obviously rheumatic in origin.

217. *Respiratory Infections*.—Infections of the upper respiratory tract were found mainly among children in the Urban area, where cramped living conditions and poor ventilations are common. Children with a history of chronic coughs and poor physical development were Mantoux tested and sent for radiologic examination.

218. *Genito-urinary*.—Phimosis, hydrocele and inguinal hernia were the more common defects found among the boys. Where the parents were agreeable the boys were referred to the Surgical Units at the General Hospital.

219. *Anæmia*.—Children suffering from gross anæmia were found mainly among the rural population; ankylostomiasis and poor nutrition were the main contributing causes.

220. *Worm Infestation.*—Inadequate sanitation, the use of nightsoil as garden manure and the fact that a number of children go barefooted accounts for the much higher incidence of worm infestation among children in the rural schools.

TABLE 50

INCIDENCE OF DEFECTS DETECTED IN ROUTINE SCHOOL
MEDICAL EXAMINATION

(FIGURES FOR INCIDENCE OF DEFECTS EXPRESSED AS PERCENTAGES)

			1954	1955	1956
Dental Caries	...	Boys	36.84	50.09	51.67
		Girls	45.88	54.83	51.78
Skin Infection	...	Boys	9.18	8.72	7.51
		Girls	35.72	41.3	22.08
Eyes: Infection	...	Boys	2.75	2.26	1.73
		Girls	2.27	1.5	1.03
Defective vision	...	Boys	4.30	3.09	3.46
		Girls	8.19	3.6	2.54
E.N.T.: Enlarged tonsils	...	Boys	4.55	4.16	4.21
		Girls	1.94	0.93	0.75
Ear infection	...	Boys	0.24	0.45	0.67
		Girls	0.15	0.19	0.29
Cardiac Disease	...	Boys	0.13	0.16	0.34
		Girls	0.74	1.46	0.82
Respiratory Infection	...	Boys	0.93	2.17	2.92
		Girls	8.48	10.87	6.62
Genito-Urinary	...	Boys	1.9	2.13	2.33
		Girls	0.09	0.14	0.08
Anæmia (under 60 per cent Hb.)	...	Boys	1.6	1.36	1.61
		Girls	2.41	3.5	4.31
Worm Infestation	...	Boys	2.1	6.42	8.84
		Girls	19.45	28.63	22.64
Other abnormalities including postural defects, Cleft Palate, Chest deformities	...	Boys	0.2	0.56	0.68
		Girls	8.21	9.42	8.55
Children Examined:		Boys	21,674	36,232	37,553
		Girls	25,269	27,192	32,091

Personal Hygiene

221. The general cleanliness of the children was only fair and, until hygiene is taught as a practical rather than an abstract subject, there is not likely to be much improvement. Pediculosis was still rampant among the Malay schools and not enough attention was paid to the care of the teeth and finger nails in most of the schools.

SCHOOL GENERAL CLINICS

222. The School Health Service runs one main clinic at the North Canal Road, which is open daily and three subsidiary clinics in the outer urban and rural areas, which function on certain afternoons only. The year's records show an overall increase in the number of children attending at the various clinics during 1956.

TABLE 51

ATTENDANCES AT SCHOOL CLINICS

	1952	1953	1954	1955	1956
Total No. of new cases ...	12,197	15,319	19,266	29,283	39,012
Total No. of re-visits ...	18,368	22,438	29,148	40,804	50,337
Total ...	30,565	37,757	48,414	70,087	89,349

223. The School Health Officers each have a regular morning and afternoon session at the main clinic in order to follow up their own cases. In the subsidiary clinics the Health Officers responsible for the schools in the area served by the particular clinic are in attendance at each clinic session.

North Canal Road Clinic

224. The Main School clinic was housed in the former Government outdoor Dispensary at North Canal Road. With the steady increase in attendances during the year the accommodation which had been grossly inadequate in 1955 was even more so in 1956.

225. In addition to the general clinics, three clinics a week were held by the School Tuberculosis Officer for children suffering from primary tuberculosis complex.

Paya Lebar Clinic

226. Two afternoon sessions per week were held at the Paya Lebar Outdoor Dispensary in Upper Serangoon Road. This clinic caters for children attending schools in the Northern and Central part of the Island and is generally well attended.

Telok Kurau Clinic

227. This clinic functioned on one afternoon per week; the boys were examined by a Health Officer at the Telok Kurau English School and the girls by a Lady Health Officer in the Malay Girls' School. As the two schools are next door to each other the same nursing staff serves both doctors.

Bukit Timah Clinic

228. One weekly clinic session was held at the Government English School, Bukit Panjang, until July. Thereafter until the end of the year the clinic was held in the premises of the Youth Club at Bukit Timah.

Laboratory Investigation

229. The North Canal Road Clinic is equipped with a small laboratory and simple routine examinations are carried out. 8,948 investigations were done in 1956.

School Travelling Dispensary

230. The School Travelling Dispensary was in charge of one Health Sister, assisted by a Health Nurse. The van visited the rural schools during the year for minor treatments, to follow up cases referred by School Health Officers; they also vaccinated new entrants in both Rural and City Schools. 550 visits were made to schools and 46,706 treatments were given.

Cases Referred From School Clinics

231. 1,985 cases were referred to specialists and 1,485 cases were referred to various institutions.

SCHOOL CHEST SECTION

232. The aim as before has been detection of infection as early as possible. This is done by—

- (1) The routine radiologic examination of all "Blister" reactions found by the B.C.G. team.
- (2) The routine radiologic examination of all new teachers, school servants and hawkers and the re-examination of these adults as often as is possible (the aim, not always achieved, being every two years).
- (3) The referral of all school children contacts of new cases at Tan Tock Seng's Hospital by the Health Sister. Until recently these children have all had radiologic examination at the first visit. During 1957 only those who are tuberculin positive will have radiologic examination; negative cases will be given B.C.G. and followed up by re-testing until they convert, and after that will be tested annually.
- (4) The routine radiologic examination of all school contacts of known infected teachers and fellow-pupils. During 1957 all school contacts will be tuberculin tested first and only positive reactors will have radiologic examination. Negative cases will receive B.C.G.
- (5) The detection and referral of cases by the doctors conducting the ordinary school clinics and doing routine medical inspections. Most of these children have symptoms and signs.

233. *School Teachers.*—The expansion of the Education programme in Singapore has resulted in increasing numbers of new teachers being engaged in Government, Government Aided and Private Schools. The investigation and assessment of chest shadows picked up on routine radiologic examination of school teachers has increased. Those found to be inactive together with those already treated and fit to resume teaching are placed under the surveillance of this section.

234. *Summary of Cases.*—During 1956, 264 children were found with active primary infection and 29 with chronic tuberculosis; of these latter, two had positive sputa. There were 330 healed cases and 608 cases still under assessment. A large number of these latter had evidence of healed primaries but their main complaints were due to recurrent upper respiratory tract infections, allergic rhinitis, enlarged tonsils and adenoids and asthma. There were 23 cases of bone and joint tuberculosis.

235. One teacher was found with an active progressive primary infection, 38 had chronic tuberculous disease (5 with positive sputa) and 59 had healed or quiescent lesions. 84 were still under assessment—majority of these will probably be quiescent. There was no new case of bone or joint tuberculosis.

236. Of the school servants (including canteen workers, hawkers) 12 had chronic tuberculosis (2 with positive sputa) 26 had healed or quiescent disease and one had Pott's disease. 28 cases were not yet fully assessed.

237. *Treatment.*—All cases showing heavy primary infection, even though apparently healed, are carefully watched during the first year and at longer intervals thereafter. All cases believed to be recently infected and showing signs of activity are treated. Cases of primary infection with complications such as segmental collapse or pleural effusion are usually taken over by the Chest Physician at Tan Tock Seng's Hospital. This applies also to cases with hæmatogenous spread. Cases of bone and joint disease are referred

to the Orthopædic Department. Cases of chronic pulmonary tuberculosis in school children have nearly always been found to be active and are taken over by the Chest Physicians and returned to the care of this section as soon as they are back at school again.

238. Clinics were held at North Canal Road three times a week, at Tan Tock Seng's Hospital twice a week and at Paya Lebar once a month. Attendances at these clinics have continued to increase steadily. The number of radiologic examinations done on those attending the chest clinics was 13,394.

239. *Feeding Scheme.*—This scheme was originally started for children with primary tuberculosis whose general condition was poor. It was soon found, especially amongst the contacts of tuberculosis patients that although the child was malnourished he or she was often still tuberculin negative. These children were then given B.C.G. vaccination and put on the feeding scheme to build up their resistance. During the year a number of children who had either leprosy alone or both leprosy and tuberculosis were put on the scheme; also contacts of leprosy patients who were malnourished. An increasing number of school children with bone and joint tuberculosis were put on the scheme together with malnourished post-polio children. The total number of cases who received feeding during the year was 300. The 'feeding' consists of a fortnightly distribution of the following:—

- | | |
|---|--|
| (1) 1 lb. full cream powdered milk | } all well mixed before
distribution. |
| $\frac{1}{2}$ lb. vitaminised skimmed milk powder | |
| $\frac{1}{4}$ lb. ovaltine for flavouring | |
| (2) $\frac{1}{2}$ lb. fresh butter. | |
| (3) 6 fresh eggs. | |
| (4) 6 oranges. | |
| (5) 1 lb. of shelled peanuts. | |

TABLE 52

ATTENDANCE AT SCHOOL CHEST CLINICS

	1954	1955	1956
Total attendances	14,235	16,308	21,828

240. *B.C.G.*—The B.C.G. Team during this period consisted of a Health Officer, 5 Health Nurses and 1 Clerk. The campaign initiated by W.H.O. in 1951 has continued on the same lines as before, that is in every school tuberculin testing and B.C.G. vaccination was offered to every child. Secondary as well as Primary Schools were visited. Nearly all the schools in the Colony have now had a visit since 1951. During the year five schools were visited again, fresh cards were issued and all children, including those found to have been positive at the previous visit were re-tested. An alternative system is proposed in 1957. Only Primary I and Primary VI children will be tested and offered B.C.G. vaccination. Secondary Schools will not be visited. When a school has been done before only those children not tested on the last occasion and new intakes, together with those who were given B.C.G. vaccination on the previous visit, will be tested and given B.C.G. vaccination if they are suitable. In the case of the smaller schools, particularly those in the rural areas, it is probable that the Team will visit, test and give B.C.G. vaccination to the whole school and only return to the area every 2 to 3 years.

241. During the year B.C.G. vaccination was carried out in 56 schools; this number was made up of 14 Government English schools, 30 Chinese schools, 8 Malay schools and 4 private schools. Although fewer schools were visited compared with 1955 when 76 schools were visited, more tuberculin tests and B.C.G. vaccinations were performed.

TABLE 53

TUBERCULIN TESTS AND B.C.G. VACCINATIONS

1955	...	1st Tests	Mantoux 10 T.U.	9,221	B.C.G. Vaccinations	3,274
1955	...	Re-tests	Mantoux 10 T.U.	2,932	B.C.G. Vaccinations	919
1956	...	1st Tests	Mantoux 10 T.U.	11,068	B.C.G. Vaccinations	6,305
1956	...	Re-tests	Mantoux 10 T.U.	2,835	B.C.G. Vaccinations	598

242. The Team has continued to test and give B.C.G. vaccination every month to the contacts of Tan Tock Seng's Hospital patients. 3,876 contacts were tested in the year and 1,925 received B.C.G. vaccination. The inmates and workers of two Convent Orphanages and 4 Homes under the care of the Salvation Army were also tested and given B.C.G. vaccination. 125 cases at the Hansen's Clinic were tested and 74 received B.C.G. vaccination. Wives and children of the Police Gurkha Contingent were also tested; of the 347 tested 146 were women aged 17-40. Of these only 83 (57 per cent) were tuberculin positive.

243. Of the 2,835 children retested with 10 T.U. after B.C.G. vaccination 2,205 showed a positive reaction, giving a conversion rate of 77.8 per cent. The figures for 1955 and 1954 were 70.7 per cent and 58.8 per cent respectively. As would be expected the conversion rate amongst contacts is very much higher than amongst others—noticeably institutional children.

244. *Complications.*—Reports of complications have been few. The frequency and extent of keloid formation especially amongst Chinese children remains high and is often unsightly.

INFECTIOUS DISEASES

245. Infectious diseases in school children were reported to the School Health Service by the City Health Officer, general practitioners and by principals of schools. Cases were detected during visits of children to clinics or by school nurses visiting homes of absent children. The number of cases of infectious diseases reported among school children during the last five years is given in Table 54.

TABLE 54

INFECTIOUS DISEASES IN SCHOOLS

		1952	1953	1954	1955	1956
Cerebro Spinal Fever	...	—	—	3	—	—
Chicken-pox	...	526	687	683	1,567	726
Diphtheria	...	38	45	68	43	61
Dysentery	...	—	—	4	2	18
Leprosy	...	22	36	18	13	7
Malaria	...	—	—	6	—	1
Measles	...	445	503	433	335	349
Mumps	...	436	234	488	588	306
Poliomyelitis	...	—	1	4	2	—
Typhoid Fever	...	14	4	13	3	2
Whooping Cough	...	4	34	4	35	11

246. *Home and School Visiting.*—Homes and schools were visited by the Health Nurses of the School Chest Clinic, the Travelling Dispensary and the North Canal Road Clinic. They were responsible for the following:—

- (1) to investigate and follow up cases of tuberculosis.
- (2) to investigate cases of infectious diseases reported by the City Health Officer, the Rural Health Officer and School Principals;

- (3) to take throat swabs of all indirect class contacts of cases of diphtheria reported by the City Health Officer and the Rural Health Officer. (3,383 throat swabs were taken in 1956 as compared with 2,409 in 1955).
- (4) To vaccinate new entrants. (23,875 new entrants were vaccinated in 1956, compared with 14,589 in 1955).

ENVIRONMENTAL HYGIENE IN SCHOOLS

247. Further progress was made in the field of environmental hygiene and sanitation of the schools during 1956. Many of the small vernacular schools, particularly in the rural areas, accepted full Government aid, and being in a better financial position were able to carry out improvements and extensions to their school buildings.

248. From the point of view of environmental hygiene all schools, including Commercial Institutions, dress-making schools, etc, come under the School Health Service, and regular inspection of premises was made. 453 inspections were made and 287 reports were submitted to the Ministry of Education. All plans either for new school buildings or alterations to existing school buildings were referred to this section for comments and recommendations; 58 plans were submitted and approved. 18 buildings were inspected prior to their registration as private schools; 2 of these were not recommended as the premises were unsuitable.

249. *School Buildings.*—There were 24 new Government English Schools completed and opened in 1956. Most of the large Aided English Schools have long term building programmes for extending their premises, and a marked improvement in school buildings generally was observed.

250. *Sanitation.*—The Rural Schools in the more remote areas still present a problem, as in these areas nightsoil is removed only once or twice a week. Education of children in the correct use of lavatories and proper supervision of the latrine blocks by school staff is inadequate.

251. *Tiffin Sheds.*—With the exception of a few schools, there was inadequate supervision of the canteens by school staff. In a number of the schools visited the hawkers were found cooking in the main hall of the canteen, and food was left uncovered.

252. *Overcrowding.*—There was not much evidence of overcrowding in the schools in 1956, and in the instances found the schools were reported to the Ministry of Education. During the year 296 accommodation certificates were issued.

School Milk Scheme

253. Towards the end of the year the Social Welfare Department decided to re-introduce the distribution of milk powder to school children recommended by the School Health Officers. A list of the number of children recommended in each school is forwarded to the Social Welfare Department who notify the Principal of the school when the milk is ready to be collected. It was considered that only those Principals who were sufficiently interested and would see that the children were given the milk daily would bother to collect their supply and by this procedure the excessive wastage which had occurred with the old scheme would be prevented. The scheme was only introduced during the last term of the school year and 5,029 children were recommended.

New Building

254. Work on the Institute of Health (former Urban Health Centre) Building began towards the end of 1955. The School Health Service will be accommodated in this building which is expected to be ready in 1957.

Conclusion

255. The work of the School Health Service has been seriously handicapped in all sections, by a grossly inadequate number of Health Nurses. The School Health Nurse is the backbone of any School Health Service and until there are sufficient Health Nurses to carry out regular systematic visits of schools, to follow up cases referred by Health Officers and to carry out regular medical inspections and treat minor ailments in the schools, the School Health Service of Singapore will not be able to provide the complete and comprehensive service it should.

SCHOOL HEALTH SERVICE

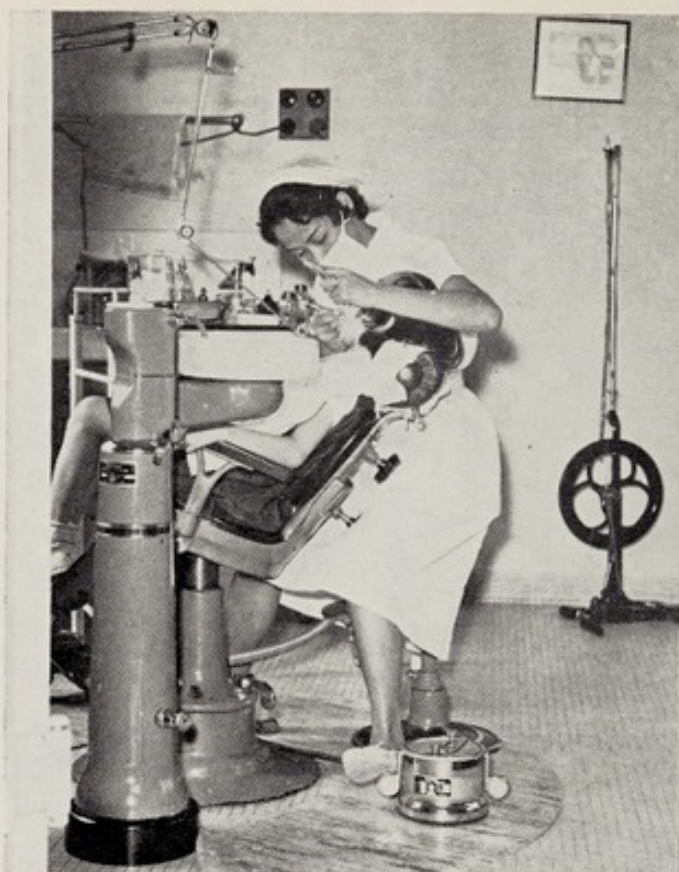


Travelling Dispensary Service to Schools



Paya Lebar Outdoor Dispensary where part-time School Clinic sessions are held

DENTAL HEALTH



Dental Nurse at work in School Dental Clinic



Extension to General Hospital Dental Clinic completed in 1956 provides improved facilities for treatment of patients and teaching of dental students

CHAPTER TWELVE

DENTAL HEALTH

256. The Dental Section underwent greater expansion in 1956 than in any previous year, and the number of posts was increased so that there was an establishment of the following: Chief Dental Officer, Inspecting Officer, Dental Board and 35 Dental Officers and Housemen. This represents an increase of 13 Dental Officers and of these posts 32 are now filled. Mr. N. H. Gittins, F.D.S., R.C.S. (Eng.) was the Chief Dental Officer.

CLINICAL DENTISTRY

Schools Division

257. This continued in the same premises during the year and figures of results achieved are given in Table 55. The main centre for school treatment continued to be at Tan Tock Seng's Hospital. Dental Nurses were employed in four schools and two Mobile Dental Clinics. During the year a new dental nurse clinic was opened at Rangoon Road School.

258. Included in the Schools Division, although strictly not school dentistry, is the dental treatment provided for children attending Children's Social Centres. A clinic had previously been established at the Centre at Sims Avenue and during the year a second such clinic was opened at the Centre at Siglap. The Dental Officer here undertook treatment for children attending the centre and from other centres.

259. The school Mobile Dental Clinic was put on the road in October. This means that there are now ten school buildings, i.e. 20 actual schools, which are under systematic treatment by Mobile Dental Clinics. Unfortunately one session per week, provided by a dental officer and a dental nurse, does not aggregate very many manhours throughout the school year, and therefore it is not possible to carry on treatment of each child for very long. However, it is hoped that the very presence of a mobile clinic at a school from week to week, and the influence of the dental staff will lead to an improvement in the awareness of children of the importance of oral hygiene and dental health.

260. A dental officer left for Christmas Island in November and was still there at the end of the year. It is gratifying to be able to report the resumption of regular visits to this Island for the treatment of schoolchildren.

261. The dental nurse scheme, which has become part of the pattern of the Schools Division, received a check in development during 1956 when four posts were abolished from the Estimates. Before the end of the year, as a result of further consideration, it was agreed to resume the expansion of the dental nurse scheme. Dental nurses have been employed since 1951 and have proved their value in the treatment of children. It is hoped that in the future it will also be possible to employ them in dental clinics attached to Maternity and Child Health Centres for the treatment of pre-school children.

Hospitals Division

262. *General Hospital.*—As in previous years 12 dental officers and housemen were attached to the Dental Clinic, which maintains the clinic at the General Hospital. The Dental Clinic faces a growing public demand for

treatment and good use can be made of this staff, but there is a limit to the number of dental surgeons who can be employed in this establishment, and this limit has now been reached.

263. The Professor of Dental Surgery, Prof. R. J. S. Tickle D.D.S., L.D.S., R.C.D.S., M.Sc. (Dental) reports as follows:—

(i) The Dental Clinic is the training school for Dental students at the University of Malaya.

(ii) Table 55 gives detailed figures for the work done during 1956, and Table 56 shows the comparative figures from 1951 to 1956. The figures again demonstrate an increase in the number of out-patients handled by this Clinic—82,107 in 1955 to 99,004 this year, a 20.5 per cent increase. In particular, attendances by children increased by 24 per cent, and children now comprise 40 per cent of the total out-patients. This increase can be largely attributed to the recent policy of giving free treatment to all children up to school leaving age. New cases rose from 27,895 to 32,547, a 17 per cent increase and the daily average of out-patients attendances increased from 278 to 334 or an approximate 20 per cent. The increase in the number of replacements in the form of full or partial dentures amounted to 25 per cent. Table 56 indicates the surprising upward trend during the past 6 years at all levels.

(iii) The request for treatment continues to be extremely heavy and has resulted in long waiting lists for certain types of work. To just what extent the standard of work at the Dental Clinic is responsible for this demand, or whether it is partly due to the availability of free or relatively free treatment, is difficult to ascertain, but we have reason to hope and believe that there is now a greater appreciation of good Dentistry amongst certain patients.

(iv) The relief of pain continues to be one of the most important demands. The number of patients having extractions has decreased amongst adults and slightly increased amongst children although the average number of teeth extracted per child has decreased. The total number of fillings completed for children has increased by some 35 per cent.

(v) The general preventive and conservative programmes for adults are largely carried out by students as part of their teaching requirements and therefore the overall totals have not greatly increased.

(vi) The general policy is free treatment when patients are unable to pay; in other cases patients only pay for the cost of materials. The revenue, therefore, has increased only slightly, largely due to the increased attendances from children who are treated without cost.

(vii) One dental officer was posted to the Prosthetic Department of the Dental School by arrangement with the Professor of Prosthetic Dentistry in order to equip him with a more extensive knowledge of this subject. This officer also undertakes general supervision of the training of Government dental technicians and of the making and fitting of dentures at a number of establishments.

264. *Other Hospitals.*—A new clinic was opened at Trafalgar Home in June, and proposals were also put forward for the establishment of up-to-date clinics at Tan Tock Seng's Hospital and Woodbridge Hospital. The Dental Officer, Chronic Sick, continued to divide his time between these three institutions, but it is intended that in the near future there should be one Dental Officer for each chronic hospital.

Maternity and Child Health Division

265. Dental treatment continued to be given in three centres during 1956. A fourth clinic was opened for part-time use at Ama Keng Centre in May.

Miscellaneous Appointments

266. The Dental Officer, Police, continued to work at the clinic in South Bridge Road. He also visited Changi Prison weekly to provide treatment for the relief of pain and other emergencies.

TABLE 55
DENTAL SERVICES, SINGAPORE
RETURN OF WORK, 1956

	PATIENTS SEEN				TREATMENT GIVEN										PATIENTS				
	NEW CASES			Total attendance	EXTRACTIONS	Dressings (per visit)	DENTURES INSERTED		Other treatment	Treat-ment comple-ted	FILLINGS			Scalings (per visit)	Dres-sings (per visit)	Partial	Full	Other treatment	Treat-ment comple-ted
	Exa-mined	Requir-ing treat-ment	Refusing treat-ment				Re-exa-mined	Silver Amal-gam			Silicate	Other	Deci-dous teeth							Perma-nent teeth	8	15	133	6	1	473	201
SCHOOL DIVISION:																			
School Dental Clinic,	2,204	..	..	26,494	15,335	4,494	57	9,082	4,747	938	6,597	..	..	915	1,179	..	..	..	..
T.T.S.H. ..	..	..	..	7,245	7,882	212	220	2,562	12	1,650	1,270	..	..	91	798	..	..	..	..
Dental Nurse Clinics ..	..	..	..	3,084	2,333	208	149	1,410	279	179	1,191	..	..	90	167	..	..	..	..
Mobile Dental Clinics ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sims Avenue Community Centre ..	653	573	24	3,874	2,382	341	16	2,195	363	243	562	..	..	47	315	..	..	..	..
Siglap Community Centre ..	804	..	..	4,022	2,452	258	24	1,921	388	207	1,128	..	7	17	198	..	..	..	..
HOSPITALS DIVISION:																			
Dental Clinic, General Hospital ..	32,447	..	..	99,004	5,052	585	1,104	46,605	35,570	856	63,338	480	1,868	..	..	..	..	..	..
Dental Officer, Chronic Sick ..	626	..	..	5,038	1,900	334	482	60	3,646	295	198	16	62	148	335	..	..	..	..
MATERNITY AND CHILD WELFARE DIVISION:																			
Bukit Timah and Ama Keng ..	1,358	1,333	43	4,921	930	205	14	1,261	3,703	318	618	15	89	451	113	..	..	..	..
Mandai and Yio Chu Kang ..	1,334	..	..	3,324	682	142	664	..	..	252	168	1	133	..	130	..	..	..	..
MISCELLANEOUS:																			
Police ..	590	..	..	3,696	1,629	230	44	..	713	673	402	8	6	..	473	..	..	..	..
Royal Malayan Navy ..	355	..	..	903	424	141	..	..	116	131	74	22	1	..	201	..	..	..	..
Total ..	41,435	1,906	67	161,605	40,701	7,150	2,774	65,096	49,537	5,742	75,546	549	2,159	1,759	3,909	..	..	..	..

TABLE 56
SUMMARY OF WORK AT DENTAL CLINIC, GENERAL HOSPITAL, 1951-1956

Year	Total New Cases	Total Out-patients	Daily Average	Extractions	Oral Surgery Operations	Fillings	Dressings	Dentures	X-Rays	Revenue
1951	7,149	29,168	60.32	22,973	..	3,490	12,556	1,457	3,571	\$ 29,125 65
1952	10,054	37,988	77.33	27,935	..	5,813	10,393	1,223	4,498	31,126 67
1953	14,444	50,449	98.10	51,972	..	6,006	31,604	1,726	6,298	44,535 59
1954	21,525	63,469	231.20	71,715	..	6,859	44,641	2,092	6,596	53,842 84
1955	27,895	82,107	278.74	83,392	847	6,039	52,201	1,873	6,761	34,738 85
1956	32,547	99,004	334.47	82,175	898	6,741	63,338	2,348	9,137	36,341 94

267. Dental treatment continued at the Royal Malayan Naval Barracks. Towards the end of the year the Chief Dental Officer carried out a survey there, in order to ascertain how successful the dental service which had been established in 1952 had been over 400 ratings were examined. As a result of this survey it has been decided to provide full-time dental treatment at the barracks in an attempt to render all ratings dentally fit.

Dental Board

268. The Inspecting Officer, Dental Board, reports as follows:—

(i) During the year 1956 there were 3 new registrations in the list of Division I dentists. One private practitioner in Division I is now practising in Brunei and he did not apply for his Annual Practising Certificate.

(ii) During the year two deaths occurred among Division II dentists and their registration certificates were duly cancelled by the Board. The name of two Division II dentists were removed from the register, one under section 14 (2) *b* and another under section 14 (2) *c*. There was no new registration of dentists in Division II.

(iii) The number of dentists registered in 1956 is given in Table 57.

TABLE 57
DENTISTS IN SINGAPORE, 1956

	<i>Beginning of 1956</i>	<i>End of 1956</i>
DIVISION I		
Private Practice	... 33	33
Government	... 29	30
University of Malaya	... 13	14
	75	77
DIVISION II		
Private Practice	... 251	247

Inspection of Division II Dentists

(iv) The number of routine inspections carried out during 1956 on Division II dentists was 502. Warning notices regarding cleaning of premises or alteration to signboards were sent to 9 dentists. One dentist was requested to give an explanation concerning an indirect form of advertising by giving a Chinese dinner in his place of practice.

(v) One lady dentist who lost her certificate of registration was given a duplicate after she had made a statutory declaration. Another dentist who had ceased practising for some time failed to obtain his Annual Practising Certificate for lack of proper premises.

Illegal Practices

(vi) In addition to the routine inspections frequent re-inspections were made against possibilities of covering. Three cases of covering were reported to the Commercial Crimes. Two cases of illegal practice by unlicensed persons were also reported. One of them sold his equipment and carried on as a dental mechanic, while the other was more obstinate and dismantled his surgery only after some considerable persuasion.

Change of Addresses

(vii) There were 26 changes of addresses in 1956. Ten of them moved to better premises, but unfortunately two of them had to go back to their former places of practice because of uneconomic rentals. Many of them are becoming aware of the attractions of their patients to cleaner and better premises.

(viii) *Equipment.* Many of the progressive Division II dentists have given up their foot engines for the cheap but well designed Japanese units. Their hand instruments however remain poor.

PREVENTIVE DENTISTRY

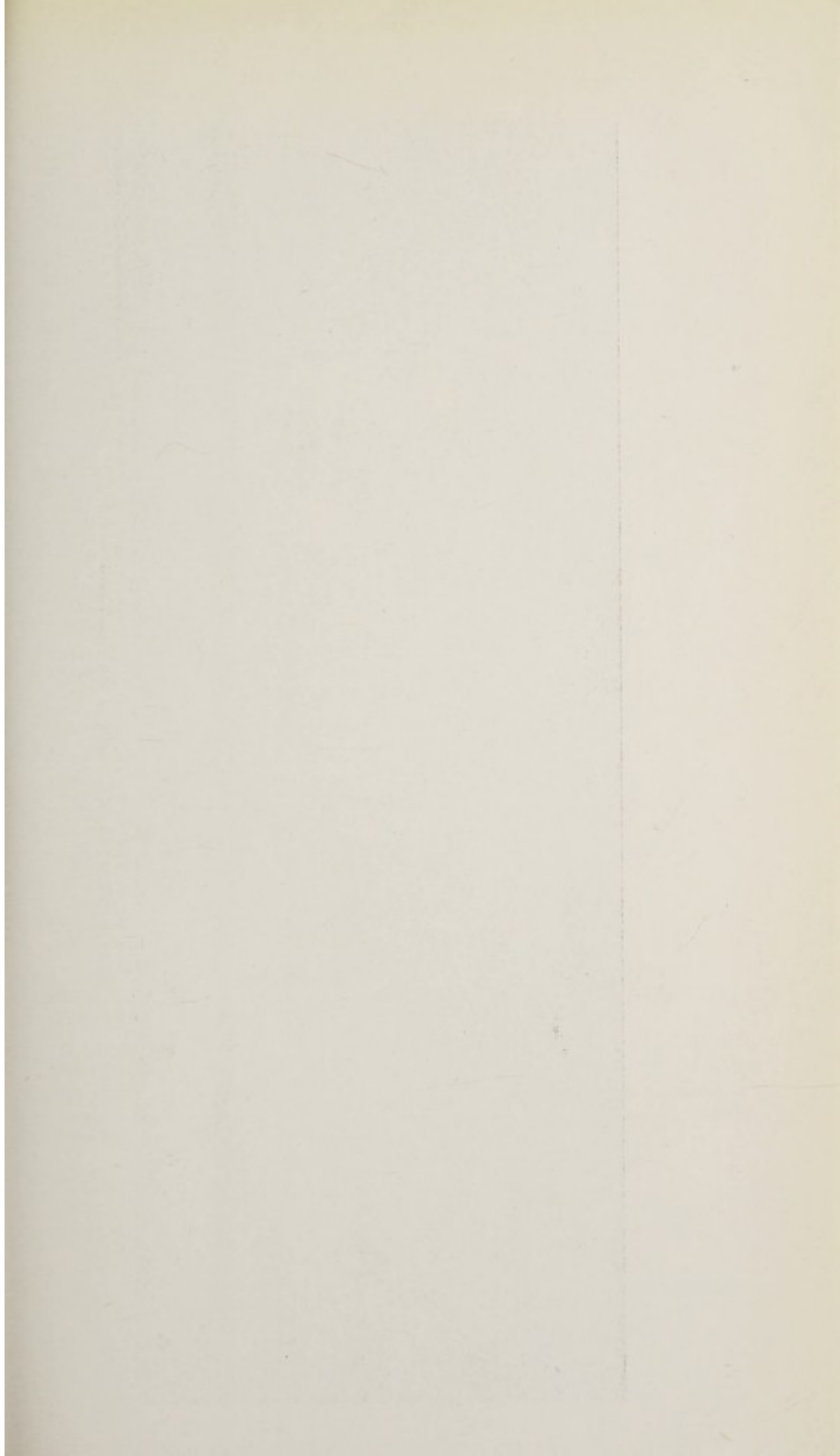
Fluoridation of the Water Supply

269. After some delay the fluoridation of the Singapore water supply actually commenced in May 1956. The scheme is not fully developed as yet, and up to the end of the year only about 10 per cent of the island's water supply was being treated, but the City Water Department is extending the scheme as rapidly as possible, in spite of certain local difficulties resulting from the climate of Singapore, and it is hoped that in the course of next year or so the whole supply will be fluoridated.

270. A second annual survey of schoolchildren in the seven and eight-year age-groups was carried-out in Singapore and Malacca early in the year, some 2,500 children being examined in all. The results of this survey and that of 1955 were transferred to punch cards, and although not yet fully tabulated and analysed, these are expected to produce valuable information.

Dental Health Education

271. The Dental Section had provision for Information Services this year and with this vote a number of posters and pamphlets were designed and printed. These were distributed to schools, Social Welfare Centres, Maternity and Child Health Centres and Dental Clinics.





Health Education Officer, Singapore

Health Education Film Show in the Rural area

CHAPTER THIRTEEN

HEALTH EDUCATION

272. Great effort has been made during the year to develop useful basic health attitudes and practices by the organisation and expansion of Health Education in villages, schools, Maternal and Child Health Centres and Community Centres.

Staff

273. The staff of the Health Education Section consisted of two Health Education Officers and one Health Education Sister. Considerable Health Education work was done by other health personnel—Health Officers, Sanitary Inspectors, Health Nurses, Midwives and other ancillary health personnel.

Preparation of Health Education Materials

274. Over 500 photographs covering various aspects of the work of the Department were taken.

275. Pamphlets on Hookworm, Venereal Disease, Poliomyelitis and Chicken-pox were printed in various languages. About 100,000 pamphlets were printed and distributed, 12,000 copies of a poster on Hookworm was printed and distributed. A Flannelgraph on Tuberculosis has been prepared.

276. The Health Education Section participated in three exhibitions during the year. These were held in connection with World Health Day, Raffles Science Congress and the Singapore Agricultural Show.

277. Three press releases on "World Health Day" and "Diphtheria Immunisation" and four radio scripts on "Diphtheria Immunisation", "World Health Day" and Raffles Science Congress were prepared and issued.

278. Filmstrips on "Maternity and Child Care" and "Hookworm" were completed.

Community Health Education Programme

279. Health film shows were given in 15 places in all parts of the rural area; there were 72 filmshows. 90 hygiene classes for children were also conducted at Community Centres. A course in mother-craft was also organised at one Community Centre.

280. A pilot Health Education project has been organised at Padang Terbakar, a village in the Changi District. The people of Padang Terbakar are actively brought into the project and with their co-operation great strides are being made. Health film shows have been arranged for Parent-Teacher Association Meetings in a number of schools.

Health Education Council

281. On 31st August, 1956 the Singapore Health Education Council was inaugurated by the Minister for Health with the following main aims:—

- (1) To advise on Health Education;
- (2) To organise conferences, training course, lectures, exhibitions and demonstrations as may be thought appropriate;
- (3) To provide Health Education materials;

- (4) To publish periodicals, leaflets and other appropriate printed matter;
- (5) To promote co-ordination between bodies responsible for or engaged in the promotion of public health and, where necessary, to make recommendations to the Minister for Health regarding any matter pertaining to the health generally of the people.

282. Professor F. Mason was elected Chairman and Dr. H. R. Morrison, Vice-Chairman of the Council. The Executive Committee and a Sub-Committee on Health Education Materials have been appointed. The Council has worked out priorities and programmes for Health Education in Singapore. Diphtheria Immunisation, food hygiene and village sanitation have been given high priority in the Council's health education programme.

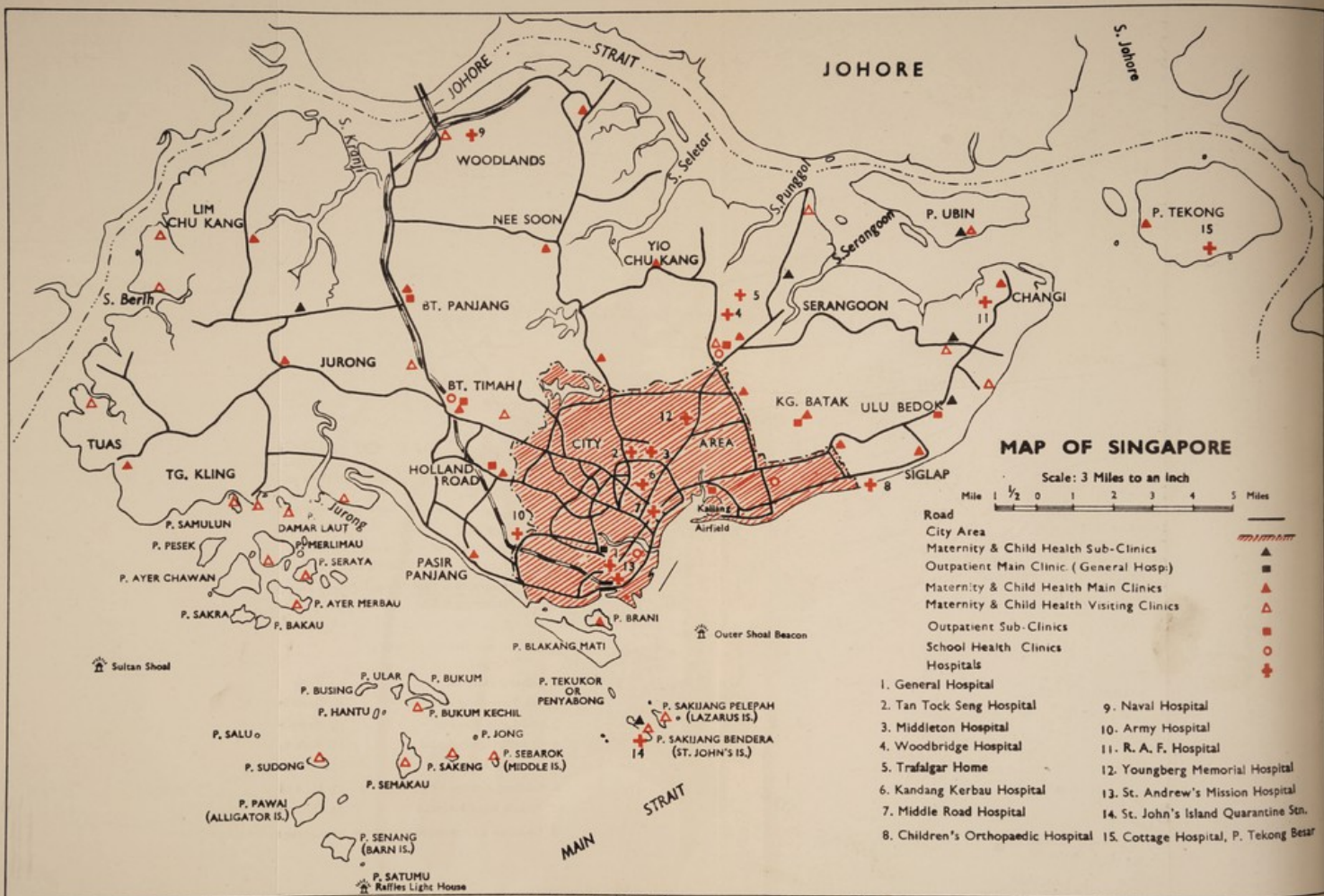
Teaching

283. The Health Education Officer gave lectures to 7 Student Almoners, 24 Sanitary Inspectors, 34 Teachers, 54 final year medical students and 7 postgraduate D.P.H. students.

1870

MAP OF SINGAPORE

This map shows the city of Singapore and its surrounding areas. The map is oriented with North at the top. The city is located on the southern tip of the island. The map shows the coastline, major roads, and various landmarks. The map is titled "MAP OF SINGAPORE" and is dated 1870. The map is a historical document and is part of a collection of maps of Singapore. The map is a black and white print and is of good quality. The map is a valuable resource for anyone interested in the history of Singapore.



MAP OF SINGAPORE

Scale: 3 Miles to an Inch
 Mile 1/2 0 1 2 3 4 5 Miles

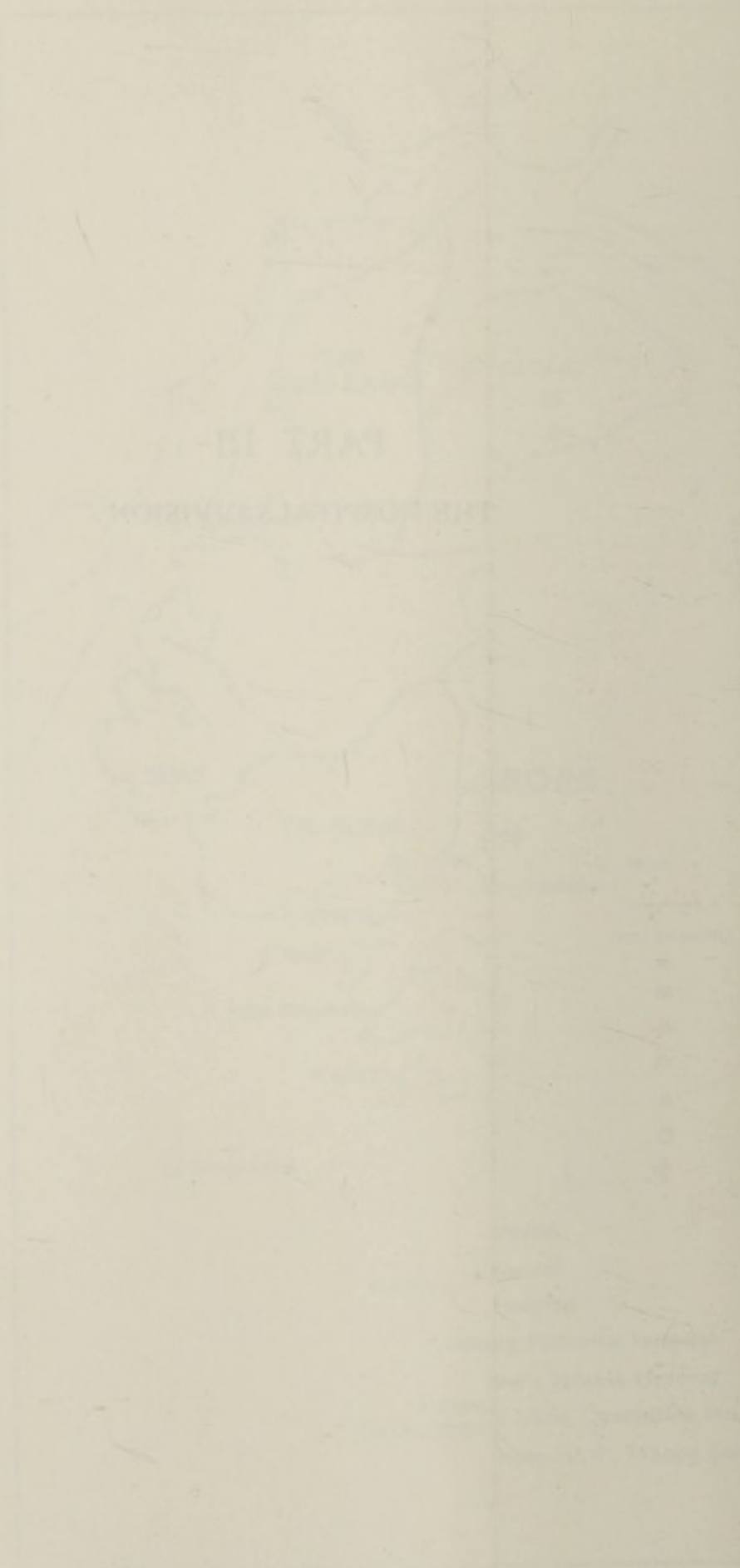
- Road
- City Area
- Maternity & Child Health Sub-Clinics
- Outpatient Main Clinic. (General Hosp)
- Maternity & Child Health Main Clinics
- Maternity & Child Health Visiting Clinics
- Outpatient Sub-Clinics
- School Health Clinics
- Hospitals

- 1. General Hospital
- 2. Tan Tock Seng Hospital
- 3. Middleton Hospital
- 4. Woodbridge Hospital
- 5. Trafalgar Home
- 6. Kandang Kerbau Hospital
- 7. Middle Road Hospital
- 8. Children's Orthopaedic Hospital
- 9. Naval Hospital
- 10. Army Hospital
- 11. R. A. F. Hospital
- 12. Youngberg Memorial Hospital
- 13. St. Andrew's Mission Hospital
- 14. St. John's Island Quarantine Stn.
- 15. Cottage Hospital, P. Tekong Besar

PART III

THE HOSPITALS DIVISION

PART III
THE NORTHWEST DIVISION



CHAPTER FOURTEEN

THE HOSPITALS DIVISION

GENERAL REVIEW

284. Further progress is recorded in the expansion of the medical services during 1956.

285. In September the new Nurses Training School and Student Nurses' Hostel was opened by Lady Black, wife of H. E. the Governor of Singapore. The opening of this school fulfils a great need in the expansion of the nursing service and it is now possible to train 200 nurses annually at the new Training School.

286. In October the Minister for Health declared open the new Ear, Nose and Throat Department in the Stanley Block of General Hospital. The Department previously shared bed and theatre accommodation with one of the General Surgical units. Expanded facilities in the new department include 60 beds, extensive out-patient facilities, endoscopy and audiometry rooms and a suite of operating theatres.

287. In December the Minister for Health opened the new Ward Blocks at Tan Tock Seng's Hospital. The opening of these two new Ward Blocks is the completion of the first phase of a general plan for the enlargement and extension of the Tuberculosis Service.

288. Work on the new Institute of Pathology Building at the General Hospital were commenced in December 1956.

289. During the course of the year the beds available in the Government Hospitals in Singapore increased from 5,185 to 5,901, an increase of 716, about 13.8 per cent. Although this figure is encouraging, the total beds available is very far short of the needs of Singapore.

290. Plans for the expansion of all Singapore hospitals and for the building of a new District Hospital and for a hospital to care for the chronic sick are very far advanced, but there are already indications that this planned expansion may not proceed sufficiently rapidly to meet either the hopes of the Medical Department or the increasing demands made by the public.

291. The steady increase in the number of patients treated in all Singapore hospitals which has been recorded every year has been maintained. Table 58 shows the total number treated in the four main hospitals (General Hospital, Kandang Kerbau, Tan Tock Seng and Middle Road) over the past years.

TABLE 58

PATIENT ATTENDANCES AT MAIN HOSPITALS, SINGAPORE

<i>Year</i>		<i>In-Patients</i>	<i>Out-Patients</i>
1938	...	25,913	87,447
1947	...	27,514	305,138
1948	...	27,367	332,427
1949	...	32,998	380,599
1950	...	40,164	433,420
1951	...	40,833	612,095
1952	...	48,550	726,310
1953	...	55,420	957,481
1954	...	58,859	1,169,689
1955	...	62,024	1,271,165
1956	...	67,023	1,597,930

292. If these figures are examined in conjunction with the graphs on pages 100 and 101 it will be seen that the increase in 1956 is much greater than that in 1955. The increase in in-patients for 1955 was 6 per cent; it rose to 8 per cent in 1956. The out-patient figures are even more impressive. The figure for 1955 showed an increase of just over 8 per cent on the figure for 1954; the figure for 1956 has increased by 26 per cent over the 1955 figure. It is quite startling to think that in a city with a population of 1.2 million people the total attendances at the four main hospitals number 1.6 million. The total figure for all out-patient attendances at all hospitals and at all static and mobile dispensaries is 1.9 million, a figure which is almost incredible.

293. Table 59 indicates the number of beds available at the various Government hospitals.

TABLE 59
BEDS AVAILABLE AT VARIOUS GOVERNMENT HOSPITALS

—	Pre-war	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
General ..	750	550	550	600	700	700	750	800	800	800	957	1,205
Kandang Kerbau (excluding cots) ..	180	200	220	240	240	240	240	240	240	240	316	316
Tan Tock Seng ..	600	400	400	550	572	600	540	565	565	564	564	972
Orthopædic ..	..	60	60	60	65	70	70	78	120	120	120	120
Prisons ..	140	50	50	118	118	140	140	160	160	160	160	160
Social Hygiene (ex- cluding cots) ..	Part of General	60	60	60	68	70	70	70	70	60	65	65
Infectious Disease ..	250	250	250	250	250	250	250	250	250	200	200	250
Leprosy Settlement	200	260	347	382	451	536	640	725	790	642	954	973
Police Training School ..	20	20	20	20	20	20	20	20	20	20	20	20
Mental ..	2,000	440	700	1,000	1,200	1,600	1,800	1,800	1,800	1,800	1,800	1,800
Opium Treatment Centre St. John's Island ..	..	..	..	..	..	..	..	..	..	..	..	20
Total ..	4,140	2,290	2,657	3,280	3,684	4,426	4,520	4,708	4,815	4,606	5,156	5,901

294. It will be noted that the increase in beds is substantial, amounting to over 700. Considerably more are required and their provision is being planned, but it may be that the provision of qualified staff, both medical and nursing, will be the limiting factor rather than finance. In the case of doctors less than 60 qualify annually having been trained in the University of Malaya; about half will eventually join the Medical Department, i.e. less than 30. It is anticipated that with a rapidly expanding medical service this will be about one quarter of what is required.

295. The following institutions provide beds for the public:---

Kwong Wai Siu Free Hospital (Chinese).

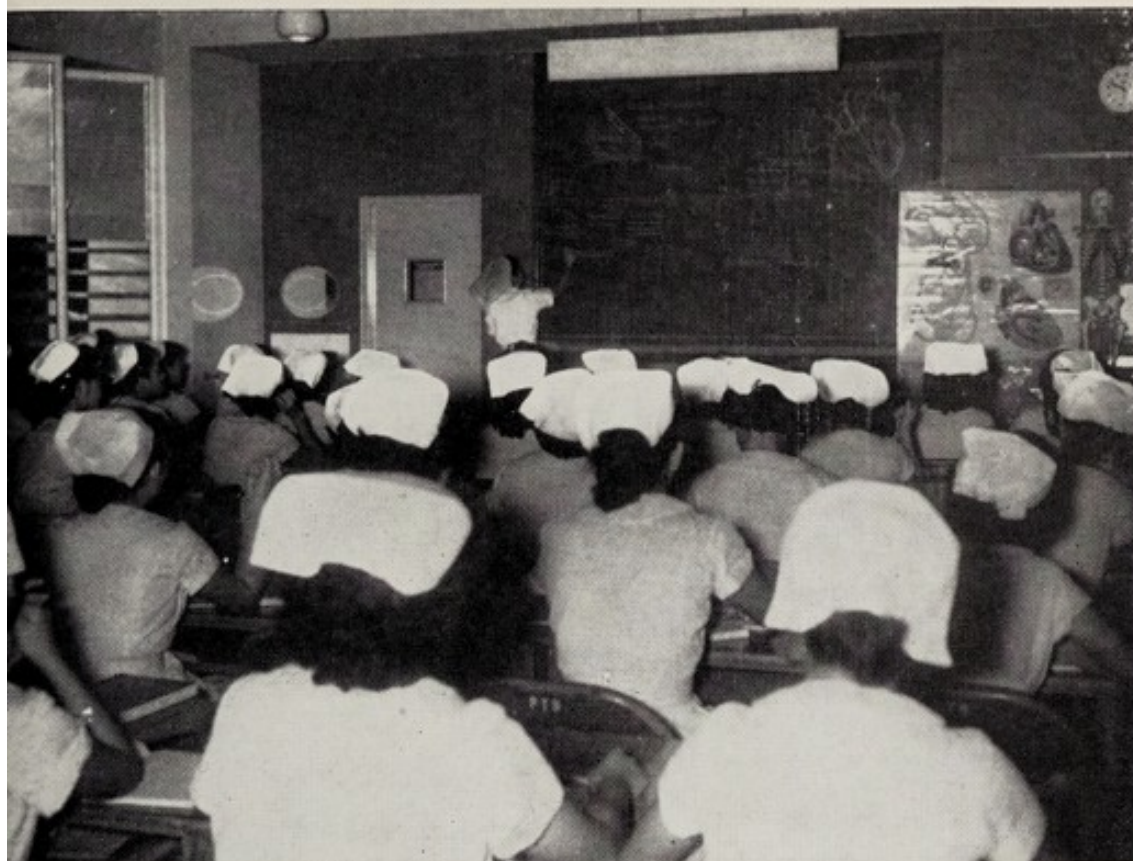
St. Andrew's Mission Hospital.

Malayan Union Mission of Seventh-day Adventists.

Hainanese Hospital.

Kheh Hospital.

TRAINING OF NURSES



Lecture in progress in Lecture Theatre in New School of Nursing



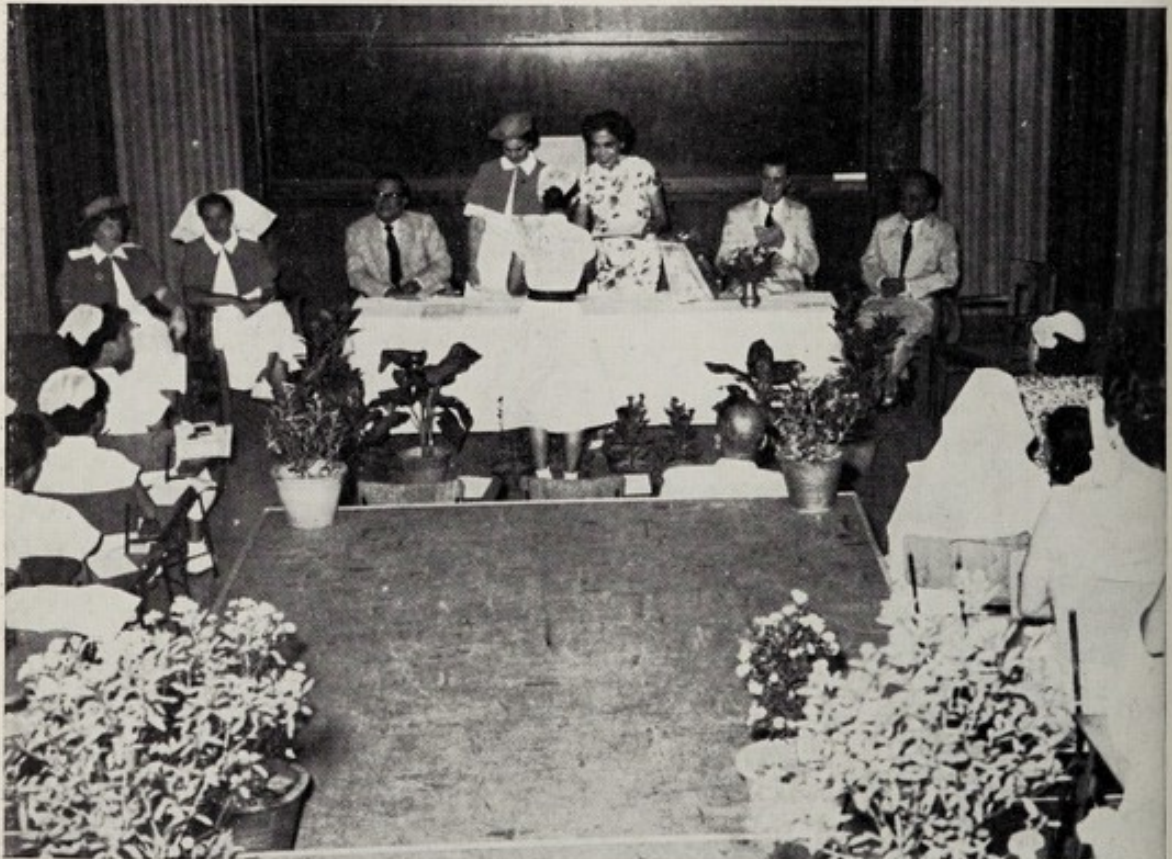
Practical demonstration to Nurses

NURSES GRADUATION CEREMONY



Health Education Officer, Singapore

The Congregation at the Graduation Ceremony



Health Education Officer, Singapore

Mrs. Braga, wife of the Minister for Health, gives away the Certificates and Prizes

TABLE 60
 MAINTENANCE CHARGES AT GOVERNMENT HOSPITALS
 (DAILY AVERAGE COST)

	Paying Patients (a)	Paying Patients (b)	Free Patients
	\$ c.	\$ c.	\$ c.
<i>General Hospital</i>			
Maintenance (including diet) ...	29 19	27 52	26 25
<i>Kandang Kerbau Hospital</i>			
Maintenance (including diet) ...	23 25	22 45	21 36
<i>Tan Tock Seng's Hospital</i>			
Maintenance (including diet):	No paying patients	No paying patients	
Tuberculosis patients ...			14 61
Other patients ...			13 31
<i>Social Hygiene Hospital</i>			
Maintenance (including diet) ...	No paying patients	No paying patients	14 89

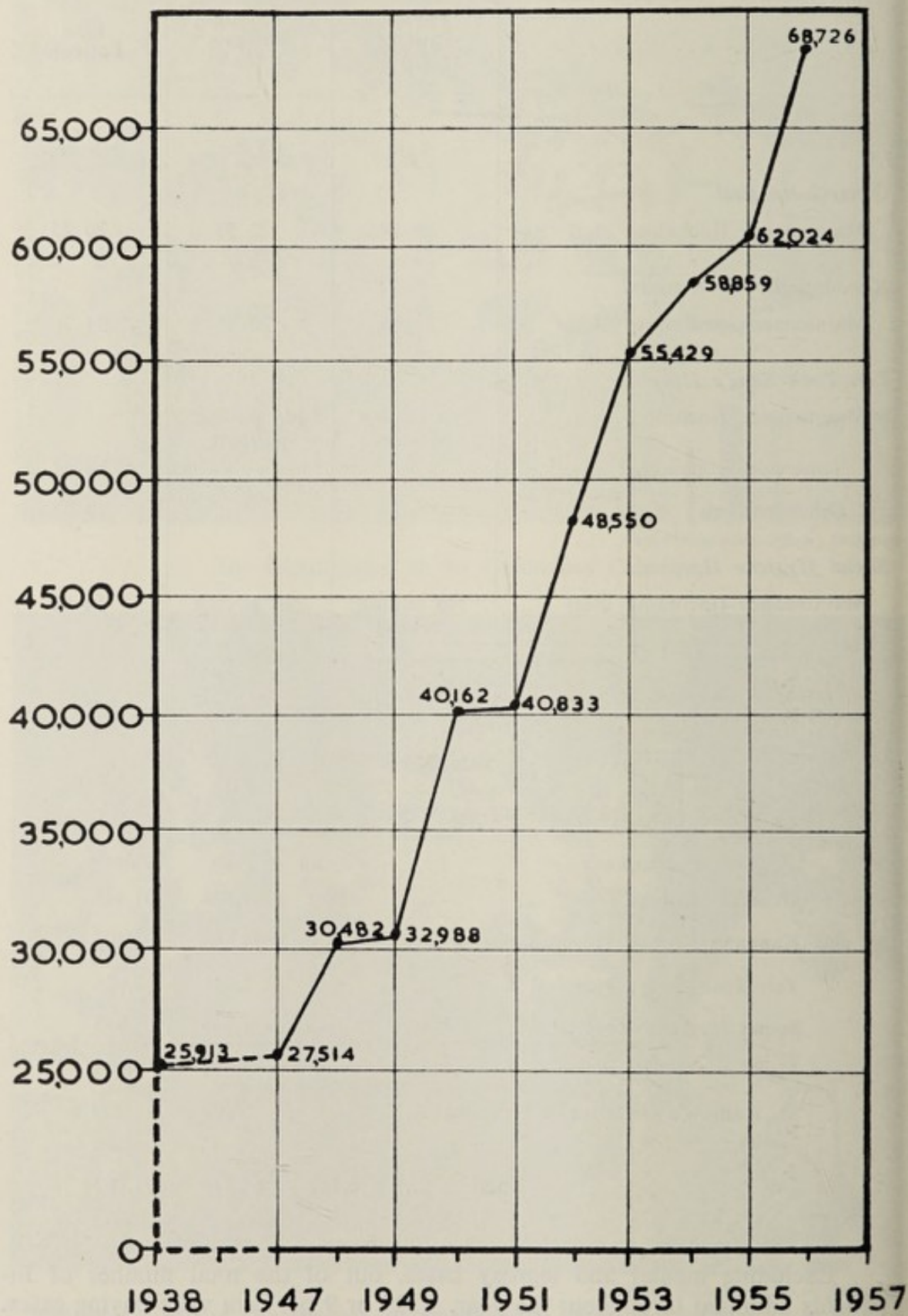
TABLE 61
 IN-PATIENT ADMISSIONS, 1956

<i>Hospitals</i>	<i>Paying</i>	<i>Free</i>	<i>Total</i>
General Hospital ...	3,920	27,526	31,446
Kandang Kerbau Hospital ...	2,609	29,594	32,203
Tan Tock Seng's Hospital ...	—	2,021	2,021
Social Hygiene Hospital ...	—	1,353	1,353
Middleton Hospital ...	—	3,831	3,831
St. Andrew's Orthopædic Hospital ...	—	209	209
Total ...	6,529	64,534	71,063

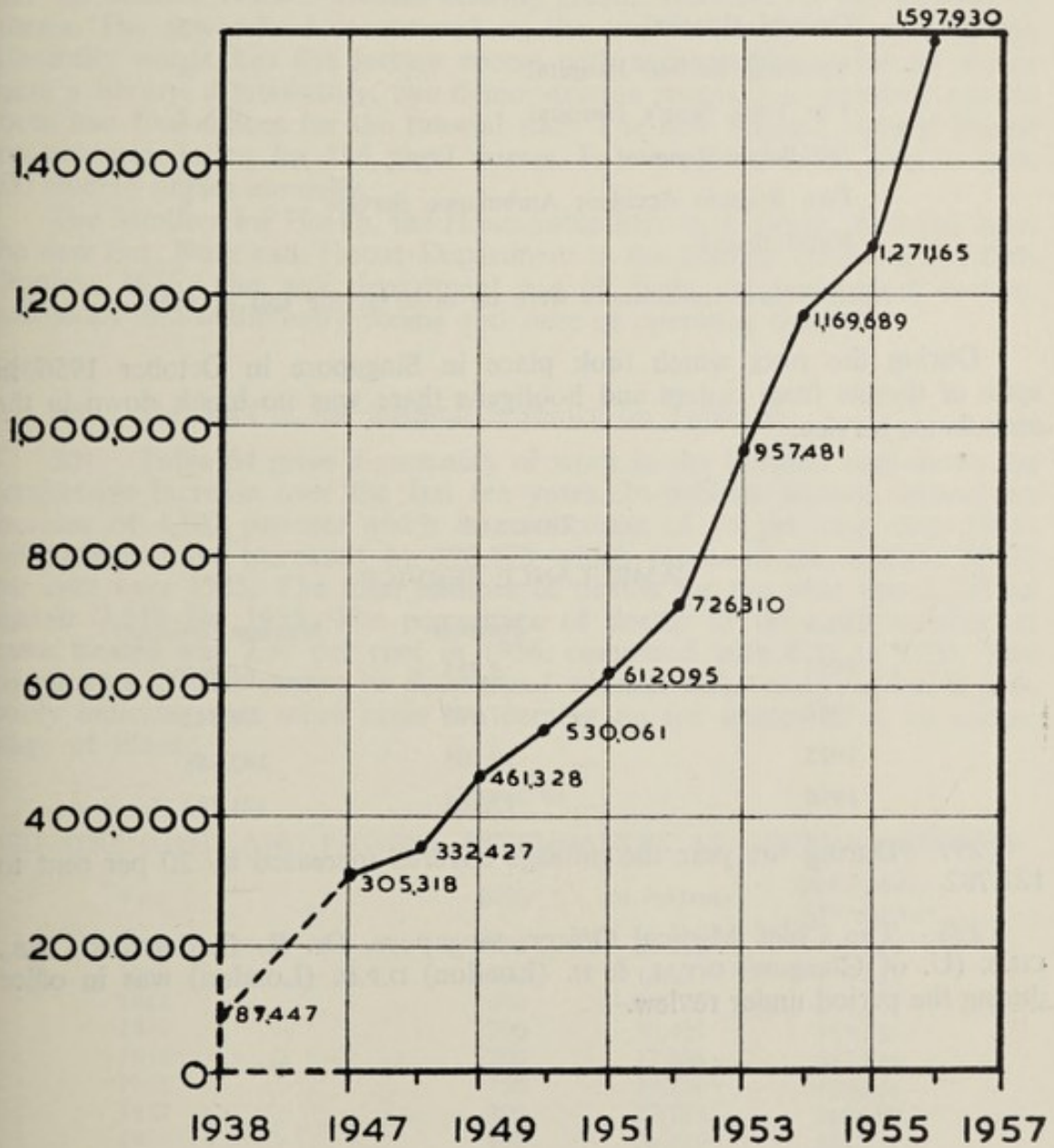
Excluding mental and leprosy cases, out of the total number of in-patients admitted throughout the year, 6,529 or 9 per cent were paying cases.

SINGAPORE MAIN HOSPITALS

TOTAL NUMBER OF IN-PATIENTS TREATED



SINGAPORE MAIN HOSPITALS TOTAL NUMBER OF OUT-PATIENTS TREATED



AMBULANCE SERVICE

296. The Ambulance Advisory Committee met as and when required to review the Colony's requirements in this field.

The number of ambulance in use at the various hospitals at the end of 1956 is given in Table 62.

TABLE 62

AMBULANCES IN SINGAPORE, 1956

General Hospital	...	...	...	7
Kandang Kerbau Hospital	...	...	...	4
Tan Tock Seng's Hospital	...	...	...	2
Middleton Hospital	...	...	...	2
Fire Brigade Accident Ambulance Service	...	...	...	6
Rural Board	...	...	...	1

Note:—Three ambulances were on order at the end of 1956.

During the riots which took place in Singapore in October 1956 in spite of threats from rioters and hooligans there was no break down in the ambulance service.

TABLE 63

AMBULANCE SERVICE

<i>Year</i>			<i>Patients</i>	<i>Mileage Covered</i>
1953	...	...	5,725	68,368
1954	...	...	7,906	74,542
1955	...	...	10,105	102,688
1956	...	...	13,268	121,782

297. During the year the mileage covered increased by 20 per cent to 121,782.

298. The Chief Medical Officer, Singapore, Dr. R. Calderwood, M.B., CH.B. (U. of Glasgow) D.T.M. & H. (London) D.P.H. (London) was in office during the period under review.

CHAPTER FIFTEEN

GENERAL HOSPITAL

299. The year 1956 showed a further progress in the development of the General Hospital. On 10th September, 1956 Lady Black, wife of His Excellency the Governor of Singapore, opened the New Nurses Training School and the Student Nurses' Hostel, offering greater facilities for the training of nurses. The new school constructed on the site previously occupied by the Maternity wards, has five lecture rooms with accommodation for 40 nurses each, a library, a laboratory, two demonstration rooms, one domestic science room and four offices for the tutorial staff. The new Student Nurses' Hostel has accommodation for 195 pupil nurses. It is expected to be able to train 200 student nurses annually.

The Minister for Health, the Honourable Mr. A. J. Braga, declared open the new Ear, Nose and Throat Department in the Stanley Block on the 18th October, 1956. The new department has 60 beds, an out-patient section, endoscopy and audiometry rooms and suite of operating theatres.

Staff

300. The Staff of the hospital is shown on Table 65.

301. Table 64 gives a summary of work in the hospital and shows the progressive increase over the last ten years. In-patients treated showed an increase of 4,102 patients which is an increase of 14 per cent over 1955; out-patients have increased by 190,678 which represent an increase of 22 per cent over 1955. The total number of deaths for the year was 2,382 as against 2,318 for 1955. The percentage of deaths to the total number of cases treated was 7.37 per cent in 1956, compared with 8.21 in 1955. The significance of this cannot be determined without fuller analysis, but it probably indicates that more cases are coming up for treatment at an earlier stage of illness.

TABLE 64

BED STRENGTHS AND PATIENT ATTENDANCES AT GENERAL HOSPITAL

<i>Year</i>	<i>Beds</i>	<i>In-Patients</i>	<i>Out-Patient Attendances</i>
1938	750	25,913	87,447
1947	550	15,021	114,167
1948	600	14,683	138,801
1949	700	15,478	153,534
1950	700	17,886	162,524
1951	750	19,720	185,131
1952	800	22,753	358,769
1953	800	26,219	482,332
1954	800	27,404	615,588
1955	957	28,222	691,064
1956	1,205	32,324	881,742

302. The hospital continues to be the main teaching hospital of the Faculty of Medicine of the University of Malaya.

303. During the year the average bed state was 980.63 as against 850 in the previous year.

TABLE 66

BREAKDOWN OF OUT-PATIENTS AT GENERAL HOSPITAL

Nationalities	NEW CASES			Total	REPETITIONS			Total
	Male	Female	Child		Male	Female	Child	
Europeans ..	1,772	971	603	3,346	5,212	4,395	1,665	11,272
Eurasians ..	2,042	1,266	938	4,246	6,107	4,432	2,021	12,560
Chinese ..	74,570	49,667	67,286	191,523	193,275	121,618	120,412	435,305
Indians ..	24,590	14,042	9,275	47,907	68,423	19,488	16,440	104,351
Malays ..	10,285	5,366	4,600	20,251	20,959	10,008	9,284	40,251
Javanese ..	692	252	403	1,347	766	380	304	1,450
Japanese ..	3	4	..	7	3	11	..	14
Others ..	1,671	591	342	2,604	2,811	1,510	987	5,308
Total ..	115,625	72,159	83,447	271,231	297,556	161,842	151,113	610,511

TABLE 67

GENERAL HOSPITAL, OUT-PATIENTS, 1956

	<i>New Cases</i>	<i>Repeats</i>	<i>Total</i>
Male Out-patient Department ...	34,281	49,037	83,318
Female Out-patient Department ...	69,919	77,345	147,264
Casualty Out-patient Department ...	45,702	26,747	72,449
Medical Officer i/c Officials (Senior)	3,595	7,592	11,187*
Medical Officer i/c Officials (Junior)	6,722	22,676	29,398†
Eye Clinic	17,215	44,428	61,643
Surgical O.P.D. A Unit ...	11,208	24,035	35,243
Surgical O.P.D. B Unit ...	9,826	25,692	35,518
Surgical O.P.D. C Unit ...	7,281	25,056	32,337
Medical O.P.D. Unit I ...	1,229	22,525	23,754
Medical O.P.D. Unit II ...	3,001	22,702	25,703
Pædiatric O.P.D.	2,357	9,264	11,621
Ear, Nose, Throat Department ...	9,563	19,228	28,791
Skin Clinic	5,253	6,435	11,688
Dental Clinic	32,547	66,457	99,004
Medical Physiotherapy	2,620	34,248	36,868
Surgical Physiotherapy	7,799	107,828	115,627
Occupational	1,113	19,216	20,329
Total ...	271,231	610,511	881,742
In addition M.O. i/c Officials	6,668		6,668

Monthly average Out-patients:

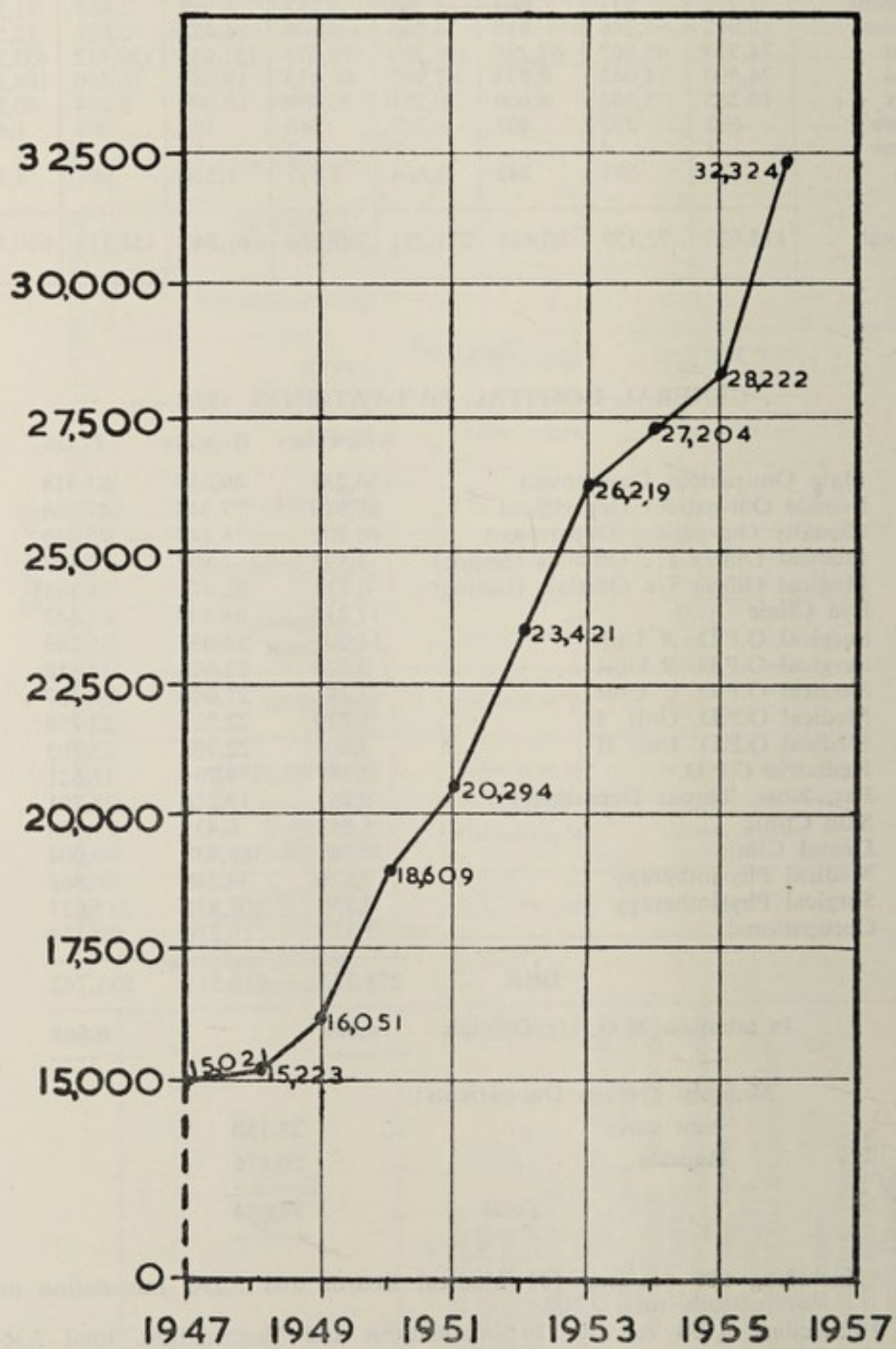
New cases	23,158
Repeats	50,876
Total ...	74,034

* Excluding 906 recruits, 104 Medical Boards and 2,290 Inoculation and Vaccinations, total 3,300.

† Excluding 3,354 recruits, 14 Inoculations and Vaccinations, total 3,368.

GENERAL HOSPITAL

TOTAL NUMBER OF IN-PATIENTS TREATED



GENERAL HOSPITAL

TOTAL NUMBER OF OUT-PATIENTS TREATED

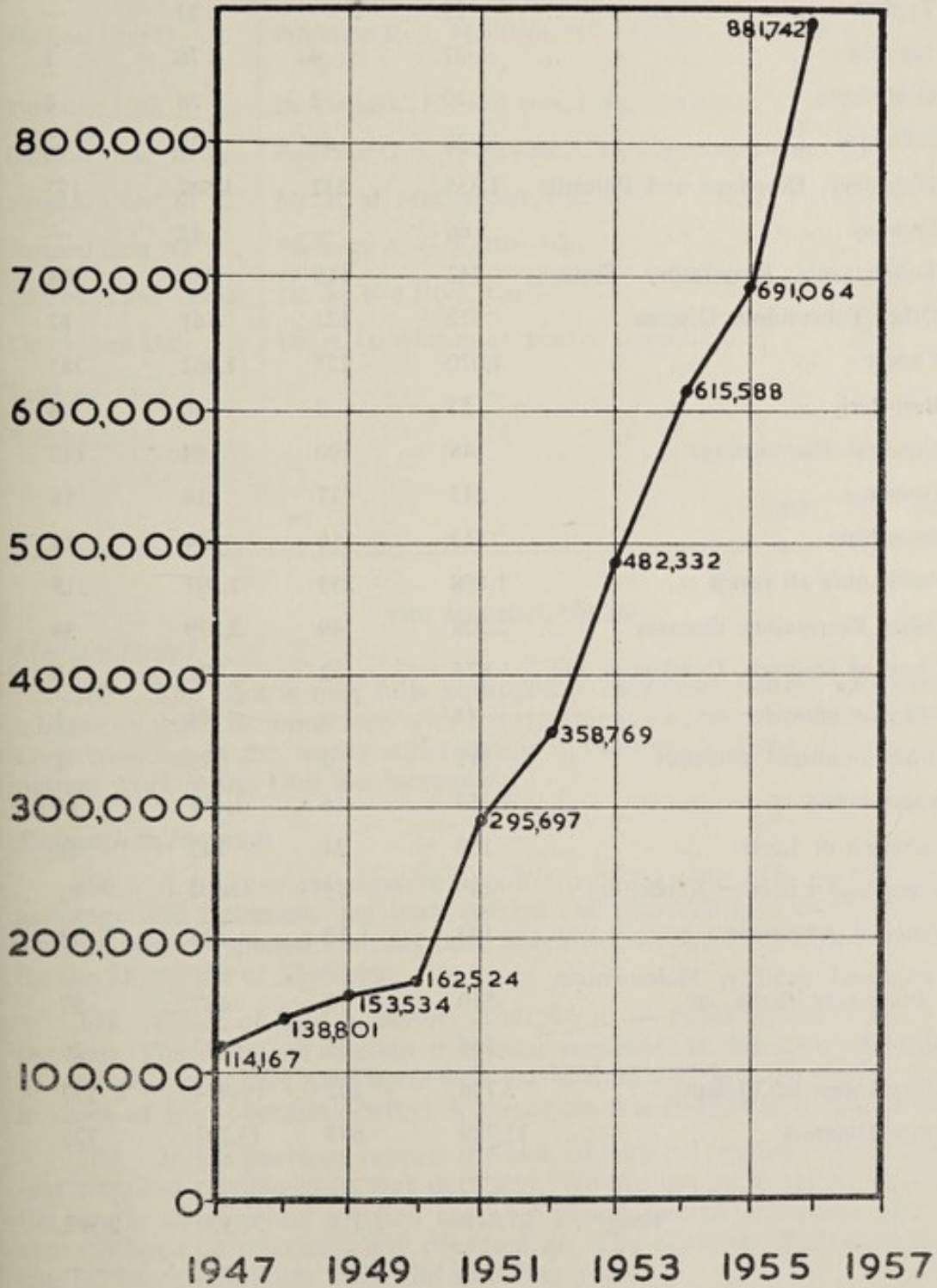


TABLE 68

MAIN CAUSES OF MORBIDITY OF IN-PATIENTS IN GENERAL HOSPITAL
1955 AND 1956

	1955		1956	
	<i>Admissions</i>	<i>Deaths</i>	<i>Admissions</i>	<i>Deaths</i>
Enteric Group	91	6	98	5
Typhus	22	—	23	—
Malaria	87	4	78	1
Diphtheria	20	2	38	8
Influenza	30	—	35	—
Dysentery, Diarrhœa and Enteritis	1,335	232	1,547	177
Leprosy	66	—	45	—
Tuberculosis Respiratory System	742	119	944	104
Other Tuberculous Disease ...	572	121	561	87
Cancer	1,070	235	1,462	285
Beri-Beri	53	7	30	4
Cerebral Hæmorrhage	148	100	184	140
Diabetes	243	17	214	16
Bronchitis	513	16	434	14
Pneumonia all forms	1,158	255	1,597	319
Other Respiratory diseases ...	2,308	49	2,239	34
Ulcer of Stomach, Duodenum, etc.	675	32	772	16
Ankylostomiasis	48	—	84	1
Other intestinal parasites ...	112	3	79	1
Appendicitis	1,154	16	1,457	13
Cirrhosis of Liver	158	31	243	48
Acute and Chronic Nephritis ...	499	55	604	71
Venereal Affections	193	16	195	15
Congenital debility, Malnutrition, Premature Birth, etc. ...	510	79	687	97
Suicidal	166	28	123	26
Other forms of Violence ...	3,716	202	3,874	177
Other Diseases	11,729	693	13,783	723
	—	—	—	—
Total	27,418	2,318	31,430	2,382
	—	—	—	—

304. The various Units in the General Hospital with their basic bed strength are given in Table 69.

TABLE 69
UNITS IN GENERAL HOSPITAL

Unit	Head of Unit	Basic Beds
Medical Unit I ..	Professor G. A. Ransome, F.R.C.P., M.R.C.S. ..	120
Medical Unit II ..	Professor E. S. Monteiro, M.D., F.R.C.P., F.R.F.P. & S, D.C.H.	210
Pædiatric Unit ..	Dr. (Miss) C. E. Field, M.D., M.R.C.S., M.R.C.P. ..	300
Surgical Unit "A" ..	Professor G. S. Yeoh, F.R.C.S., L.R.C.P., M.B., B. Chir. ..	136
Surgical Unit "B" ..	Mr. H. M. McGladdery, F.R.C.S.	143
Surgical Unit "C" ..	Professor A. G. Karlen, M.D.	120
Ear, Nose and Throat	Dr. Au Kee Hock, L.M.S.	60
Ophthalmic Unit ..	Dr. A. D. Williamson, M.B.Ch. B., F.R.C.S. ..	85
Lock-up ..	.. .. .	23
Sick Bay ..	.. .. .	8
	Total ..	1,205

THE MEDICAL UNITS

Medical Unit I

305. The Unit is now fully equipped to carry out routine and advanced laboratory work in connection with the treatment and investigation of patients. Overcrowding in the wards still remains a problem and the volume of out-patient work in the Unit has increased.

Research in Progress

306. *A study of suppurative conditions of the lung* with special stress on aetiology and treatment has been carried out over the last three years. This work is now completed and has been submitted in the form of a major thesis for the Doctorate of Medicine.

307. Cases of *lead poisoning* continue to be detected occasionally as in the past. The value of calcium disodium versenate in the treatment of cases of lead poisoning has now been well established and is a life-saving measure in cases of lead encephalopathy. A paper on this subject is in preparation.

308. In the previous reports the lack of surgical treatment for congenital and acquired cardiac cases was deplored. We are happy to report that during the course of the year selected cases of patent ductus arteriosus and mitral stenosis have been successfully operated on. The clinico-pathological study of cardiac cases continues as in the previous years.

309. The clinical study of cases of *Eosinophilic Lung* resulted in the publication of a monograph in 1951. Since then a large clinic has been maintained weekly for the treatment of these patients and studies into other aspects

of this obscure condition has continued. In the main the cases of eosinophilia studied fall into three main categories—

- (a) patients with massive eosinophilic leucocytosis diagnosed as Eosinophilic Lung;
- (b) patients with a mild eosinophilia diagnosed as Filariasis;
- (c) patients with a mild eosinophilia usually without respiratory symptoms where the cause of eosinophilia is due to allergy, parasitic infection, or is obscure.

The majority of cases seen fall into the first category and studies are being conducted to elucidate the aetiological factors of this condition. This particular aspect which includes parasitological examinations of blood, sputum and faeces are being carried out in conjunction with the Department of Parasitology. Liver biopsies have also been done on selected cases before and after treatment and the material obtained await further study. The peculiar incidence of this disease in a predominantly Chinese population has suggested that an investigation into the ecologic aspects of this condition may throw some light on its aetiology. In conjunction with the Department of Parasitology home visits are being made to the houses of these patients.

310. The other major aspect of the study has been the therapeutic trial with various drugs (sulphathiazole, bismuth, penicillin, achromycin, cortisone and hetrazan) but all have been found to be of no value except hetrazan. This drug has been administered to 80 patients to date and has been found to be very effective and without any toxic manifestations. A preliminary report of the first ten patients who have been followed for five months after treatment has been published in the Proceedings of the Alumni Association, Malaya, September 1956.

311. The number of proven filariasis cases seen to date is few. More cases have not been available for study, as this disease is not endemic in Singapore as it is in the Federation of Malaya and most of the patients seen are immigrants from endemic areas in India. Comparative investigations, as have been done with cases of Eosinophilic Lung, have also been carried out in the cases of Filariasis. One of the patients in this group presented with a varicosity on the left arm, which revealed microfilariae (*Wuchereria bancrofti*) on aspiration.

312. A small group of cases with mild eosinophilia is also being studied with a view to ascertaining its cause. It is intended to treat patients in this group with hetrazan as well. One of the patients in this group is a case of cutaneous helminthiasis which is considered worth studying in some detail, as such cases are rarely reported in the Colony.

313. The major result of this work so far has been to show the effectiveness of hetrazan in cases of Eosinophilic Lung. It would appear that we are dealing with a form of helminthic infection, as yet unidentified as to aetiology.

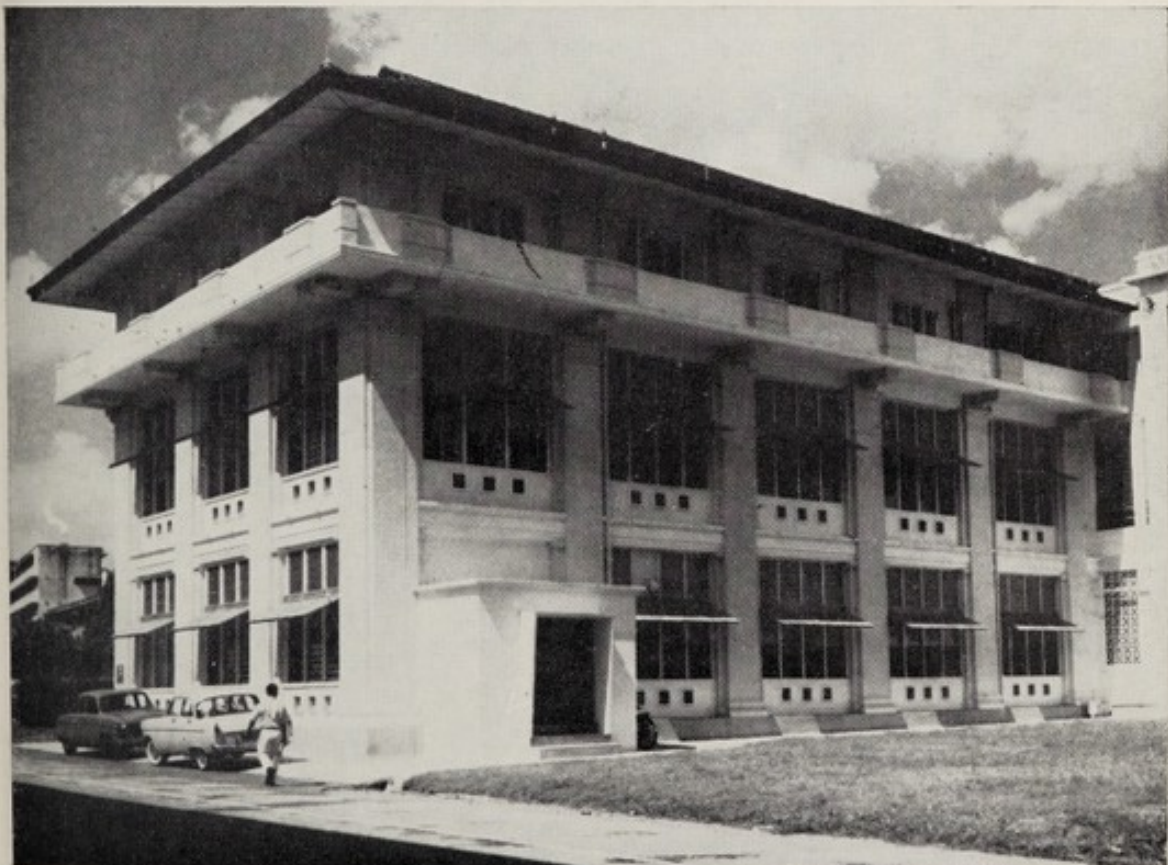
314. *Histamine sensitivity* as a cause of disease other than the well known histamine headache is being investigated with profitable results.

315. A new reflex has been discovered which greatly facilitates the objective diagnosis of disc lesions and any lower motor neurone lesion of the lower extremities, e.g. Diphtheritic Neuritis, Poliomyelitis, etc.

GENERAL HOSPITAL



New School of Nursing



Singapore Health Education Council

Ear, Nose and Throat Unit

CHILDREN'S PARTY



Singapore P.R. Photo

Christmas Party at Mistri Children's Wing attended by the Minister



Singapore P.R. Photo

Happy Children with Santa Claus

Medical Unit II

316. *Research.*—Increased clinical work and teaching duties limited the extent of research. However clinical studies proceeded in all branches.

317. Silicosis in a Singapore granite quarry has been officially reported to the Health Department and the condition is being followed up. A study of the granite dust is being made in conjunction with Professor Lloyd Davies.

318. Liver biopsy studies in Schizophrenia have been completed and will be reported shortly. Studies in congenital heart disease continues. Appraisal of Stellate Ganglion Block in cases of Cerebral Thrombosis is still going on. Assessment of the value of cerebral angiography as a diagnostic technique is in progress.

Pædiatric Unit

319. For most of the year only five of the eight wards in the new Mistri Wing have been occupied owing to shortage of nursing staff. However, owing to such an increase in admissions it became imperative to open the second admission ward in October and as the nursing staff became available, the remaining two wards were opened in November.

TABLE 70

ADMISSIONS AND DEATHS IN THE PÆDIATRIC UNIT

	1955	1956
Total number of cases admitted ...	4,367	6,473
Total number of deaths ...	788	769
Deaths within 24 hours ...	515	421
Percentage Mortality Rate ...	18.12%	11.88%
Percentage Mortality Rate after excluding deaths within 24 hours ...	6.25%	5.38%

320. It will be noted that the admissions have increased by one-third, yet the mortality rate has fallen quite considerably. To a certain extent this may be a reflection of the improved services that have developed as a result of working in the Mistri Wing, but it must be realised that the increased accommodation thus made available has enabled less acutely ill children to be admitted as well.

Case Returns

321. These records are not comparable with the 1955 list as the number of admissions do not add up to the total of 6,473 as some children suffer from more than one complaint and both have been recorded. However the percentage mortality rate is worked out on 6,473 admissions.

322. Pneumonia heads the list both for admissions and mortality and gastro-enteritis is a good second. These two diseases compose about one-third of the admissions and about one half of the mortality. Congenital heart disease, meningitis and encephalitis continue to have a high mortality, but of particular significance is the incidence and high death rate of cases described as jaundice of unknown etiology and kernicterus.

323. Nasopharyngitis, bronchitis, asthma and acute nephritis account for many admissions but with a low mortality.

TABLE 71

SUMMARY OF CASES TREATED IN PÆDIATRIC UNIT

	Admis- sions	Total Deaths	Deaths within 24 hours	% Morta- lity Rate on 6,473 admissions
Anæmia				
Aplastic	2	..	..	..
Hæmolytic	45	..	..	..
Rh. and ABO Incom.	7	2	1	0.03
Nutritional	19	3	2	0.05
Others	26	6	4	0.09
Asthma	234	2	2	0.03
Beri-beri	24	4	1	0.06
Blood Dyscrasias				
Leukæmia	14	10	1	0.15
Others	16	..	..	..
Bronchitis	383	14	5	0.22
Bronchiectasis	23	..	..	..
Cellulitis	56	..	..	..
Cerebral Abscess	3	1	..	0.02
Cerebral Hæmorrhage	27	16	12	0.25
Cerebral Tumour	3	1	1	0.02
Congenital Abnormalities				
Heart	183	42	..	0.65
Cleft Palate	25	4	1	0.06
Intestinal Obstruction	28	9	1	0.14
Imperforate Anus	5	1	..	0.02
Pyloric Stenosis	17	3	1	0.05
Hydrocephalus and Meningocele	12	3	1	0.05
Syphilis	25	7	..	0.11
Others	11	3	2	0.05
Diabetes	2	..	..	..
Encephalitis				
Japanese B.	24	4	1	0.06
Others	122	24	11	0.37
Epilepsy	43	2	1	0.03
Emphyma	27	5	2	0.08
Gastro-enteritis	1,179	179	74	2.77

TABLE 71—continued

	Admissions	Total Deaths	Deaths within 24 hours	% Mortality Rate on 6,473 admissions
Infectious Diseases				
Amoebiasis	24	1	..	0.02
Bacillary Dysentery	26	2	1	0.03
Chicken-pox	11	..	..	..
Diphtheria	33	6	6	0.09
Measles	73	1	..	0.02
Mumps	4	..	..	..
Poliomyelitis	10	1	1	0.02
Typhoid	25	..	..	..
Whooping Cough	115	3	1	0.05
Others	16	1	..	0.02
Infective hepatitis	131	4	1	0.06
Jaundice of unknown etiology	74	17	9	0.26
Kernicterus	35	29	20	0.45
Laryngo-tracheo-bronchitis	9	..	..	..
Lung Abscess	11	6	2	0.09
Lung Cyst	8	3	..	0.05
Malaria	5	..	..	..
Malnutrition	58	7	1	0.11
Meningitis-purulent	59	19	10	0.30
Mental deficiency				
Mongol	37	6	..	0.09
Cretin	4	..	..	..
Cerebral Palsy	22	..	..	..
Microcephaly	25	3	..	0.05
Others	4	..	..	..
Naso-pharyngitis and Tonsillitis	832	3	2	0.05
Nephritis				
Acute	219	2	..	0.03
Subacute	5	2	1	0.03
Chronic	60	3	1	0.05
Otitis Media .. .. .	..	..	..	..
Pneumonia	1,251	251	116	3.88
Pneumothorax	4	..	..	..
Poisoning				
Kerasinge	12	..	..	..
Alkali	32	..	..	..
Others	43	..	..	..
Prematurity	35	26	7	0.40
Pyelitis	20	1	1	0.02
Pneumatic Diseases				
Arthritis	22	1	1	0.02
Cardiac	34	3	1	0.05
Chorea	6	..	..	..
Rickets	12	1	..	0.02
Scurvy .. .. .	..	..	..	..
Septicæmia	12	5	2	0.08

TABLE 71—continued

	Admis- sions	Total Deaths	Deaths within 24 hours	% Morta- lity Rate on 6,473 admissions
Skin disorders				
Eczema	7	1	..	0.02
Pemphigus	23	1	..	0.02
Impetigo	4	..	..	..
Allergic dermatitis	13	..	..	..
Others	29	..	..	..
Stomatitis	37	1	1	0.02
Tuberculosis				
Pulmonary	110	9	2	0.14
Meningitis	78	36	9	0.56
Disseminated	21	11	2	0.17
Abdominal .. .. .	..	..	..	..
Glandular	18	1	..	0.02
Bone and joint	4	..	..	..
Others	22	1	..	0.02
Tetanus	26	11	8	0.17
Worms				
Ankylostomiasis	46	2	..	0.03
Ascariasis	2	..	..	..
Miscellaneous	422	58	23	0.92

THE SURGICAL UNITS

Surgical Unit "A"

324. The volume of surgical work has increased considerably and this was not proved to be a surprise. The graph on page 115 shows the tremendous increases in admissions and operations that have been occurring from year to year. The waiting list at the end of the year for Surgical Unit A is up to September 1957; in other words we can render surgical service to only 68.8 per cent of the patients who have been seen in 1956. This would leave 31.2 per cent to be treated in the following year. Looking at these figures it can roughly be estimated that at least another surgical unit of the size of the present ones should have been in existence in 1956 in order to cope with the demands of the surgically sick population just for the year 1956.

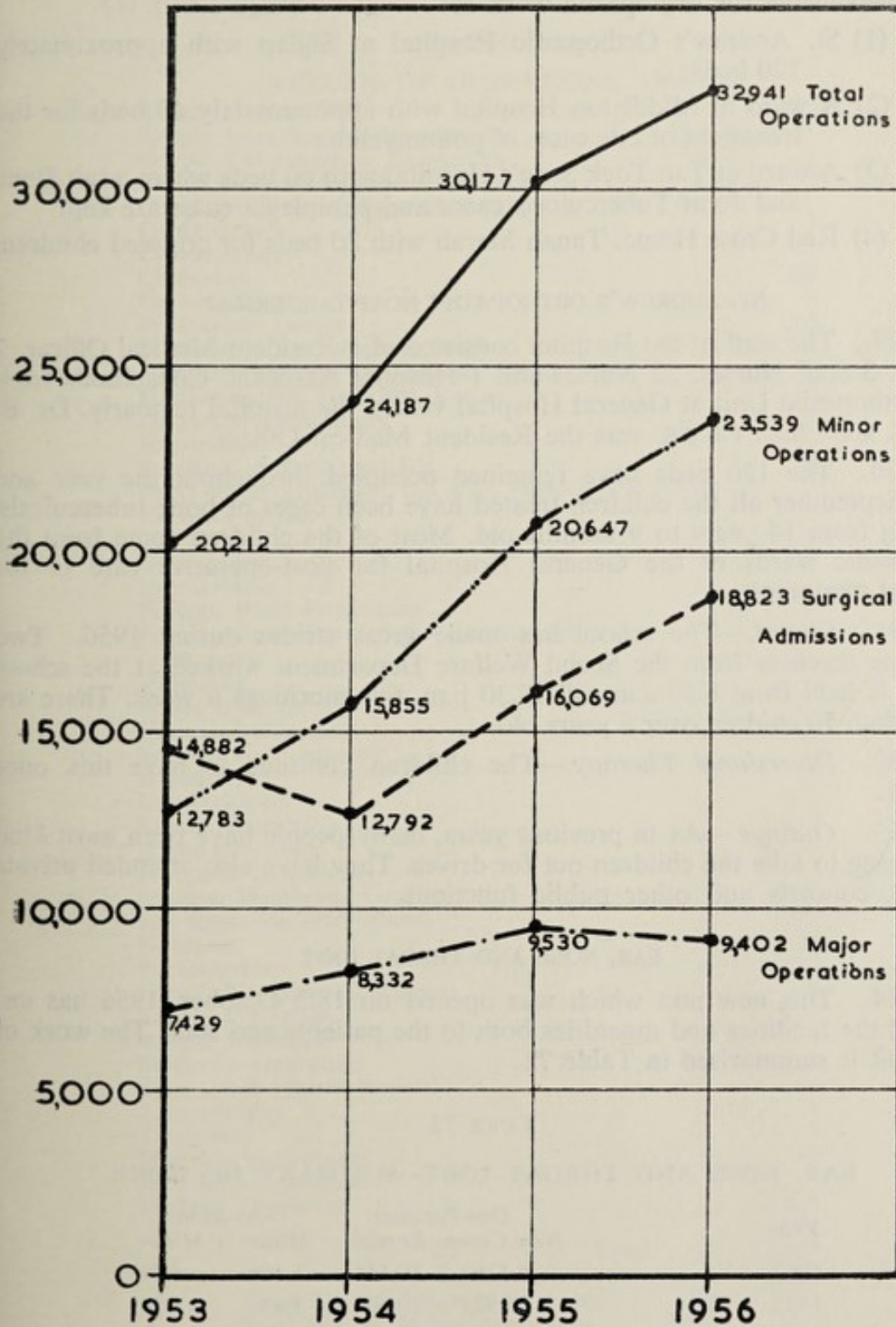
Surgical Unit "B"

325. The work of the Unit is limited to the surgery of the neck, chest and abdomen. There is again an increase in the work done. A very large proportion of the operations done consists of emergencies and of major operations for conditions which cannot be left for more than a few weeks, because they are serious and progressive in character. So much time and beds are taken up with these that the waiting list for less serious cases continues to grow. In the two years 1955 and 1956 there has accumulated 1,200 cases on our waiting list. Every effort is made to get these cases treated.

326. During the year there were 6,728 admissions to the Unit and 2,468 major operations and 3,956 minor operations were done. 9,826 new surgical out-patients and 25,692 repeats were seen.

GENERAL HOSPITAL

OPERATIONS AND ADMISSIONS TO SURGICAL UNITS



Surgical Unit "C"

327. This surgical unit is the Department of Orthopædic and Traumatic Surgery. During the year 2,062 in-patients and 93,210 out-patients were seen. 1,380 major operations, 6,549 minor operations, 3,712 plaster of paris applications and 1,931 toilet and sutures were done.

328. In addition to work at General Hospital the staff of Surgical Unit C were responsible for orthopædic work at:—

- (1) St. Andrew's Orthopædic Hospital at Siglap with approximately 120 beds;
- (2) A ward at Middleton Hospital with approximately 40 beds for the treatment of late cases of poliomyelitis;
- (3) A ward at Tan Tock Seng's Hospital with 60 beds where adult Bone and Joint Tuberculosis cases and paraplegia cases are kept.
- (4) Red Cross Home, Tanah Merah with 20 beds for crippled children.

ST. ANDREW'S ORTHOPÆDIC HOSPITAL, SIGLAP

329. The staff of the Hospital consisted of 1 Resident Medical Officer, 2 Sisters, 3 Staff Nurses, 22 Nurses and 1 Hospital Assistant. Consultants from the Orthopædic Unit at General Hospital visited the hospital regularly. Dr. E. Crowe, M.B., B.S., F.R.C.S. was the Resident Medical Officer.

330. The 120 beds have remained occupied throughout the year and since September all the children treated have been cases of bone tuberculosis, ranging from 14 years to 9 months old. Most of the children come from the orthopædic wards of the General Hospital for post-operative care or for surgical treatment.

331. *School.*—The school has made great strides during 1956. Two full-time teachers from the Social Welfare Department worked at the school which is held from 8.30 a.m. till 12.30 p.m. five mornings a week. There are more than 70 children over 6 years old.

332. *Diversional Therapy.*—The children continue to have this once a week.

333. *Outings.*—As in previous years, many people have been most kind in coming to take the children out for drives. They have also attended private parties, concerts and other public functions.

EAR, NOSE AND THROAT UNIT

334. This new unit which was opened on 18th October, 1956 has improved the facilities and amenities both to the patients and staff. The work of the Unit is summarised in Table 72.

TABLE 72

EAR, NOSE AND THROAT UNIT—SUMMARY OF WORK

Year	Out-Patients		Operations	
	New Cases	Repeats	Major	Minor
1952	4,126	10,541	1,186	939
1953	5,492	10,806	1,686	1,008
1954	6,642	12,139	2,042	1,217
1955	8,675	21,500	2,414	1,807
1956	9,563	19,228	1,855	1,815

OPHTHALMIC UNIT

335. The work of the Ophthalmic Unit consisted of—

- (1) Out-patient cases of ophthalmic condition;
- (2) Cases referred for ophthalmic complications of general medical and surgical conditions;
- (3) Traumatic and Emergency cases;
- (4) Eye surgery.

TABLE 73

RETURN OF OPERATIONS, 1956

Arruga's operation	...	...	22
Simple Intracapsular Extraction	...	381	} 538
Simple Extracapsular Extraction	...	92	
Combined Intracapsular Extraction	...	44	
Combined Extracapsular Extraction	...	21	
Capsulectomy	...	...	1
Cyclodialysis	...	...	2
Chalazion	...	...	597
Cyclodiathermy	...	...	5
Diathermy Lashes	...	...	265
Diathermy of Prolapsed Iris	...	...	1
Diathermy Ulcers and Vessels Granuloma	...	...	2
Diathermy for Detached Retina	...	...	9
Dacryocystorhinostomy	...	...	16
Expression	...	...	38
Excision of Prolapsed Iris	...	...	39
Excision of Prolapsed Iris with purse string suture	...	...	1
Excision of Sac	...	...	8
Enucleation	...	...	39
Evisceration	...	...	12
Exenteration	...	...	2
Foreign Body Extraction	...	...	282
Foreign Body Extraction with Magnet	...	...	8
Iridectomy	...	...	15
Iridotomy	...	...	4
Broad Iridectomy	...	...	28
Optical Iridectomy	...	...	6
Peripheral Iridectomy	...	...	9
Iridodialysis	...	...	13
Iris Inclusion	...	...	1
Linear Extraction	...	...	2
Iridosclerectomy	...	...	4
Marginal Sclerotomy	...	...	1
Mucous Membrane Graft	...	...	45
Mc Reynolds (pterygium)	...	...	301
Needling	...	...	57
Paracentesis	...	...	35
Ptosis (Blaskowicz's Repair)	...	...	1
Squint Operation	...	...	35
Scleral Resection	...	...	1
Stallard's Operation	...	...	1
Skin Graft Plastic Repair	...	...	11
Tarsorrhaphy	...	...	5
Trephine	...	...	3
Wiener's Operation	...	...	34
Wheeler's Operation	...	...	3
Various Operation	...	...	1,065
		Total	3,567
Total No. of Major operations			908
Total No. of Minor operations			2,659
Total			3,567

ANÆSTHETIC UNIT

336. Table 74 is an analysis of the anæsthetics administered during 1956.

TABLE 74
ANALYSIS OF ANÆSTHETICS ADMINISTERED, 1956

Operating Theatres	General Anæs.	Spinal Anæs.	Local Anæs.	Major Cases	Minor Cases	Total
Surgical Unit "A"	2,648	670	2,674	2,418	3,574	5,992
Surgical Unit "B"	2,209	629	2,317	2,468	2,687	5,155
Surgical Unit "C"	2,526	10	3,236	1,375	4,397	5,772
Kandang Kerbau Hospital ..	6,261	244	47	1,414	5,138	6,552
E.N.T. Unit	593	..	618	..	..	1,211
Ophthalmic Unit	129	..	..	..	..	129
Dental Clinic	4,159	..	..	..	..	4,159
Total	18,525	1,553	8,892	..	..	28,970

337. There has been a further increase in the total number of anæsthetics administered, from 23,494 in 1955 to 28,970 in 1956. Of particular interest is the great increase in the number of major Thoracotomies since 1952, as shown in the tabulation below—

Year	Major Thoracotomies
1952	63
1953	121
1954	179
1955	286
1956	399

338. During 1956 fourteen operations on the heart or Great Vessels were performed, of which ten were for Patent Ductus Arteriosus, one for Pericardial effusion and three for Mitral Stenosis. The technique of hypothermia (cooling) was employed in three cases.

SKIN CLINIC

339. The Skin Clinic is one of the out-patient clinics run by Medical Unit II and is under the direction of Dr. Khoo Oon Teik, M.D., M.R.C.P., F.R.F.P.S. 5,253 new cases were seen during this year and 6,435 cases were seen again, making a total of 11,688 cases for the year.

340. The lack of a separate department is evident, especially in the treatment of in-patients who are now dispersed in the different wards, both medical and surgical. The incidence of Lupus Erythematosus appears to be increasing and leprosy is on the wane. Pemphigus has been successfully treated with Corticoids and followed up in the Clinic with Chloroquin Therapy. Pyoderma and Dermatitis continue to be the commoner ailments seen.

DIETETIC SECTION

341. The average number of patients catered for has risen from 901 daily in January 1956 to 1,028 in December 1956. The average daily cost of food-stuffs is listed below—

			S	c.
(1) Paying patients (a)	...	...	3	90
(2) Paying patients (b)	...	...	2	23
(3) Child patients	...	...	1	31
(4) Non-paying patients	...	...	0	96

PHYSIOTHERAPY DIVISION

TABLE 75

SUMMARY OF WORK, 1956

		<i>New cases</i>	<i>Repeats</i>
Siglap Orthopædic Hospital	...	25	1,439
Tan Tock Seng's Hospital	...	448	22,659
Middleton Hospital	...	60	6,237
Tanah Merah Red Cross Home	...	18	6,813
Surgical and Medical Physiotherapy		10,419	142,076

342. As will be seen from the numbers the physiotherapy division in 1956 once again increased in the amount of work undertaken. 10,419 new cases were treated and 142,076 treatments were given in the course of the year, compared with 8,265 new cases and 118,946 repetitions in 1955. In the Gymnasium and Remedial Rehabilitation Ward 10,803 treatments and 945 new cases were seen. The staff of the Division consisted of 14 Physiotherapists.

OCCUPATIONAL THERAPY

343. The Occupational Therapy Division continues to treat out-patients sent to us by Doctors, chiefly from the Orthopædic Unit. Also in-patients who are recommended by the Doctors are visited in the wards by the staff of the department.

344. Visits have been made regularly once a week to the Red Cross Home, Tanah Merah Besar. Crafts and occupations have been taught to the children, with the intention of helping them to become practical and capable with their hands and not with the idea of training them for a job after they leave the Home. Some of the crafts taught are for a definite remedial aim in view, i.e. post-polio and spastic cases.

345. Visits have also been made to the Kandang Kerbau Hospital. The third class medical ward only has been visited where patient's are in hospital for some time before and after their delivery. Occupational Therapy has been thought to have helped these patients from getting too depressed. Knitting, sewing and toy making have proved to be the most useful crafts.

346. Home-bound patients have been visited throughout the year in their own homes. Work has been taken to them and returned to the department and sold, whereby the patient received a little money.

TABLE 76

SUMMARY OF WORK OF OCCUPATIONAL THERAPY DIVISION

	<i>No. of Treatments</i>	<i>New Cases</i>
General Hospital ...	17,782	846
Tanah Merah Red Cross Home ...	641	12
Kandang Kerbau Hospital ...	609	220
Total ...	19,032	1,078

ALMONER'S DIVISION

347. The scope and responsibilities of the Almoners' Service increased considerably both with the increasing demands made by the medical profession and the general public.

348. 8,437 patients were assisted in various ways. The main needs met were by financial assistance for purposes of transportation to specialist centres from outlying areas, assistance in the case of extreme indigence, investigations into home surroundings, discussion of domestic and emotional problems, re-orientation of attitudes towards illness and treatment, arranging care for the chronically ill and disabled especially those suffering from cancer, assistance and co-operation with voluntary organisations such as the Society of the Deaf and Dump, Blind Welfare Association, Singapore Children's Society, etc.

349. Children in the Pædiatric Unit were supplied with U.N.I.C.E.F. milk and special money grants were made to parents to purchase adequate and nourishing food for children suffering from malnutrition. The Almoner was also responsible for the boarding out of children for convalescence in cases where home conditions were most unsuitable and the children being re-admitted time after time.

350. In the Medical Units patients were helped with financial assistance for special diets recommended by physicians, special care was provided for patients suffering from hemiplegia and arrangements were made for the care and support of children whilst mothers were in-patients in hospital.

351. More than 2,000 patients were referred to the Almoner at the Orthopædic Unit. The Almoners' Division continued to be responsible for the supply of surgical and orthopædic appliances to patients in the free wards; patients paying what they could towards the cost of the appliances whilst the rest was met from the Government Appliance Vote. This service has made it possible for a large number of patients having completed their treatment to be self-supporting again.

352. The two most pressing problems have continued to be—

- (1) The care of the chronic or incurable patients: The Almoners have continued to make arrangements for the discharge of the chronically ill or incurable patients. The hospitals such as the Kwong Wai Siu and Hylam Hospitals have been most co-operative in taking into their care a number of such patients. The Almoners have arranged domestic help at home, supplied bed-pans, urinals rubber sheets and blankets from the Red Cross Loan Store so that a number of these patients have been cared for at home. A waiting list for admission of male patients to the chronic ward in Tan Tock Seng's Hospital was maintained on a point system taking into consideration both the patients' medical and social conditions.

- (2) The employment of the disabled and handicapped: Patients fit for light work have little opportunity to find work but their allowance from the Social Welfare Department are reduced. Since light work is in fact not available, such ex-patients are forced to attempt heavy manual labouring jobs and consequently have a relapse, or alternatively, their income may be so inadequate that malnutrition causes them to fall ill again. Although the Labour Department has a training scheme for disabled persons, the scheme cannot meet the needs of all the disabled in Singapore, who have no basic education or training and who therefore have little chance of gaining employment other than heavy manual jobs.

353. A Register for mentally deficient children has been maintained, deaf and dumb children were referred to the Deaf and Dumb Association for registration and the blind patients were also referred to the Blind Welfare Association for registration.

CHAPTER SIXTEEN

OUT-PATIENT DISPENSARY SERVICE

354. This report covers the static dispensary services on the Island. A total of 844,476 attendances were recorded from the various clinics; 259,812 were new cases and 584,664 were repeat cases. Of these approximately 71 per cent were Chinese, 15 per cent Indians, 6 per cent Malays and the balance of 8 per cent Europeans, Eurasians and other races. The distribution of these dispensaries, the clinic sessions held and the staff are given in Table 77. Dr. C. Marcus, L.M.S. (Singapore) was in charge of the Service.

TABLE 77

STAFF, CLINIC SESSIONS AND DISTRIBUTION OF OUT-PATIENT DISPENSARIES

Clinic	Sessions	Medical Officers	Sister	Nurses	Hospital Assistants	Lab. Assts.
General Hospital Out-patient and Casualty Unit	Out-patients: 8 a.m.—4 p.m. Casualty and Emergency Out-patients: 24 hour service	9	3	10	20	1
Tan Tock Seng's Hospital Out-patient Unit	Morning Sessions	1	..	..	1	..
Kandang Kerbau Hospital Out-patient Unit	Morning and afternoon sessions	2	..	1	..	..
Paya Lebar Outdoor Dispensary	Morning Sessions	1	..	1	1	..
Bukit Timah Outdoor Dispensary	Morning and afternoon sessions	Part-time work by M.O. Rural North and West	..	1	1	..
Rural North and West Dispensary Service	Bukt. Panjang: Thrice weekly morning and afternoon sessions					
	Thomson Road: Twice weekly morning and afternoon sessions	1	..	1	1	..
	Holland Road Once weekly morning session					
Rural East Dispensary Service	Changi Point: 2 afternoon sessions weekly	Part-time work by M.O. Changi Frison	..	..	Part-time work by H.A.i/c Travelling Dispensary	..
	Kampong Batak: 2 afternoon sessions weekly					
	Gulega Road: 1 afternoon session weekly	Do.	..	..	..	..
Pulau Tekong Clinic	Morning and afternoon session	Do	..	..	1	..

Note:—Except at the Casualty and Emergency Out-patients at the General Hospital where a service is provided at all times, all other out-patient units do not function on Sundays and holidays.

General Hospital: Out-patient and Casualty Unit

355. The Out-patient and Casualty Unit of the General Hospital recorded a total of 517,669 cases from different sections of the department made up as follows:—

TABLE 78

CASES SEEN AT GENERAL HOSPITAL OUT-PATIENT AND CASUALTY UNIT

	NEW CASES			REPEAT CASES			Total
	Male	Female	Child	Male	Female	Child	
General Out-patient cases	34,281	32,389	37,530	49,037	35,805	41,540	230,582
Casualty cases ..	26,664	7,266	11,772	16,563	3,845	6,339	72,449
Treatment/Dressings ..	..	..	..	88,612	44,717	49,879	183,208
Admissions ..	20,888	10,542	..	..	..	..	31,430
Total ..	81,833	50,197	49,302	154,212	84,367	97,758	517,669

356. Comparative figures from previous years are as follows:—

1953	...	...	...	339,238
1954	...	...	...	466,904
1955	...	...	...	509,053
1956	...	...	...	517,669

General Out-patients

357. 230,582 were recorded against 201,619 in 1955, an increase of 28,963. 58 males and 96 females were examined for assessment of age for the Labour Department, Commissioner for Registration, Immigration and Police Departments. 297 males and 103 females positive tuberculosis cases were detected and referred to the Tan Tock Seng's Hospital.

Casualty Room

358. 72,449 casualties were seen in 1956 as against 82,537 in 1955, a decrease of 10,088.

	1955	1956
Road accidents	4,010	4,047
Examination for alcoholic intoxication	967	1,035
Rape and other sexual offences	74	53

Treatment and Dressing Rooms

359. This section does dressings and treatment for cases from the Out-patient and Casualty Unit, Skin Clinic, Orthopædic, Surgical and Medical Out-patients Units of the hospital. During the year under review 183,208 cases were dealt with, a decrease of 14,296 from the previous year of 197,504.

Laboratory

360. 18,875 routine specimens were examined during the year—

Urine	...	...	...	9,114
Blood	...	...	...	6,416
Fæces	...	...	...	2,480
Smears	...	...	...	865
		Total	...	<u>18,875</u>

Tan Tock Seng's Hospital Out-patient Unit

361. During the year 31,687 cases were seen to. The clinic is primarily for male out-patients and the staff of the Tan Tock Seng's Hospital.

Kandang Kerbau General Out-patient Unit

362. This clinic is for women and children. During the year 34,431 women and 49,666 children attended this clinic.

Rural North and West Dispensary Service.

363. During the year the total attendance at the general out-patient clinics is shown below:

			<i>Total Attendance</i>
Bukit Panjang Clinic	...	...	22,890
Thomson Road Clinic	...	...	15,283
Holland Road Clinic	...	...	5,456

Buikit Timah Outdoor Dispensary

364. The primary function of this outdoor dispensary is to continue treatment of patients resident in this area who have been discharged from the hospitals. The Hospital Assistant also treats minor conditions and refers the more serious cases to the Clinic at Bukit Panjang or to the General Hospital. A total of 18,415 attendances were reported during 1956.

Paya Lebar Outdoor Dispensary.

365. At this general out-patient clinic 53,082 patients were seen during the year.

Rural East Dispensary Service

366. The total attendances at the general out-patient clinics is shown below:

			<i>Total Attendances</i>
Changi Point Clinic	...	...	4,073
Kampong Batak Clinic	...	...	5,574
Gulega Road Clinic	...	...	4,028

Pulau Tekong Clinic

367. A cottage hospital and dispensary, under the charge of a hospital assistant, with weekly visits from a Medical Officer, functioned on the island throughout the year.

CHAPTER SEVENTEEN

TUBERCULOSIS SERVICE

TAN TOCK SENG'S HOSPITAL

368. Tan Tock Seng's Hospital continued its role as the chief Government Tuberculosis Centre. The completion of two new ward blocks in December 1956 constitutes the realisation of the first phase of the general plan for enlargement and extension of the Tuberculosis Service. Considerable preparatory work in connection with the Government's Tuberculosis Programme which includes a major scheme for case finding and the introduction of fresh legislation, had been done during the year.

Staff

369. The staff of the Hospital consisted of 3 Chest Physicians (Super-scale), 2 Chest Physicians (Timescale), 11 Medical Officers, 16 Sisters, 51 Nurses, 200 Assistant Nurses, 3 Almoners, 1 Radiographer, 1 Physiotherapist, 1 Occupational Therapist, 30 Hospital Assistants and 1 Laboratory Assistant. The Hospital was run on the two-unit system; Dr. C. E. Smith, L.M.S. (Singapore) T.D.D. (Cardiff) and Dr. R. J. Grove-White, M.D. (Dublin) M.R.C.P. (Edin.) were in charge of the two units. Dr. C. E. Smith was also the Medical Superintendent of the Hospital.

370. Singapore was represented by Dr. Smith at the Tuberculosis Conference in Trivandrum, India, in January 1956. The Conference was held under the auspices of the International Union Against Tuberculosis and of the Tuberculosis Association of India.

Routine Work

371. There was a change in the pattern of treatment during the year. A smaller number of cases for reversible collapse therapy were induced during the year. During 1956 there were only 306 inductions compared with 895 inductions in 1955. Artificial pneumoperitoneum rather than artificial pneumothorax is the method commonly adopted for reversible collapse therapy. Chemotherapy has been given over a prolonged period with a minimum of one year. Streptomycin, P.A.S. and I.N.A.H. in some combination or other are the three drugs, in common use.

372. Cases selected for major thoracic surgery had the pre-operative preparation and post-operative follow up done at Tan Tock Seng's Hospital while the operation was done at the Surgical Units at the General Hospital. 640 minor operations were carried out at Tan Tock Seng's Hospital; of these 381 were bronchoscopic, 43 phrenic crushes and re-crushes, 27 laryngoscopic examinations and 67 plaster of paris applications.

373. The morbidity rate is still a matter for speculation. From medical evidence it is considered that not less than 3 per cent of the population is suffering from active pulmonary tuberculosis.

374. The crude death rate for the last ten years from pulmonary tuberculosis is given in Table 79. The figures show a considerable decline in the rates in the post-war period and an even more shocking improvement over pre-war rates.

TABLE 79

CRUDE DEATH RATE FROM PULMONARY TUBERCULOSIS

Year	Population	No. of deaths from Pulmonary Tuberculosis	Index
1939-41	—	2,288 (per million)	100
1947	938,079	1,468	64
1950	1,015,453	1,211	53
1953	1,120,777	811	32
1955	1,210,534	827	29
1956	1,261,677	673	24

375. Table 80 gives a return of tuberculosis cases admitted to Government hospitals in Singapore. Admission to hospital for in-patient treatment is made according to various priorities on medical and social grounds.

TABLE 80

TUBERCULOSIS CASES ADMITTED TO GOVERNMENT HOSPITALS, 1952-56

	1952	1953	1954	1955	1956
<i>Tan Tock Seng's Hospital:</i>					
Pulmonary	1,469	1,750	2,137	2,104	2,061
Bones and Joints	18	40	35	59	79
Other forms	17	10	11	12	22
<i>General Hospital:</i>					
Pulmonary	596	537	686	776	944
Bones and Joints	209	217	240	287	146
Other forms	323	283	297	339	415
<i>St. Andrew's Orthopaedic Hospital:</i>					
Bones and Joints	73	78	170	247	104
Other forms	62	59	—	—	105
Total	2,767	2,974	3,576	3,824	3,876

ALMONER'S DIVISION

379. All the new cases together with those accumulated over the years are dealt with by this Division. 3,627 new patients were seen by the Almoners.

380. Re-employment of patients continues to be a major problem. Due to the comparative absence of light industry in the Colony suitable work for Tuberculosis patients has always been difficult to secure, but the problem has been further accentuated by increased unemployment. Although those ready for work are placed on the Disabled Persons' Register the lack of basic educational background in the majority of patients makes it difficult to place them in or train them for suitable employment. Moreover only a limited number of vacancies are notified to the Labour Department. There is also the prejudice that employers taking on tuberculous persons and of employees accepting in their midst such workers. The Almoner is often forced to depend on financial allowances until such time as the patient and his family can make alternative arrangements.

381. During the year arrangements were made for the supervised fostering of children, especially babies born into infectious homes.

HEALTH VISITORS' DIVISION

382. The staff of the Division consisted of one Health Sister, six Staff Nurses and three Assistant Nurses.

383. Two contact clinics (one for each unit) were held weekly by the Medical Officers when cases were brought up for review. Average attendances were 130 per session. Routine visits to homes of patients on Tuberculosis Treatment Allowances continued throughout the year at two-monthly intervals. Cases that were reported by the Medical Officer to be deteriorating or unco-operative in following prescribed home treatment were visited more frequently. Supervision of all proved cases of pulmonary tuberculosis and their contacts was also done. A summary of the work done by the Health Visitors' Division is given in Table 83.

TABLE 83

SUMMARY OF WORK DONE BY THE HEALTH VISITORS' DIVISION,
TAN TOCK SENG'S HOSPITAL

	1952	1953	1954	1955	1956
Home visits to patients ...	6,090	6,440	6,331	8,887	10,576
Home visits to contacts ...	4,960	4,917	6,153	8,837	11,724
Tuberculin tests done ...	963	1,098	2,880	4,184	5,482
B.C.G. Vaccinations done ...	563	636	843	1,086	1,417
Contact Clinic attendances ...	3,962	5,368	7,839	9,414	12,937

PHYSIOTHERAPY DIVISION

384. Much of the work of the physiotherapists has been the pre-operative preparation and post-operative management of patients for major thoracic surgery. Some work was done with chronic orthopaedic cases with a view to getting them up and about.

TABLE 84

SUMMARY OF WORK DONE BY THE PHYSIOTHERAPY DIVISION

<i>Year</i>	<i>Treatments</i>	<i>No. of Patients Treated</i>
1953	13,318	n.a.
1954	30,318	1,647
1955	26,629	1,578
1956	22,118	1,688

OCCUPATIONAL THERAPY

385. Training during the year were mainly a general course of training in sewing, cutting and dress-making.

386. There were very few placements in employment. With a view to providing a rehabilitation centre and sheltered workshop steps were taken to expand the Occupational Therapy Division.

387. One of the patients won the second prize in the Arts and Crafts Competition at the Singapore Agricultural Show in September 1956.

DIVERSIONAL THERAPY DIVISION

388. This Division reports a very good year when the volume and variety of work done by the patients increased.

389. A knitting teacher appointed last year has been successful in improving the quality and quantity of patients knitting. Some patients produced elaborate designs of their own—some of them in spite of being unable to read a pattern book.

390. The children's classes which were started as a diversion have now been taken over by the Education Department, so that systematic and organised training in line with teaching outside can be given.

391. Sewing and embroidery was done in the female wards. Felt toys have been a favourite with all patients.

392. Work done by patients was exhibited in the Arts and Crafts Section of the Singapore Agricultural Show; first prizes for knitting and for sewing and a second prize for a hand-made dress were won by patients' exhibits.

393. Approximately 50 voluntary workers kindly gave their services to run the Division.

RED CROSS LIBRARY

394. Five main trolleys—one carrying English books and magazines, one Tamil and Malayalam, one Malay and two Chinese—were in operation during the year. These went regularly into every ward. Each patient was visited in his bed and was able to make his selection. There has been a definite increase in the number of patients requesting books in the latter part of the year.

395. Vernacular books are purchased from Red Cross Funds. English magazines are regularly given by the Singapore Cricket Club and a large number of books are given annually by the Tanglin Club.

HOSPITAL SCHOOL

396. A lady teacher was appointed on 1st May, 1956 to take charge of classes for child patients in the Hospital. Teaching was carried out in wards 7, 8, 9 and at Mandalay Road Section of the Hospital. The following is the number of children receiving instruction:—

Ward 7	...	...	10-12 children (aged 5-13 years).
Ward 8	...	...	2 children (aged 16 years).
Ward 9	...	...	3- 7 children (aged 13-16 years).
Mandalay Road	...	...	5- 8 children (aged 5-16 years).

397. It has not been possible to adhere to a planned course of instruction for a number of reasons. The main reasons are the continual movements of children in and out of hospital, the ranging ages of the children, the varying standards of education and the varying pattern of previous education which might be at English, Chinese, Malay or Tamil school.

398. Main subjects taught were English and Elementary Arithmetic.

399. Although there have been handicaps referred to in the teaching of children the school has served a real need in keeping the children's minds occupied while in hospital and in reducing the gap in their schooling as a result of hospitalisation.

DEVELOPMENT PROGRAMME

400. Two new ward blocks were completed and were ready for occupation in December 1956. Progress has been made in the construction of the kitchen, stores, laundry and central sterilising unit which will be ready in 1957. The S.S. Hostel of the University of Malaya at Mandalay Road has been converted into a Hostel for Assistant Nurses. Plans are well advanced for the opening of the first follow-up clinic in the Geylang-Katong area in 1957.

ROYAL SINGAPORE TUBERCULOSIS CLINIC

401. The year 1956 was the ninth year of the Singapore Anti-Tuberculosis Association's work and showed continued progress. There is a steady increase in the number of persons coming for X-rays and treatment. There has been expansion of rehabilitation in the new Welfare Centre and at the South Winds Settlement.

402. *Diagnostic Unit.*—X-ray services have increased and expanded. Over 93,000 X-ray examinations were made over the year, 14,000 more than the previous year. Many of these were for Insurance members. The general radiology service was increasingly used by general practitioners.

403. Arrangements have been made whereby all treatment cases will be examined with the new X-ray unit in the Welfare Centre, thus leaving the units in the Diagnostic Centre free to X-ray Insurance members and all members of the public who come for X-ray examinations either from private practitioners or on their own initiative, and who will thus avoid all contact with infected persons. The Mobile X-ray Unit was used where suitable conditions obtained to X-ray groups of school children and staffs of firms situated at a distance from the Clinic.

404. *SATA'S Insurance Scheme.*—Against pulmonary tuberculosis the Scheme attracted some 3,000 new members in 1956. It is now supported by a large proportion of the bigger firms in the City. Nearly 15,000 persons have joined the scheme. The value of the scheme to the person insured has again been shown by the finding of 30 cases of early tuberculosis among its members during 1956.

405. *Treatment Unit.*—On an average, 168 new patients a month have been added to the thousands of patients already under treatment and supervision. The Health Sister was responsible for the home treatment of a daily average of 77 very ill patients throughout the year. The Mobile Treatment Unit brought routine treatment twice weekly to within easy reach of some 450 patients living in outlying parts of the City and island. Evening sessions catered twice a week for about 100 persons unable to attend during normal working hours.

406. The honorary Visiting Surgeons continued their weekly visits to the Clinic for consultations on cases requiring surgery. They accepted 220 patients for major thoracic surgery. Sessions held by the honorary Visiting Consultant Physicians took place each Saturday morning.

407. The laboratory services were expanded by the introduction of the culture procedure for laryngeal swabs as well as sputa. An increasing number of blood examinations were carried out for general practitioners.

408. *Welfare Unit.*—The Lady Almoner and her staff have continued the essential welfare care of patients under treatment. Light meals were served from the Welfare Centre Milk Bar to an average of 200 patients a day.

409. *Rehabilitation.*—This work continues to expand both at the Rehabilitation Centre and at the South Winds Settlement. In addition to its obvious advantages to the trainees, the presence of a thriving Rehabilitation Centre, where patients who are nearly at the end of their road to recovery can be seen equipping themselves with knowledge of a trade to take back with them into normal life, is in itself an encouragement to patients who are at the beginning of the road. There are now ten workshops in the Centre attached to the Clinic. Sixty patients were in training at the close of the year.

410. *South Winds Settlement.*—South Winds, where convalescents learn farming and rotan work showed by the end of the 1956 a state of affairs rapidly becoming satisfactory. The previous year, 1955, was a struggle for emergence which showed no results until 1956. By the end of 1956, although the number of resident convalescents was doubled, the cost per head was approximately halved.

411. *Propaganda against Tuberculosis.*—This is an important function of the Singapore Anti-Tuberculosis Association, and the Clinic played its part in this during 1956 by continuing the popular weekly lecture visits to the Clinic by parties of school children, by showing some 100 persons daily an explanatory film on tuberculosis, by participating in health exhibitions and by the production of a further issue of the SATA Review.

412. *Pan-Malayan Tuberculosis Conference.*—A successful conference, the first Pan-Malayan Tuberculosis Conference, took place in the just-completed Welfare Centre building of the Clinic from November 1-4, 1956 under the auspices of SATA.

TABLE 85

S.A.T.A. CLINIC STATISTICS FOR THE YEAR 1956

	1956	1955
<i>Diagnostic Unit</i>		
Total X-rays (including 22,370 Treatment Unit re-x-rays)	93,805	79,810
Daily average	348	293
Laboratory tests:		
Blood sedimentation	34,972	37,453
Blood counts	7,316	6,330
Mantoux tests	4,316	2,427
B.C.G.	1,414	492
<i>Treatment Unit</i>		
Total number of attendances	208,841	162,106
Daily average attendances	775	595
Total number of services rendered	433,208	341,123
Daily average services	1,608	1,254
Consultations with Physicians:		
New cases	1,815	
Old cases	26,924	
	<u>28,739</u>	25,473
Laboratory tests:—		
Sputa—direct smear	16,511	
culture	2,185	
	<u>18,696</u>	
Laryngeal swab cultures	992	
Other tests	10,138	
	<u>29,826</u>	33,007
Electrocardiographs	337	301
<i>Home Visits</i>		
Number of treatment visits by Health Sister	5,330	
Average number of patients receiving home treatment throughout the year	77	
Number of visits for investigation of income, follow up of defaulters, etc.	1,993	
<i>Mobile Treatment Unit</i>		
Number of attendances	23,281	
Average number of patients served by unit throughout the year	365	
<i>Milk Bar</i>		
Free meals served	41,019	42,940
Daily average	200	

CHAPTER EIGHTEEN

SOCIAL HYGIENE

413. The essential factor in the dissemination of venereal diseases, without doubt, is promiscuous sexual relationship. Penicillin can cure the disease, but unfortunately has no effect on sexual habits of the people. Singapore is an international port where there is close contact between people from countries with different levels of health, development and economic status. It is important in such circumstances that not only the local population be healthy and free from infection, but adequate facilities should be provided for the migrant population for proper diagnosis and treatment to limit the importation and subsequent spread of disease. To achieve these objects the Social Hygiene Division maintains:—

- (1) A Social Hygiene Hospital of 65 beds with male and female wards and out-patient clinics in a central part of the City;
- (2) A Seamen's Clinic in the Dock Area of the port of Singapore;
- (3) A Mobile Unit to visit Maternity and Child Health Clinics, Out-patient Dispensaries and Men's Clubs in the rural areas for diagnosis, treatment and discovery of unsuspected cases;
- (4) An Epidemiological Unit for case finding, contact and follow-up purposes; and
- (5) A Laboratory Service to carry out routine tests, including the quantitative serological tests.

414. Considerable progress in further expansion of facilities at the Social Hygiene Hospital has been made during the year. A waiting hall for out-patients has replaced the old male wards, which have been re-built in an adjacent building. An enlarged new dispensary and two additional consultation rooms for Medical Officers have been provided. All these changes had been necessitated due to phenomenal increase in the number of daily attendances of patients which rose from 44,990 in 1947 to 185,452 in 1956. Although the emphasis has been on social and skin ailments the public seek relief for various kinds of disabilities in the institutions of this Division.

Staff

415. The staff consisted of 4 Medical Officers, 2 Medical Practitioners (employed on a session basis), 1 Sister, 11 Hospital Nurses, 21 Hospital Assistants and 11 Supervisors. Dr. Koh Kim Yam, L.M.S. (Singapore), Acting Senior Medical Officer, Social Hygiene, was in charge of the Division until December when Dr. L. M. Ram, M.B., B.S., M.R.C.P., D.P.H., assumed office as Senior Medical Officer, Social Hygiene.

INCIDENCE OF VENEREAL DISEASES

416. The number of venereal infections reported to this Division has steadily declined from 10,460 in 1949 to 4,783 in 1956. Although the downward trend continued the rate of fall in numbers has slowed down for the last three years as shown in Table 86. It appears that a limit of minimum number of infections per annum is being reached.

TABLE 86

INCIDENCE OF VENEREAL INFECTIONS 1949-56

<i>Year</i>			<i>Syphilis Infections</i>	<i>Other V.D. Infections</i>	<i>Total</i>
1949	...	...	4,575	5,885	10,460
1950	...	...	3,147	5,656	8,803
1951	...	...	2,512	5,275	7,787
1952	...	...	2,097	4,243	6,340
1953	...	...	1,925	4,384	6,309
1954	...	...	1,896	3,895	5,791
1955	...	...	1,647	3,441	5,088
1956	...	...	1,226	3,557	4,783

Syphilis

417. Table 87 gives a breakdown of syphilitic infections reported for the last 5 years excluding late symptomatic syphilis (Tertiary Syphilis). Tertiary Syphilis is to a great extent a legacy of pre-penicillin era, but the number of new cases treated has decreased from 412 in 1952 to 155 in 1956. Table 88 gives the breakdown by type of disease, nationality and sex in 1956.

TABLE 87

BREAKDOWN OF SYPHILITIC INFECTIONS, 1951-56

<i>Year</i>	<i>Primary Syphilis</i>	<i>Secondary Syphilis</i>	<i>Early Latent Syphilis</i>	<i>Late Latent Syphilis</i>	<i>Infantile Syphilis</i>	<i>Total</i>
1951	485	460	319	699	70	2,033
1952	322	223	365	676	59	1,645
1953	194	68	516	676	42	1,496
1954	104	39	418	943	25	1,529
1955	88	28	209	1,266	14	1,605
1956	128	41	182	650	10	1,011

Note:—Excluding Tertiary Syphilis.

TABLE 88

TERTIARY SYPHILIS, 1956

Nationality	Gummata and Skin	Bones and Cardio-Joints	Vascular	G.P.I.	Tabes	Others
MALE:						
Chinese ..	15	26	13	2	10	24
Indian ..	10	5	3	..	2	3
Malaysian ..	1	8	1	..	2	1
Others ..	..	..	..	1	..	..
Total ..	26	39	17	3	14	28=127
FEMALE:						
Chinese ..	3	3	5	2	3	9
Indian ..	..	..	..	1	..	1
Malaysian ..	..	..	..	..	..	1
Total ..	3	3	5	3	3	11=28

TABLE 89

RATIO OF VARIOUS SYPHILITIC LESIONS, 1950-56

Lesions	1950	1951	1952	1953	1954	1955	1956
Neuro Syphilis ..	35.6	37.3	37.5	31.0	35.9	40.2	40.0
Cardio-vascular ..	10.8	7.2	9.8	12.3	13.3	22.0	14.2
Cutaneous ..	29.7	19.7	16.1	23.3	22.3	18.9	18.7
Bones and Joints ..	23.9	36.6	33.4	28.5	28.5	18.9	27.1

Note:—The proportion of malignant syphilis, i.e. of cardio-vascular and nervous systems has risen to 56 per cent of such cases.

Gonorrhœa and Non-specific Urethrities

418. While complications of gonorrhœa have reached a vanishing point there is little change in the incidence of these diseases as is evident from Table 90. Constant vigilance is still required for the control of this condition. The increase in the incidence of gonorrhœal ophthalmia in 1956 is a warning against any complacency in relaxing any control measures in this connection.

TABLE 90

INCIDENCE OF GONORRHOEA AND NON-SPECIFIC URETHRITIS, 1952-56

Year	Gonor- rhœa	Gonor- rhoea Oph- thalmia	Gonor- rhœa Compli- cations	Gonor- rhœa and Non- specific Ure- thritis	Non- specific Ure- thritis	Total
1952	2,690	60	55	220	217	3,242
1953	2,843	82	62	221	341	3,549
1954	2,454	21	14	218	424	3,131
1955	2,339	31	18	241	696	3,325
1956	2,584	54	11	240	529	3,418

Other Venereal Infections

419. There has been a steady reduction in the incidence of these diseases as is evident from Table 91. No case of Granuloma Inguinale has been reported for the past ten years.

TABLE 91

INCIDENCE OF OTHER VENEREAL INFECTIONS, 1950-56

Year	Lympho- granuloma Venereum	Soft Sore	Mixed Infections	Granuloma Inguinale
1950	143	1,494	472	..
1951	223	1,600	487	..
1952	194	943	301	..
1953	184	961	252	..
1954	103	1,083	270	..
1955	70	822	161	..
1956	40	647	141	..

420. The mid-year estimated population of Singapore was 1,261,677 in 1956 and the incidence of 4,803 new cases during the year would give an infection rate of 4 per thousand per annum of the population. This does not take into consideration, of course, the numerous cases treated by private medical practitioners and not reported to this Division.

ROUTINE WORK

Attendances

421. The average daily attendances totalled 624 based on 297 working days of the year. Table 92 gives comparative figures for the last five years.

TABLE 92

PATIENT ATTENDANCES AT SOCIAL HYGIENE DIVISION, 1952-56

Year	In-patients	OUT-PATIENTS			Total Attendances
		Males	Females	Total	
1952	2,434	11,129	4,873	16,002	125,150
1953	2,807	12,999	8,618	21,617	146,267
1954	2,332	14,525	9,456	23,981	162,072
1955	1,379	15,803	9,943	25,746	184,033
1956	1,353	14,596	9,955	24,551	185,452

Social Hygiene Travelling Dispensary

422. This facility has been in operation since 25th November, 1950. The number of new cases investigated was 269 in 1950, 2,375 in 1951, 2,753 in 1952, 6,238 in 1953, 6,965 in 1954, 7,352 in 1955 and 8,051 in 1956. The number of ante-natal cases has in the mean time risen from 1,784 in 1951 to 6,271 in 1956. The positive serology rate of 26,022 women examined during the last six years is just over three per cent. The rate has been steadily falling from 4.5 per cent in 1951 to 1.5 per cent in 1956. Tables 93 and 94 summarise the work of this unit. Table 94 shows the number of ante-natal cases examined, the number found positive on routine blood test and whether the woman was a primipara or multipara at the time of first examination.

TABLE 93

CASES TREATED BY SOCIAL HYGIENE TRAVELLING DISPENSARY, 1956

Clinic	Male	Female	Ante-natals	V.D. Cases	Investigation cases	Total
CENTRAL RURAL:						
Yio Chu Kang ..	} 1,311	} 2,382	} 2,338	} 76	} 3,617	} 3,693
Upper Serangoon						
Seletar ..						
Paya Lebar ..						
RURAL WEST:						
Bukit Timah ..	} 431	} 2,142	} 2,086	} 67	} 2,506	} 2,573
Pasir Panjang ..						
Bukit Panjang ..						
Holland Road ..						
Jurong ..						
RURAL EAST						
Kampong Batak ..	} ..	} 1,747	} 1,676	} 40	} 1,707	} 1,747
Changi ..						
Ulu Bedok ..						
Siglap ..						
Gimson School ..	38	1	37	38
Total ..	1,780	6,271	6,100	184	7,867	8,051

TABLE 94
ANTE-NATAL CASES EXAMINED, 1956

Nationality	Ante-natals	Primipara	Primipara Positive	Multipara	Multipara Positive
Chinese ..	3,660	531	12	3,129	30
Malaysian ..	1,832	281	11	1,551	21
Indian ..	594	145	2	449	15
Others ..	14	..	..	14	..
Total ..	6,100	957	25	5,143	66

Epidemiological Section

423. The staff of this section consists of 11 contact workers whose activities are chiefly directed towards:—

- (1) follow-up of treated cases to detect relapse or re-infection;
- (2) contact of defaulters;
- (3) family screening of married patients; and
- (4) voluntary antibiotic prophylaxis of prostitutes.

The personnel of this section was responsible for 14,274 home visits and 4,253 postal contacts. The successful contact index was about 40 per cent.

424. Middle Road Hospital is a place of detention under the Women and Girls Protection Ordinance, Chapter 126. 110 girls below the age of 18 were referred by the Social Welfare Department; 13 of them were found infected, 10 with gonorrhœa and 3 with syphilis.

Antibiotic Prophylaxis

425. This service consists of a weekly administration of 2 cc (600,000 units) of PAM (Penicillin Ammonium Monostearate) to promiscuous women who voluntarily report to the clinic. It was started in 1950 when there were only 117 such persons on record. Although this number has increased to 1,093 in 1956 only 540 attended during the year and received 13,860 injections, an average of 25 injections each. Since October PAM has been replaced by "Bicillin" which is long acting and therefore given fortnightly.

426. Not all prostitutes are found infected on examination. There were 92 new cases registered in 1956 of whom 20 each were suffering from syphilis and gonorrhœa and 3 had mixed infections; 49 were free from any disease. Women receiving prophylactic treatment have seldom again been incriminated as a source of infection except of non-specific urethritis.

Dermatological Clinic

427. 80 per cent of patients attending the various facilities of this division are patients without venereal disease. The majority of them suffer from some kind of skin ailment. Since 1950 diagnosis and treatment of dermatological complaints has been a regular feature of Social Hygiene Clinics and last year an air-conditioned ward was specially provided for treatment of acute skin cases. There were 4,711 new cases registered during the year. There is no doubt that along with venereal diseases, skin ailments are being controlled satisfactorily.

428. Table 95 summarises the routine work in the Social Hygiene Hospital for the last 5 years.

TABLE 95

SUMMARY OF WORK IN SOCIAL HYGIENE DIVISION, 1952-56

	1952	1953	1954	1955	1956
Blood specimen for Kahn Test	27,752	27,364	28,892	29,452	29,315
Cerebro Spinal Fluid for Kahn Test	782	679	461	406	596
Specimen for Dark Ground Microscopic Examination ..	4,797	4,072	4,267	4,091	4,223
Smears for Examination for Gonococci	15,154	16,102	20,861	23,372	26,641
Swabs for Culture for Gonococci	473	491	356	157	110
Aqua Penicillin G used ..	4,778mu	5,455mu	7,753mu	4,035mu	4,020mu
Procain Penicillin P.A.M. ..	25,455 ,,	27,279 ,,	34,398 ,,	31,224 ,,	34,437 ,,
Penidure (Bicillin) .. ..	..	..	382 ,,	1,392 ,,	2,712 ,,
Total number of Injections administered	169,281	177,866	179,423	182,121	179,209

Investigation Cases

429. While in many parts of the world the work-load of Social Hygiene clinics has diminished since the introduction of penicillin, it has increased in Singapore as additional responsibilities have been taken over in the field of general medical work. 80 per cent of the cases belonged to the latter category in 1956. The number for the last 5 years is shown in Table 96.

TABLE 96

GENERAL MEDICAL WORK, SOCIAL HYGIENE, 1952-56

	1952	1953	1954	1955	1956
Apprehensive group including ante-natal and contact cases	5,301	9,466	10,391	10,982	11,265
Dermatological complaints	2,266	3,211	5,412	5,587	4,711
Arthritis and Arthralgia	445	492	419	460	572
Non-gonococcal Urethritis, Cervicitis, Trichomonas, Infestation, Dysuria, etc. ..	846	962	942	985	869
Other genital infections, Balanitis, Warts, Paraphimosis, Traumatic, Ulcers, Hydroceles, Non-specific Epididymitis and sexual complaints	286	299	372	480	692
Yaws	138	253	65	53	30
Leprosy	31	84	24	26	16
Non-venereal Iritis, Conjunctivitis	27	96	82	108	115
Miscellaneous	322	445	483	563	1,478
Total	9,662	15,308	18,190	19,244	19,748

Seamen

430. Under the Brussel's International Agreement of 1924, seamen of all nationalities are afforded all the facilities for free diagnosis and treatment both in the Dock Area Clinic and at the Middle Road Hospital. The number treated during the last 5 years has been as follows:—

1952	...	...	...	864
1953	...	...	...	909
1954	...	...	...	907
1955	...	...	...	1,019
1956	...	...	...	1,072

431. Table 97 gives the break-down by nationality and disease of the seamen treated in 1956.

TABLE 97

SEAMEN TREATED AT SOCIAL HYGIENE DIVISION, 1956

	Primary	Secondary	Tertiary	P.N.I.	Gonorrhœa	Soft Sore	Lymphogranuloma	Mixed Infection	Investigation cases	Total
Chinese ..	..	1	4	13	42	21	..	..	121	202
Indian ..	1	..	..	..	10	5	..	..	23	39
Malaysian ..	2	..	1	10	14	1	1	3	18	50
Eurasian ..	..	..	..	..	1	..	..	..	..	1
European ..	1	..	..	..	66	22	..	..	681	770
Others ..	..	..	..	1	1	1	..	..	7	10
Total ..	4	1	5	24	134	50	1	3	850	1,072

Teaching

432. The Senior Medical Officer, Social Hygiene, was responsible for lectures and practical instruction to 40 medical students and 6 post-graduate students. He is also responsible for venereal disease training of Nurses, Midwives, Almoners, Hospital Assistants and Social Science Students. One Social worker from Burma was trained in field work in the Epidemiological Control Unit.

TABLE 98

MALE AND FEMALE PATIENTS BY DISEASE TREATED AT THE MIDDLE ROAD HOSPITAL, TANJONG PAGAR CLINIC AND TRAVELLING DISPENSARY DURING THE YEAR 1956

	IN-PATIENTS			OUT-PATIENTS NEW CASES				OUT-PATIENTS REPETITIONS			OUT-PATIENTS TOTAL ATTENDANCES				
	Male	Female	Total	M.R.H. and Tr. D. Male	T.P.C. Male	M.R.H. and Tr. D. Female	Total	M.R.H. and Tr. D. Male	T.P.C. Male	M.R.H. and Tr. D. Female	Total	M.R.H. and Tr. D. Male	T.P.C. Male	M.R.H. and Tr. D. Female	Total
I. SYPHILIS															
(a) Primary ..	3	3	6	78	45	5	128	1,681	331	135	2,147	1,759	376	140	2,275
(b) Secondary ..	6	8	14	26	4	11	41	1,348	359	848	2,555	1,374	363	859	2,596
(c) Tertiary ..	97	30	127	105	22	28	155	10,239	712	1,512	12,463	10,344	734	1,540	12,618
(d) Congenital ..	..	31	31	14	1	55	70	688	44	454	1,186	702	45	509	1,256
(e) Period not indicated ..	68	238	306	491	134	307	932	21,840	2,961	13,465	38,266	22,331	3,095	13,772	39,198
II. OTHER VENEREAL DISEASES															
(a) Gonorrhœa ..	6	159	165	1,678	679	227	2,584	6,096	4,075	390	10,561	7,774	4,754	617	13,145
(b) Gonorrhœal Complications	3	1	4	2	..	9	11	530	..	..	530	532	..	9	541
(c) Gonorrhœa Ophthalmia ..	..	62	62	..	..	54	54	..	..	..	..	..	..	54	54
(d) Soft Sore ..	3	..	3	368	278	1	647	2,296	2,231	..	4,527	2,664	2,509	1	5,174
(e) Lymphogranuloma ..	1	1	2	35	5	..	40	304	87	26	417	339	92	26	457
(f) Mixed Infections ..	5	26	31	81	41	19	141	426	454	3,992	4,872	507	495	4,011	5,013
III. INVESTIGATION CASES															
..	173	429	602	7,728	2,781	9,239	19,748	36,347	15,917	31,113	83,377	44,075	18,698	40,352	103,125
Total ..	365	988	1,353	10,606	3,990	9,955	24,551	81,795	27,171	51,935	160,901	92,401	31,161	61,890	185,452

Note: M.R.H. = Middle Road Hospital; Tr. D. = Travelling Dispensary; T.P.C. = Tanjong Pagar Clinic (Docks).

TABLE 99
 MALE AND FEMALE PATIENTS BY NATIONALITY TREATED BY THE SOCIAL HYGIENE DIVISION IN 1956

Nationality	IN-PATIENTS			OUT-PATIENTS (NEW CASES)			OUT-PATIENTS (REPETITIONS)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Chinese ..	242	750	992	7,589	6,266	13,855	55,058	34,169	89,227
Indian ..	86	94	180	4,650	1,112	5,762	39,419	5,488	44,907
Malaysian ..	28	127	155	1,325	2,493	3,818	9,306	10,436	19,742
Eurasian ..	2	3	5	72	12	84	715	430	1,145
European ..	..	..	..	785	1	786	3,473	2	3,475
Others ..	7	14	21	175	71	246	995	1,410	2,405
Total ..	365	988	1,353	14,596	9,955	24,551	108,966	51,935	160,901

CHAPTER NINETEEN

MATERNITY AND GYNÆCOLOGY

KANDANG KERBAU HOSPITAL

433. The Kandang Kerbau Hospital is the only Government Institution in the Colony which deals with the therapeutic aspect of maternity and gynæcology. This hospital became a Women's Hospital in 1924 when it had 34 beds. These proved insufficient and a block with 120 beds was built in 1934. The total births in that year was 2,575 but the demand for obstetric services grew so rapidly that further expansion soon became necessary. Another block was built to provide accommodation for the ante-natal wards, the labour wards and some lying-in beds; the total number of beds was 180 when the new block was opened in July 1940. The total number of births for that year was 6,184.

434. Until the outbreak of the Pacific war in December 1942 the Kandang Kerbau Hospital remained a free Maternity hospital. Paying maternity cases and gynæcological cases were treated at the General Hospital. In December 1942 the hospital was converted into an Emergency General Hospital with 500 beds, mainly to serve as a casualty hospital for civilian casualties. Throughout the Japanese occupation (February 1942—September 1945) and for nine months after the end of the war until June 1946, the Hospital was the Civil General Hospital. Since then it has been a specialised hospital for maternity and gynæcologic cases.

435. On 10th August, 1955 Lady Black, the wife of the Governor declared open the new extensions to this hospital comprising the following:—

- (1) New Ward Block with a septic unit of 12 beds, labour ward with 24 beds and lying-in ward with 80 beds, and with two operating theatres, a radiologic unit, a dispensary and an administration wing;
- (2) Out-patients Department with ante-natal, post-natal, gynæcologic and general out-patient clinics;
- (3) Laboratory Block with pathological bacteriological and clinical laboratories, and a library and museum;
- (4) Nurses' Hostel with accommodation for 78 staff-nurses and staff-midwives;
- (5) Students' Hostel providing accommodation for 8 housemen and 30 students and a lecture theatre;
- (6) Hospital Servants' Quarters for 96 attendants.

436. In December 1956 Professor A. M. Claye, F.R.C.O.G. and Mr. G. F. Gibberd, F.R.C.O.G., as representatives of the Royal College of Obstetricians and Gynæcologists, London, inspected the hospital in order to report on its suitability for recognition by the Royal College for postgraduate training. Recognition of the Hospital has been declined.

437. The Kandang Kerbau Hospital now has 316 beds (50 gynæcological and 216 maternity). In addition the hospital also provides ante-natal, post-natal and gynæcologic clinics plus a separate clinic for women and children dealing with common and general ailments.

438. The numbers of deliveries in this Hospital since 1915 are given in Table 100.

TABLE 100

DELIVERIES AT THE MATERNITY HOSPITAL, SINGAPORE

1915	...	...	...	174	} (Hospital sited at Victoria Street)
1916	...	...	...	195	
1917	...	...	...	206	
1918	...	...	...	221	
1919	...	...	...	232	
1920	...	...	...	342	
1921	...	...	...	496	
1922	...	...	...	466	
1923	...	...	...	797	
1924	...	...	...	688	} (moved to present site)
1925	...	...	...	588	
1926	...	...	...	753	
1927	...	...	...	1,019	
1928	...	...	...	1,304	
1929	...	...	...	1,606	
1930	...	...	...	1,882	
1931	...	...	...	1,955	
1932	...	...	...	2,146	
1933	...	...	...	2,306	
1934	...	...	...	2,575	
1935	...	...	...	3,548	
1936	...	...	...	4,707	
1937	...	...	...	5,214	
1938	...	...	...	5,551	
1939	...	...	...	6,034	
1940	...	...	...	6,184	
1941	...	...	...	6,426	
1942	...	...	...	1,913	} Japanese Occupation
1943	...	...	...	2,037	
1944	...	...	...	1,657	
1945	...	...	...	1,584	
1946	...	...	...	5,101	
1947	...	...	...	7,802	
1948	...	...	...	10,272	
1949	...	...	...	10,928	
1950	...	...	...	13,238	
1951	...	...	...	13,582	
1952	...	...	...	15,321	
1953	...	...	...	17,958	
1954	...	...	...	20,301	
1955	...	...	...	22,813	
1956	...	...	...	25,878	} (Includes 938 Domiciliary Deliveries done by the staff of the hospital)

Staff

439. The hospital is administered by the Medical Superintendent (Dr. A. Arulanandam, L.M.S. Singapore). There are two units in the hospital. The Government unit has 1 Senior Consultant (Dr. A. C. Sinha, L.M.S., M.R.C.O.G., M.M.S.A.), 1 Consultant, 1 Senior Registrar, 9 Medical Officers and 4 Housemen. The University unit has a Professor (Dr. B. H. Sheares, M.D., M.S., F.R.C.O.G.), 1 Senior Lecturer, 1 Lecturer, 1 Senior Registrar, 9 Medical Officers and 4 Housemen. The staff of the Anæsthetic unit under Dr. E. G. Hudson, F.F.A.R.C.S., Senior Anæsthetist, administered anæsthetics at the hospital on a roster system. The nursing staff of the hospital consisted of a Matron (Miss M. Ackers), an Assistant Matron, 28 Nursing Sisters 75 Nurses, and 73 Midwives (excluding 105 Pupil Midwives). A Pharmacist is in charge of the Dispensary, and a Physiotherapist is available.

Domiciliary Delivery Service

440. The Domiciliary Delivery Service was started in September 1955 and has become firmly established during 1956 as a teaching unit attached to Kandang Kerbau Hospital. Trained Nurse Students and Midwifery pupils are given experience in domiciliary midwifery, each student spending 8 weeks in extern practice. Medical students from the University of Malaya are rostered in turn to gain this experience as part of their training in obstetrics. In all cases students are accompanied by Staff Midwives who have considerable experience in the practice of midwifery in homes. The service is supervised by two Staff Nurse-Midwives and one Sister-in-Charge.

441. The training given to students comprised ante-natal care of patients in their homes, attendance at delivery and follow up during the lying in period. Medical students did an average of three attended deliveries and Nurses and midwives in training did a minimum of 10 cases each. During 1956 76 medical students, 49 nurses and 19 midwives had training in domiciliary midwifery.

Domiciliary Aftercare Service

442. The aftercare service continues to care for a large percentage of the hospital deliveries. 7,282 women were attended in their own homes after having been delivered in hospital and kept under observation for 24-36 hours. Staff midwives in this service paid 48,270 visits to patients giving care to them in the lying in period.

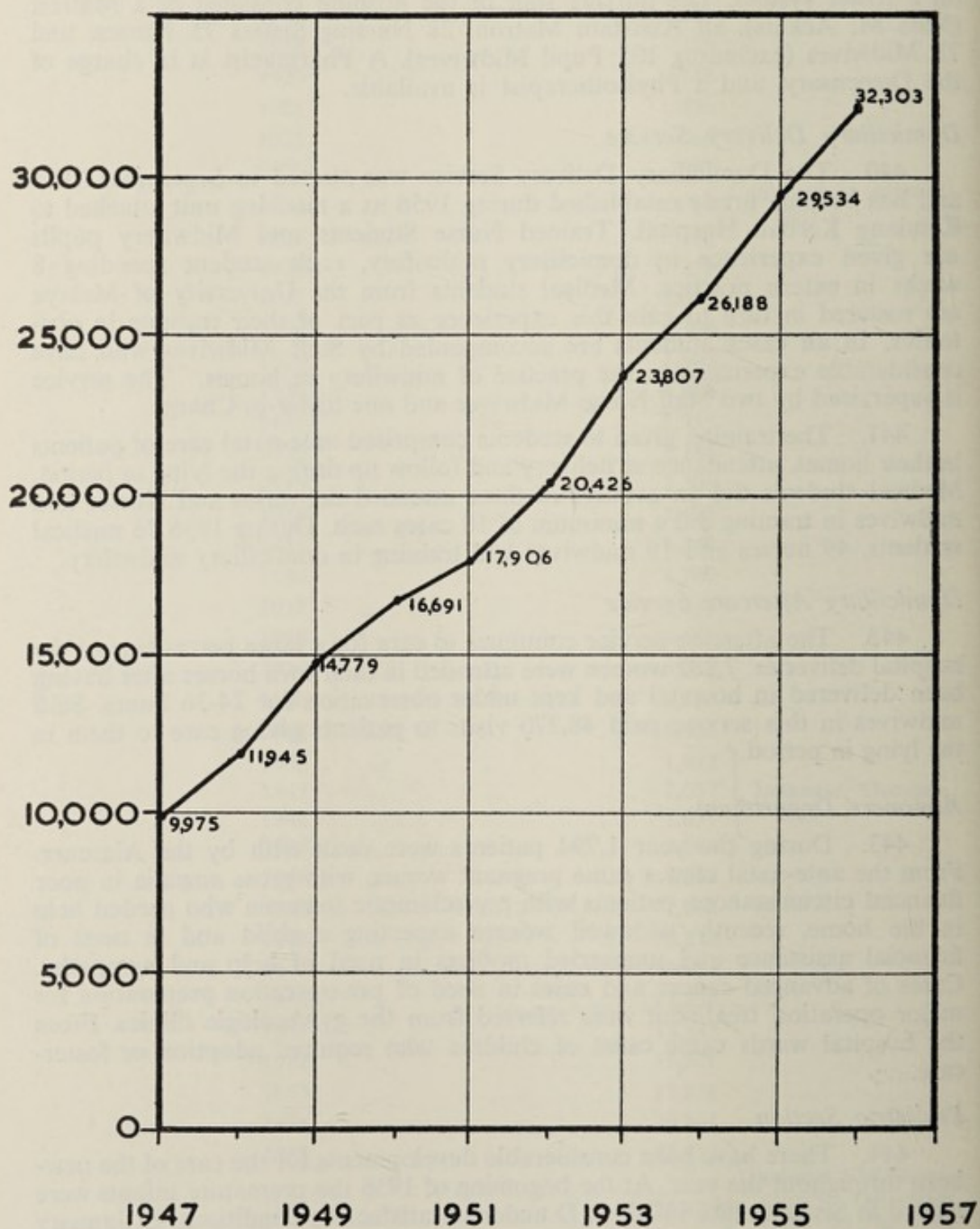
Almoners' Department

443. During the year 1,794 patients were dealt with by the Almoner. From the ante-natal clinics came pregnant women with gross anæmia in poor financial circumstances, patients with pre-eclamptic toxæmia who needed help in the home, recently widowed women expecting a child and in need of financial assistance and unmarried mothers in need of help and sympathy. Cases of advanced cancer and cases in need of pre-operation preparation for major operation treatment were referred from the gynæcologic clinics. From the hospital wards came cases of children who required adoption or foster-care.

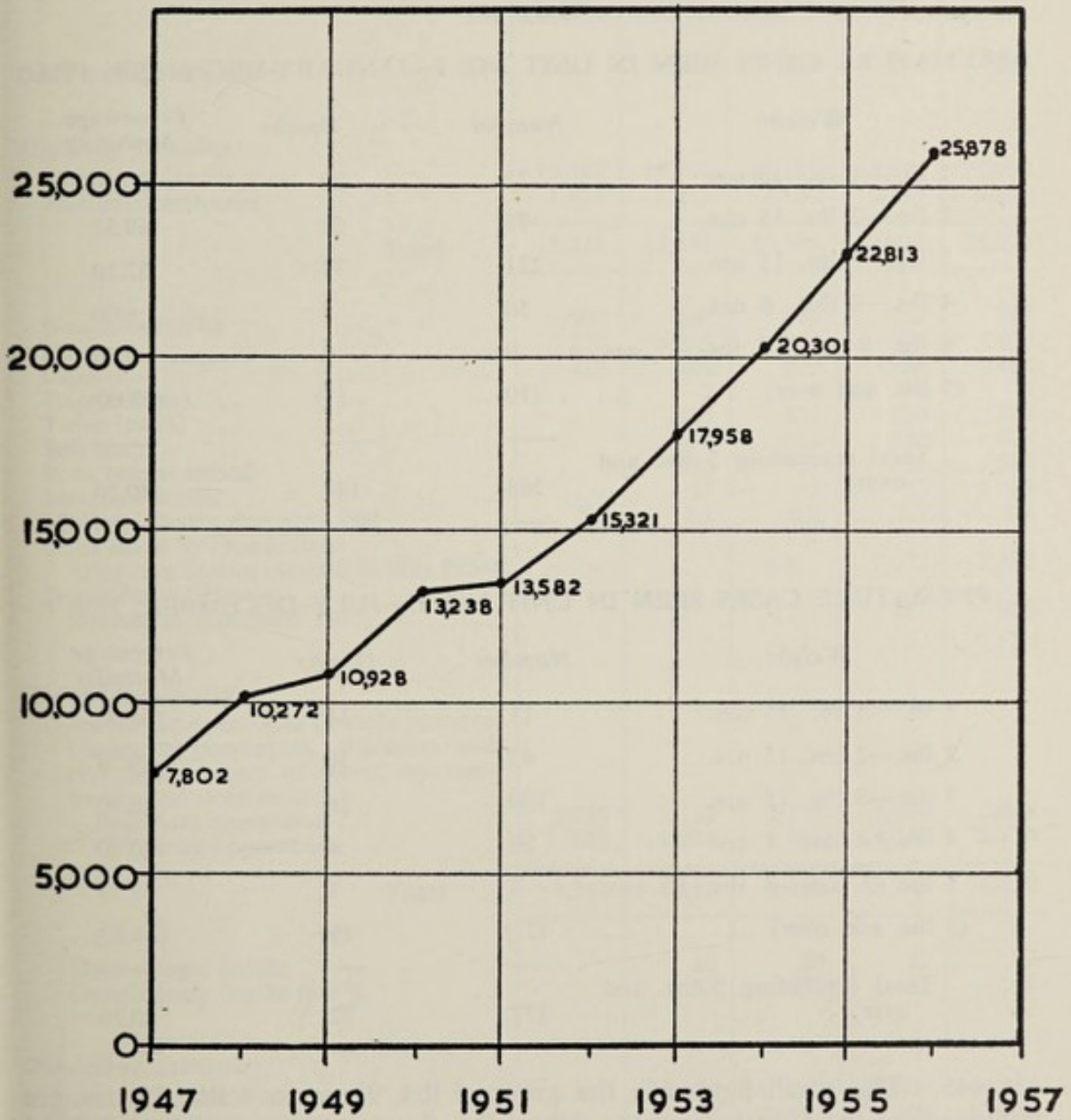
Pædiatric Section

444. There have been considerable developments for the care of the new-born throughout the year. At the beginning of 1956 the premature infants were nursed in Sister's office in Block D under unsatisfactory conditions. In January the new born nursery on the second floor of the new building was adapted and

KANDANG KERBAU HOSPITAL
ADMISSIONS
(MATERNITY & GYNAECOLOGIC CASES)



KANDANG KERBAU HOSPITAL
DELIVERIES



opened for premature infants and in July the nursery on the third floor was opened. There is accommodation for 36 babies, mainly prematures under 4½ lbs in weight, but severely traumatised full term babies were also admitted for observation from the labour ward. The improved condition for isolation, aseptic technique, preparation of the feeds and nursing care resulted in fewer infections and improved survival rate. There was one mild epidemic of gastro-enteritis requiring the closure of one of the wards for a few days. Statistics in regard to Premature Unit I compiled from January to December 1956, and in Premature Unit II from July to December 1956 are given in Table 101.

TABLE 101

PREMATURE CASES SEEN IN UNIT NO. I—JANUARY-DECEMBER, 1956

<i>Weight</i>	<i>Number</i>	<i>Deaths</i>	<i>Percentage Mortality</i>
1 lb.—1 lb. 15 ozs. ...	22	22	100.00
2 lbs.—2 lbs. 15 ozs. ...	75	52	69.33
3 lbs.—3 lbs. 15 ozs. ...	221	71	32.10
4 lbs.—4 lbs. 8 ozs. ...	50	3	6.00
4 lbs. 9 ozs.—4 lbs. 15 ozs. ...	0	0	0.00
(5 lbs. and over) ...	(10)	(1)	(10.00)
Total (excluding 5 lbs. and over) ...	368	148	40.20

PREMATURE CASES SEEN IN UNIT NO. II—JULY-DECEMBER, 1956

<i>Weight</i>	<i>Number</i>	<i>Deaths</i>	<i>Percentage Mortality</i>
1 lb.—1 lb. 15 ozs. ...	11	11	100.00
2 lbs.—2 lbs. 15 ozs. ...	43	30	69.76
3 lbs.—3 lbs. 15 ozs. ...	100	26	26.00
4 lbs.—4 lbs. 8 ozs. ...	20	4	20.00
4 lbs. 9 ozs.—4 lbs. 15 ozs. ...	3	1	33.33
(5 lbs. and over) ...	(21)	(6)	(28.60)
Total (excluding 5 lbs. and over) ...	177	72	40.70

445. The small figures in the group 4 lbs. 9 ozs to 4 lbs. 15 ozs. are explained by the fact that infants over 4 lbs. 8 ozs. are not usually admitted to the Premature Unit unless they require special care and this applies to 5 lbs. and over. The overall mortality of approximately 40 per cent is high. There is every room for improvement to bring the mortality down to below 20 per cent which would be reasonable.

446. A summary of the work of the Hospital is given in Table 102 for the years 1952-1956.

TABLE 102

SUMMARY OF WORK DONE AT KANDANG KERBAU HOSPITAL, 1952-56

	1952	1953	1954	1955	1956
<i>Total Admissions:</i>					
Maternity Cases	17,380	20,450	22,680	25,522	27,951
Gynæcologic Cases	3,046	3,357	3,508	4,012	4,252
Total ..	20,426	23,807	26,188	29,534	32,203
Daily average of patients	n.a.	261	264	276	296
<i>Maternity Statistics:</i>					
Normal deliveries	13,467	15,747	17,181	13,614	15,058
Abnormal deliveries	1,854	2,211	3,120	9,199	9,882
Total ..	15,321	17,958	20,301	22,813	25,878*
Breach deliveries	592	650	671	731	916
Forceps "	220	219	312	396	470
Cæsarian	228	260	272	368	488
Triplets (sets) .. ..	..	2	6	6	3
Twins (pairs) .. ..	..	195	221	256	285
Still births .. ..	..	498	531	550	478
Born before arrival .. ..	..	265	337	339	307
Maternal deaths .. ..	..	38	45	53	39
Maternal deaths rate per 1,000 ..	3.8	2.1	2.2	2.3	1.4
Cases cared by Domiciliary After-care Service (Started in May 1954)	..	..	n.a.	7,572	7,282
Domiciliary deliveries (Started in September 1955) ..	..	..	..	107	938
<i>Gynæcologic Statistics:</i>					
Gynæcologic operations (mainly hysterectomies, colporrhapies, dilatation and curettage, cautery of cervix, myomec- tomies and sterilization)—					
In-patient operations	2,739	3,138	3,273	3,599	3,944
Out-patient operations	628	1,074	1,161	1,348	2,774
Total ..	3,367	4,212	4,434	4,947	6,718
Gynæcologic deaths .. ..	..	16	20	22	12
Gynæcologic deaths rate % .. ..	..	.47	.57	.55	.28
<i>Out-patient Statistics:</i>					
Ante-natal attendances	n.a.	35,601	41,043	45,609	63,256
Gynæcologic attendances	n.a.	27,868	29,403	31,220	37,074
Total ..	39,737	63,469	70,446	76,829	100,330
Post-natal Mothers	8,545	8,092	9,598	11,332	17,115
Post-natal Babies	7,734	7,343	7,832	8,450	10,484

* Includes 938 Home deliveries.

TABLE 102—continued

	1952	1953	1954	1955	1956
<i>Clinical Laboratory:</i>					
Routine examinations	39,481	45,378	38,862	41,605	47,280
<i>Radiologic Unit:</i> (Started in 1953)					
Patients for Radiologic examinations	1,582	2,858	3,371	3,930
Radiologic examinations	2,574	2,983	3,563	4,266
<i>Anæsthetic Unit:</i>					
Anæsthetics administered—					
Major cases	1,414
Minor cases	5,138
Total	6,552
No. of general anæsthetics	6,261
No. of spinal anæsthetics	244
No. of local anæsthetics	47
<i>Physiotherapy Section:</i> (Started in November 1955)					
Patients for physiotherapy	2,131
Physiotherapy attendances	9,724

447. This hospital is the teaching hospital for obstetrics and gynaecology for medical students of the University of Malaya. 103 medical students attended the hospital during the year. The hospital is also the training school for midwives. 42 nurses and 21 midwives received their training.

DOMICILIARY MIDWIFERY SERVICE



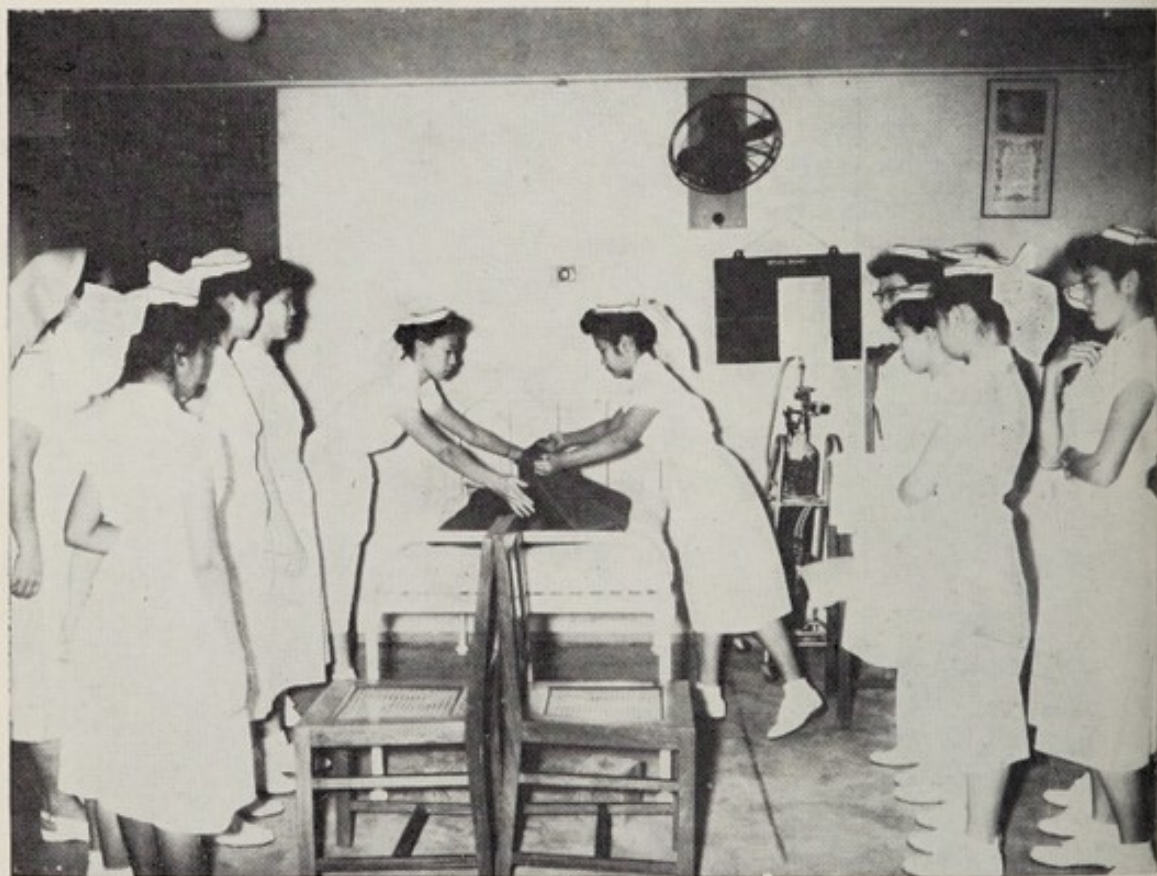
Domiciliary Midwifery Team setting out on a case



Domiciliary Midwife prepares to take the case in the home



Demonstration to Pupil Midwives at Kandang Kerbau Hospital



Bed-making Demonstration to Assistant Nurses

CHAPTER TWENTY

TRAFALGAR HOME

448. The Trafalgar Home is the institution in which infectious cases of Leprosy are treated. It is situated some 8 miles from Singapore on the side of the east bank of the Ponggol estuary on good farming land which is farmed by the patients and produces all the vegetables and pork for their own requirements with some excess.

449. The Home has undergone considerable expansion since the war and has developed around the old isolation settlement, the walls of which are still to be seen in the centre. It has been developed on the open village principle and now houses about 950 patients.

Staff

450. The staff of the Trafalgar Home consisted of 1 Medical Superintendent (part-time), 2 Resident Medical Officers, 2 Religious Nursing Sisters of the Franciscan Mission of the Divine Motherhood, 4 Hospital Assistants (and 12 Nursing Aids and 25 Dressers who are in-patients of the Home). Sister Mary Phillipa, who is a Franciscan Sister, is in charge of the Rotary School, Dr. R. J. Grove-White, M.B., B.CH. M.D. (Dublin) M.R.C.P. (Edin.) acted as Medical Superintendent during the year.

451. With effect from January 1956 a new scheme for remuneration for inmate workers was instituted. Under this scheme all the workers in the hospital have been divided into 3 grades and the salary rates fixed at those for hospital servants Grade 1, 2 and 3 in Government Hospitals. This salary is paid in full to the patient, but a charge of \$30 a month is deducted as the cost of food.

TABLE 103

PATIENT STATISTICS OF TRAFALGAR HOME, 1956

	<i>Males</i>	<i>Females</i>	<i>Total</i>
Total Patients remaining on 31-12-55 ...	629	260	889
Admissions from 1-1-56 to 31-12-56 ...	188	45	233
Discharges from 1-1-56 to 31-12-56 ...	96	44	140
Abscensions from 1-1-56 to 31-12-56 ...	29	2	31
Transfers to other Hospitals 1-1-56 to 31-12-56 ...	29	13	42
Transfers from other Hospitals 1-1-56 to 31-12-56 ...	26	13	39
Deaths from 1-1-56 to 31-12-56 ...	10	—	10
Patients remaining on 31-12-56 ...	679	259	938

Total patients remaining on 31st December, 1956—made up as follows:—

<i>Males</i>		<i>Females</i>		<i>Total</i>
<i>Adults</i>	<i>Children</i>	<i>Adults</i>	<i>Children</i>	
603	76	223	36	938

TABLE 103—*continued*

ADMISSIONS DURING 1956—CLASSIFIED BY ETHNIC GROUP

	CHINESE		INDIANS		MALAYSIANS		TOTAL	
	Males	Females	Males	Females	Males	Females	Males	Females
Adults	144	37	17	..	5	2	166	39=205
Children	18	6	3	..	1	..	22	6= 28
							188	45=233

Admissions during the year 1956 were:—

	<i>Males</i>	<i>Females</i>	<i>Total</i>
New positive cases	132	30	162
Negative cases admitted for treatment of ulcers, reaction and orthopaedic ...	40	11	51
Absconded cases re-admitted	13	4	17
Relapse of former discharged cases ...	2	—	2*
Conditional discharge—unsatisfactory surveillance. Re-admission	1	—	1
	<u>188</u>	<u>45</u>	<u>233</u>

* Both had defaulted treatment as out-patients.

DISCHARGES DURING THE YEAR 1956

	<i>Males</i>		<i>Females</i>		<i>Total</i>
	<i>Adults</i>	<i>Children</i>	<i>Adults</i>	<i>Children</i>	
	88	8	36	8	140

CLASSIFICATION OF DISCHARGES

	<i>Males</i>	<i>Females</i>	<i>Total</i>
Formerly positive cases discharged, 1956 ...	38	23	61
Formerly positive cases discharged, 1955 and held over for various reasons	8	1	9
Conditional discharge under surveillance ...	26	7	33
Negative cases on admission	24	13	37
	<u>96</u>	<u>44</u>	<u>140</u>

ADMISSIONS, DISCHARGES, ETC. COMPARED WITH 1955

Admissions:

In 1956—New positive cases admitted 162.

In 1955—New positive cases admitted 174.

Discharges of formerly positive cases:

In 1956—61 cases left the Home, out of 82 cases discharged by Board.

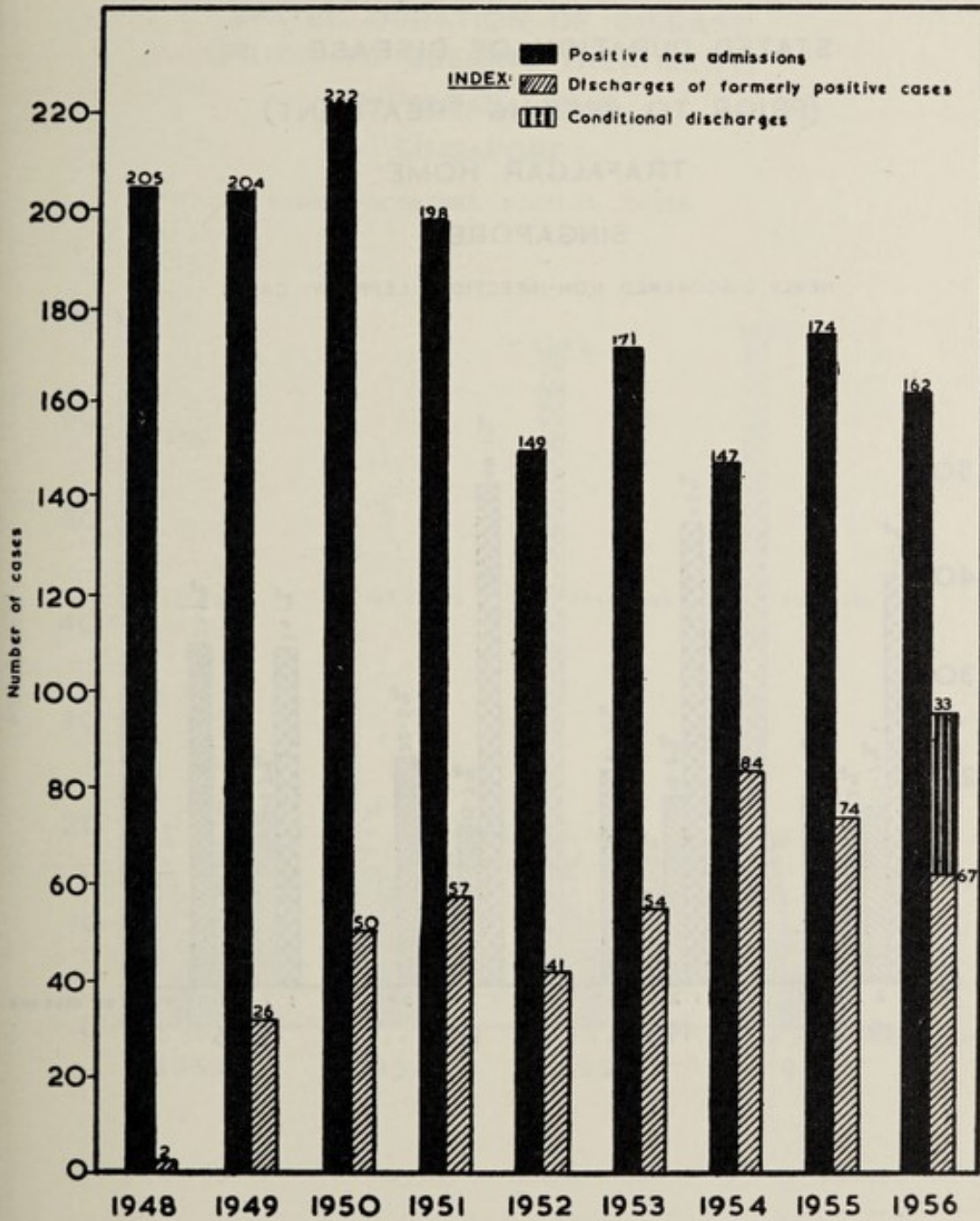
In 1955—74 cases left the Home, out of 94 cases discharged by Board.

Absconsions:

In 1956—31 cases absconded. Of these 13 cases returned.

In 1955—24 cases absconded. Of these 4 returned during 1956.

POSITIVE NEW ADMISSIONS AND DISCHARGES OF FORMERLY POSITIVE LEPROSY CASES TRAFALGAR HOME SINGAPORE



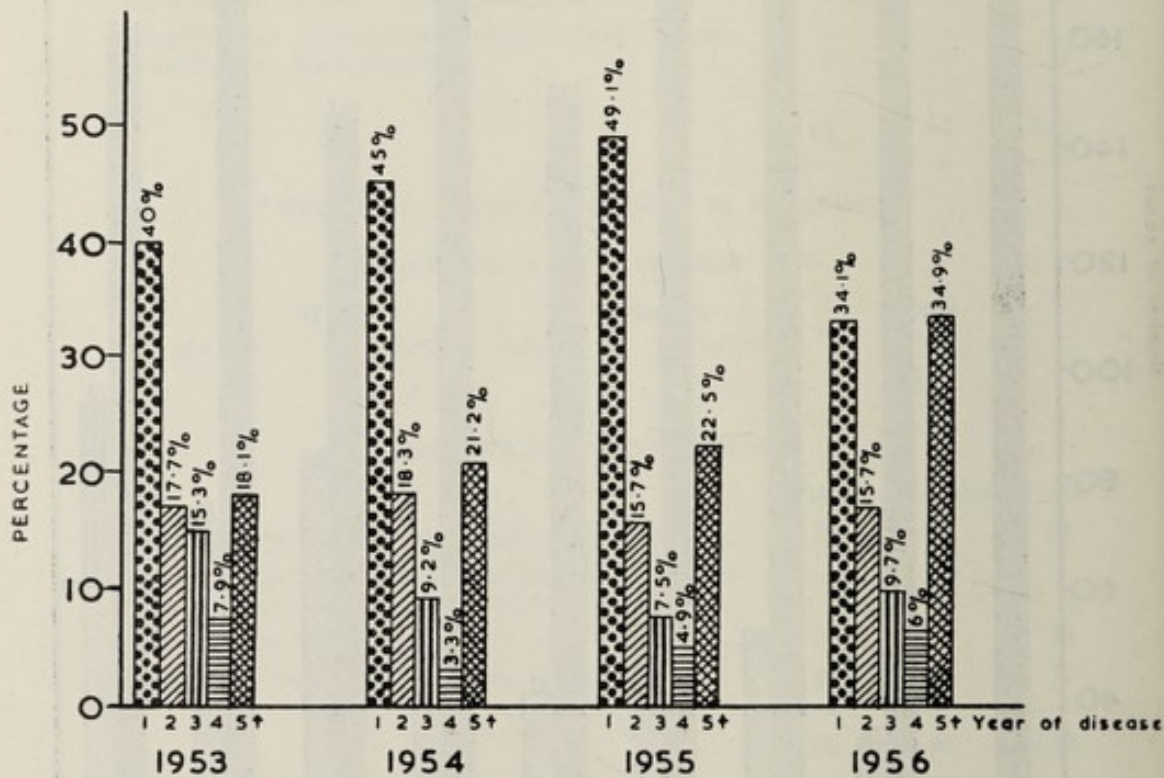
STATEMENT OF THE NUMBER OF NEWLY DISCOVERED NON-INFECTIOUS LEPROSY CASES IN SINGAPORE, 1953-1956

STATED DURATION OF DISEASE
(PRIOR TO SEEKING TREATMENT)

TRAFALGAR HOME

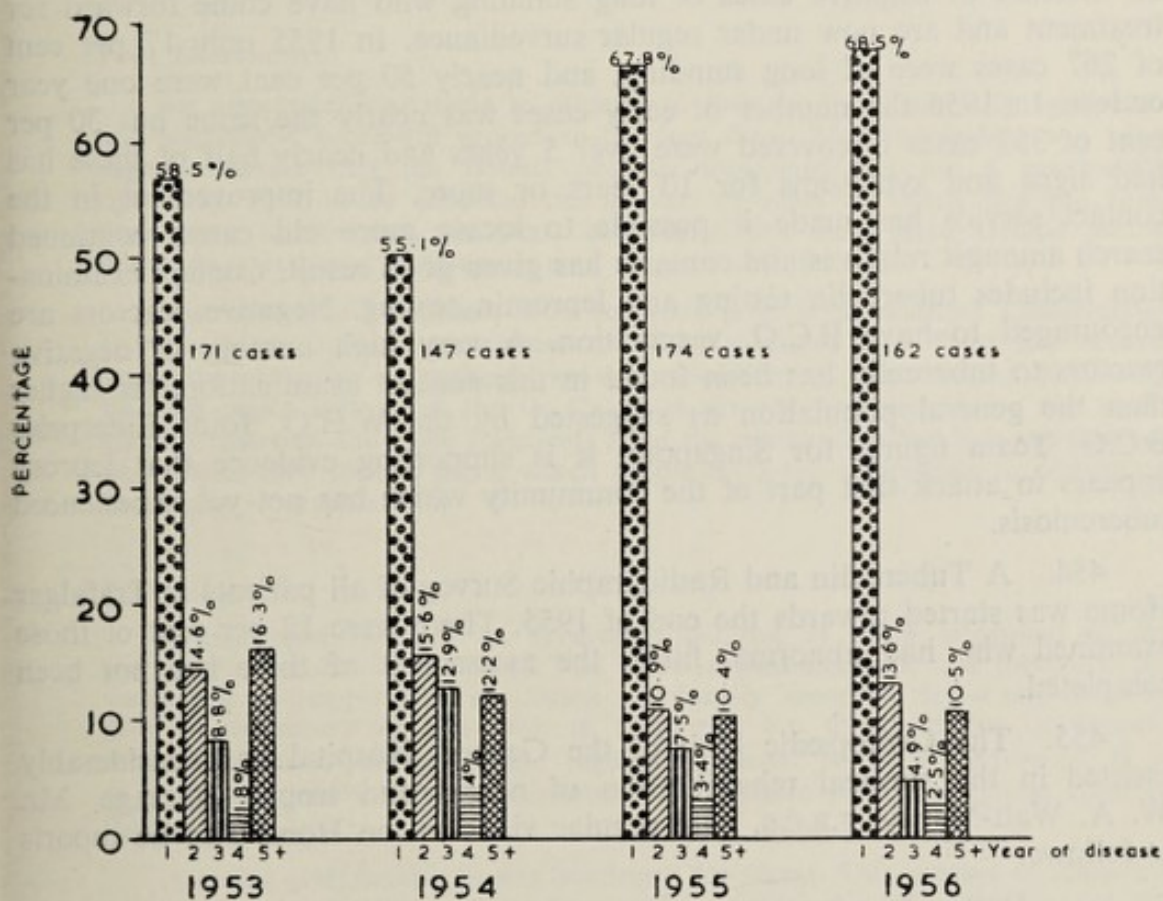
SINGAPORE

NEWLY DISCOVERED NON-INFECTIOUS LEPROSY CASES



STATED DURATION OF DISEASE
(PRIOR TO SEEKING TREATMENT)
TRAFALGAR HOME
SINGAPORE.

NEWLY DISCOVERED POSITIVE CASES



GENERAL REVIEW

452. During the year 233 patients were admitted as against 232 in 1955. Of these 162 were new positive cases, the balance were negative cases admitted for treatment of ulcers, reaction or orthopædic conditions and 17 were absconded patients who had returned.

453. The satisfactory trend towards earlier diagnosis has continued and of the 162 cases, nearly 70 per cent had come within the first year of noticing any signs and three-quarters of these had come within the first 6 months. The numbers that came in the second, third, fourth and later years of the disease continue to show a decrease, particularly those in the third and fourth years. This is encouraging as it suggests that concealment is becoming less common and that there is an increasing confidence in the service offered to the patients. There are still a fair number of long term cases who are as yet untouched by treatment, but the out-patient experience of non-infectious leprosy cases shows that during the year there has been an increase of negative cases of long standing who have come forward for treatment and are now under regular surveillance. In 1955 only 17 per cent of 267 cases were of long standing, and nearly 50 per cent were one year or less. In 1956 the number of early cases was nearly the same but 30 per cent of 352 cases discovered were over 5 years and nearly half of these has had signs and symptoms for 10 years or more. The improvement in the contact service has made it possible to locate more old cases; continued search amongst relatives and contacts has given good result. Contact examination includes tuberculin testing and lepromin testing. Negative reactors are encouraged to have B.C.G. vaccination. A very high number of negative reactors to tuberculin has been found in this contact examination, far higher than the general population as suggested by the W.H.O. Joint Enterprise B.C.G. Team figures for Singapore; it is supporting evidence that leprosy appears to attack that part of the community which has not yet experienced tuberculosis.

454. A Tuberculin and Radiographic Survey of all patients in Trafalgar Home was started towards the end of 1955. There were 12 per cent of those examined who had abnormal films; the assessment of these has not been completed.

455. The Orthopædic Unit of the General Hospital has considerably assisted in the surgical rehabilitation of neural and trophic damage. Mr. W. A. Watt-Maney, F.R.C.S. paid regular visits to the Home and he reports as follows:—

During the year orthopædic treatment has been directed to the correction of—

- (1) *Hand deformities*:—Contractures of Ulnar Median and Mixed Nerve paresis together with Wrist Drop.
- (2) *Foot Deformities*:—As a result of involvement of the Anterior Tibial or Peroneal Nerves giving rise to muscle imbalance with Varus or Valgus deflections and varying degrees of Foot Drop.
- (3) *Ulcers of Feet*:—Association with Neuro Trophic change and characterised by chronicity a new mode of treatment is being tried. Intra-arterial Hydergine 0.3 mg. bi-weekly for three weeks.
- (4) *Amputations*.

Hand Deformities

The Bunnell transplant of the Sublimis Tendon to the Dorsum of the affected finger through the lumbrical canal was used for the digital deformity of the ulnar nerve involvement. One important finding worthy of note regarding this procedure was the necessity of obtaining complete correction of the digital deformity by primary splinting. When the deformity was correctable passively, especially extension of the inter-phalangeal joint with the wrist dorsiflexed, the results of the proceedings were uniformly good giving over 80 per cent return of finger movement.

The primary correction of the deformity refers to the relatively early case. There were a number of cases when due to ligamentous and capsular contracture or fissuring of the volar flexion skin crease complete correction of the flexion deformity was not possible. In the cases following maximal correction by splintage, sublimis transposition was effected if it was considered a worthwhile procedure with regard to function.

Emphasis is again laid on gentle handling at operation and secondly the importance of physiotherapy following operation.

Foot Deformities

An assessment was made to attempt to find the most generally applicable and universally successful procedure for foot drop. The first finding was of a negative nature that the tibialis posticus transplant was not a worthwhile operation. It is to be admitted the number of cases in which this has been done have in the past five years been small but these have yielded results which have required revision in over 96 per cent of cases.

The operation at present used for foot drop is a modified Lambrinudie and Campbell bone check procedure. The Os Calcis and Talus are beaked under the navicular and cuboid also a subtaloid fusion is performed. Following this the upper surface of the Os Calcis is divided just anterior to the tendo achilles insertion and bone fragments from the subtaloid arthrodesis are inserted here where they form a block which supplements the arthrodesis in preventing foot drop recurrence.

Foot Ulcers

Intra-arterial injection of Hydergine 0.3 mg. is being attempted in the treatment of chronic foot ulcers. The ulcer is photographed; and thermocouple variations of temperature are being graphically recorded. It is too early to give an assessment of this form of treatment, but the technique of femoral arterial injection just below the inguinal ligament is easily performed. It is to be hoped other centres may institute investigation in this particular form of therapy.

A Heinz graft technique was developed for ulcers. This consists of removing a split skin graft with a dermatome from an area $1\frac{1}{2}$ times the size of the ulcer. This area is now incised following the shape of the ulcer and includes the whole skin. This free graft is now turned over and sutured over the granulating ulcer base leaving the 'deep' fatty areolar layer now exposed. After ten days a secondary Thiersh graft is applied to this transplanted graft.

Amputation

A number of amputations were performed. Arrangements are being made with a leading limb fitting centre in Canada to obtain substandard limbs. A greater number of patients are requesting amputations and more patients are agreeing more readily as the success of the modern prosthesis is appreciated.

TABLE 104

ANALYSIS OF SURGICAL PROCEDURES

<i>Tendon Transplantation</i>				
Hand	...	...	...	29
Foot	...	...	...	7
<i>Fusions</i>				
Wrist	...	...	...	5
Finger	...	...	...	1
Foot	...	...	...	7
Lambr.	...	...	...	5
Wedge Transectomy	...	...	...	1
<i>Ulcers</i>				
Excision	...	...	...	39
Skin Graft	...	...	...	21
Pedicle Graft				
1st St.	...	...	...	6
2nd St.	...	...	...	5
3rd St.	...	...	...	2
Hind's	...	...	...	2
<i>Amputation</i>				
Leg	...	...	...	16
Toe	...	...	...	2
<i>Miscellaneous</i>				
Biopsy	...	...	...	4
Osteomy	...	...	...	1
Sequestrect	...	...	...	2
Saucerisation	...	...	...	2
Manipulation	...	...	...	1
Hydergine	...	...	...	4

TREATMENT

456. During the year the standard treatment of leprosy consisted of Dapsone tablets administered orally. In a number of cases Isoniazid has been combined with Dapsone therapy but so far there has been no obvious difference in value of combined therapy over Dapsone alone. Sulphetrone tablets and Sulphetrone in aqueous solution (50 per cent) have been used in a few cases that appeared sensitive to Dapsone. Sulphetrone in aqueous solution (50 per cent) has been used to desensitise cases who had become sensitised to the Sulphone group of drugs. Oral Dapsone has proved satisfactory in the treatment of out-patients and has reduced the number of visits for cases under out-patient therapy to monthly and even three-monthly intervals. Leprea reaction is still the cause of a majority of cases of severe illness in the Home and a small number of patients who are particularly prone to this condition account for a large proportion of the invalidism. Stibophen and Anthiomaline are still the first line of treatment but Cortisone has been extensively used especially in cases of dimorphic pathology where it enables treatment to be carried through without risk of ulceration or nerve damage.

457. During the early part of the year an experiment was carried out with Colchiside from the Roussel Laboratories in Paris. This drug proved disappointing and was no improvement on those other methods of treatment which were already used in the Home and in fact seemed to be, if anything, inferior.

ALMONER'S DIVISION

458. The introduction of a system of payment for full-time workers was instituted at the beginning of the year. Each inmate-worker has to be interviewed, his circumstances assessed and arrangement for payment to dependent and for saving made by the Almoner.

459. Of the 114 cases discharged this year 94 have gone out either to return to their old occupations, to new work and in some cases to exist on Social Welfare Allowance until such time as they can obtain work. It is easier for a patient to hear of vacancies when he is outside and not isolated in the Home. It is still exceedingly difficult to obtain jobs for ex-patients and the continuous search for work is very demoralising to a patient who is anxious to work and who does not wish to be dependent on relations or on a Social Welfare Allowance.

460. During the past year 12 marriages took place between patients either by Chinese, Christian or Civil rites. Prior to the ceremony the couple are interviewed by the Almoner and the responsibilities of marriage between patients are discussed. The disease is likely to flare up during pregnancy and the care of the children born has to be considered. Arrangements have to be made for the care of children born of the marriage either by relations or a foster mother or a children's home.

461. The volume of work among out-patients continues to increase steadily. The Almoner has been able to obtain social data of every out-patient. 1,900 patients are receiving Public Assistance and/or Sickness Allowance from the Social Welfare Department.

HEALTH VISITOR'S DIVISION

462. The T.T.S.H. Skin Clinic (Leprosy Out-patients Section) has been held at the Tan Tock Seng's Hospital on five afternoons a week from 1.00 p.m. to 4.00 p.m. Attendance has on the whole been very good and regular and the longer periods between visits due to administration of oral Dapsone have kept the numbers at each session within reasonable limits.

463. Tuberculin and Lepromin testing of all cases and contacts is carried out as routine. B.C.G. vaccination has been carried out on Mantoux negative contacts.

464. During the year 517 new cases were discovered. Of these 352 were regarded as non-infectious and continued as out-patients, the remainder being admitted to the Trafalgar Home for isolation and treatment.

465. Besides the normal duties of contact examination and home visiting, the Health Sister and her staff co-operate with the Almoner and give her information on domestic problems of patients.

OCCUPATIONAL THERAPY DIVISION

466. Steady progress in the work of this division was maintained during the year. The work of this Division is carried out in the wards, infirmary blocks and in the patients' own living quarters. The number of patients engaged in occupational Therapy at any one time averaged 50. The range of crafts in use is limited to those where equipment and materials are light in weight, such as basket making, weaving, rug making, sewing. All completed articles are sterilised before being offered for sale and the choice of crafts employed is restricted to those which will not spoil in the process.

467. At the end of each month the patients are paid for their work according to their ability and the number of completed articles sold, to which is added a bonus in proportion to their own earnings. In this way the amount paid out each month totals about \$600.00

TABLE 105

ARTICLES MADE AT TRAFALGAR HOME

<i>Basket Work</i>			
Shopping baskets, dhoby baskets, tiffin carriers, picnic baskets, etc.			2,446
Supplied to Public Works Department:			
Waste Paper baskets			1,500
Minute Paper trays			1,000
<i>Weaving</i>			
Sets Luncheon Mats, Scarves, etc.			110
<i>Rug Making</i>			
Hooked Wool Rugs			39
<i>Sewing and Embroidery</i>			
Table cloths, Tray cloths, sets Luncheon mats, pairs Quest towels, etc.			547
<i>Candlewick</i>			
Bathmats, Chair seats, etc.			24
Total sum paid to Hospital Board Revenue ...			\$12,500.75

ROTARY SCHOOL

468. The School Year began on January 3rd this year. As the children are forced to stay in the Camp all the year round the terms were arranged a little differently from other schools, having four terms and shorter holidays in between. At the opening of the school year there were 66 boys and 47 girls and during the year 19 boys and 4 girls have been admitted. Four girls are now working in the Camp, three as Nurses and one as an Ayah. The fact that more children have been admitted to the Home this year does not mean that there is a greater incidence of the disease among children, but that parents are bringing their children to the Home in the early stages. The problems of age-range, and the varying levels of education are still with us and are likely to be the ones we shall always have to face, as well, of course, as the shortage of trained staff. This year we have had a Primary Department (Primary I to Primary VI) and two classes of the Secondary Form II and Form IV. One girl and four boys sat for the qualifying test for the Cambridge Overseas Certificates. Those who pass will be taking the Senior Cambridge Examination in 1957. The Rotary School has now been recognised as a Centre for School Certificate; this means that any boy or girl contracting the disease in his final year will not now lose his chance of sitting his examination as his name can be transferred from one Centre to the other.

469. There is a variety of games in the School including Basket Ball, Badminton, Football, Table-Tennis and Volley-ball. The Annual Sports day was held on 21st July, 1956 when Lady Black presented the prizes.

470. In needlework the older girls have learnt how to smock and have made little frocks for their baby sisters and there has also been a very generous spirit in the "make-do" class in which we have been making dresses,

skirts, etc. from pieces of material sent in to us. The girls have shown great interest in doll-dressing and the boys have shown great interest in basket work.

471. There have been a number of school outings including a visit to the historical exhibition held in Victoria Memorial Hall, to the Aquarium, and a picnic at Changi.

472. The standard of education in the School is improving and the children are working very well. It is gradually acquiring a real school spirit.

SOCIAL ACTIVITIES

473. During 1956 the Various groups and charitable organisations which have assisted the Home in the past continued their good offices and the administration is indebted to the Singapore Leprosy Relief Association, Franciscan Sisters, the Divine Motherhood Independent Mission, the R.A.F., Seletar and other welfare groups who have provided film shows, entertainment and celebrations, Christmas parties, etc. for patients in the Home. Further, the Singapore Leprosy Relief Association has interested itself more and more with the problems of out-patient cases of leprosy and the rehabilitation of discharged cases. This rehabilitation has very special problems due to prejudice and more especially in Singapore due to the shortage of land for settlement of small holders as this is one of the most readily taught crafts. The traditional Christmas parties were a great success for both adults and children and the Singapore Leprosy Relief Association is to be congratulated on its interest in the individual needs of the patients.

SCOUTING AND GUIDING

474. Scouts and Guides continued their steady progress throughout the year and while they lacked any great highlights, such as the visit of the Chief Scout in 1954, the Scout troop and the Guide company have done well and contributed an invaluable part to the lives of the young people in the Home. The Home is much indebted to Miss Foreman who has taken over the Guides and instilled a new enthusiasm in to the company.

LEPROSY BOARD

475. The constitution of the Leprosy Board remained unchanged throughout the year. The thanks of the administration are due to Dr. Loh Poon Lip and Dr. V. M. S. Thevathasan for their assistance in their services on the Board which met 6 times during the year to consider cases brought before it for discharge from Trafalgar Home.

DEVELOPMENT PROGRAMME

476. During 1956 new quarters were completed for Resident staff. These consisted of one Medical Officers' quarters, a one-bedroom bungalow for Matron and two single-bedroom semi-detached houses for Nursing Sisters. They have been built on the hillside near to the Woodbridge Hospital and away from the main part of the Home. A Dental Clinic for the use of the Visiting Dental Surgeon was also completed.

CHAPTER TWENTY-ONE

PSYCHOLOGICAL MEDICINE

WOODBIDGE HOSPITAL

477. The progress and development of psychological medicine that was reported in previous years has been continued during 1956. The policy of liberalising the admission and discharge of patients and of providing them a wider measure of freedom while in hospital has been maintained. Bars were removed from some wards and gates from some others to ensure those patients who are fit to enjoy maximal freedom within the hospital. The ward with cells used for isolation of patients has been re-converted into canteens for patients. Immense emphasis has been placed on occupational, recreational and diversional activities.

Staff

478. The staff of the Hospital consisted of 1 Medical Superintendent, 1 Deputy Medical Superintendent, 1 Assistant Medical Superintendent, 1 Psychologist, 6 Medical Officers, 1 Matron, 5 Nursing Sisters, 14 Nurses (including 9 student nurses) 1 Chief Male Nurse, 7 Male Nurses and 8 Hospital Assistants. Dr. J. Browne, M.B., B.CH. (Belfast) M.D (Belfast) was the Medical Superintendent during the year.

PSYCHIATRIC OUT-PATIENT SERVICE

479. The Psychiatric Clinic which was started at the General Hospital in 1953 formed the major out-patient clinic outside Woodbridge Hospital. During the latter part of the year an Out-patient Psychiatric Clinic was started at the Government Outdoor Dispensary at Paya Lebar. A Child Guidance Clinic has been planned for the Institute of Health which is expected to be opened in 1957.

480. Psychiatric out-patient work was done in the two Prisons and in seven of the Homes run by the Social Welfare Department. This work was done among juvenile delinquents, orphans and misplaced children in need of care and protection, young prostitutes under rehabilitation, elderly men and women and mentally defective children. All these groups have psychiatric problems peculiar to themselves which require careful handling if they are to remain mentally well and sound. The work done among these selected groups is one of the projects which aim at providing preventive psychiatric services in the full belief that it can open the path to better mental health in the community and reduce the number of individuals that become institutional charges, criminals, social misfits and economically unproductive individuals.

TABLE 106

OUT-PATIENT STATISTICS OF PSYCHIATRIC OUT-PATIENT DEPARTMENT,
GENERAL HOSPITAL, AND PSYCHIATRIC OUT-PATIENT CLINIC
PAYA LEBAR

TOTAL NUMBER OF PATIENTS EXAMINED AND TREATED IN 1956

Sex	Psychiatric Out-Patient Dept. General Hospital Cases	Psychiatric Out-Patient Clinic, Paya Lebar Cases	Total	Percentage of Total
Male ...	584	22	606	59.90
Female ...	363	58	421	40.10
	—	—	—	—
Total ...	947	80	1,027	100.00
	—	—	—	—

DISTRIBUTION BY RACE

Chinese ...	691	57	748	72.83
Indian ...	168	5	173	16.85
Malay ...	48	8	56	5.45
Eurasian ...	29	10	39	3.80
European ...	8	—	8	0.78
Other Asian ...	3	—	3	0.29
	—	—	—	—
Total ...	947	80	1,027	100.00
	—	—	—	—

DISTRIBUTION BY AGE GROUP

0— 10 years ...	35	—	35	3.40
11— 20 years ...	170	12	182	17.72
21— 30 years ...	239	21	260	25.33
31— 40 years ...	213	17	230	22.40
41— 50 years ...	181	18	199	19.38
51— 60 years ...	79	10	89	8.66
61— 70 years ...	22	2	24	2.34
71— 80 years ...	5	—	5	0.48
81— 90 years ...	3	—	3	0.29
91—100 years ...	—	—	—	—
	—	—	—	—
Total ...	947	80	1,027	100.00
	—	—	—	—

TABLE 106—continued

DISTRIBUTION BY DIAGNOSIS

<i>Diagnosis</i>	<i>Psychiatric Out-Patient Dept. General Hospital</i>	<i>Psychiatric Out-Patient Clinic, Paya Lebar</i>	<i>Total</i>	<i>Percentage of Total</i>
Addictions	5	—	5	0.49
Alcoholism	8	1	9	0.88
Anxiety States	197	15	212	20.65
Behaviour Disorders	11	—	11	1.07
Cerebral Tumours	1	—	1	0.09
Epilepsy	22	1	23	2.24
G.P.I.	15	—	15	1.47
Hypochondriasis	3	—	3	0.28
Hysteria	27	3	30	2.90
Involutional Melancholis	2	—	2	0.19
Manic Depressive Reactions	270	28	298	29.02
Mental Defective Idiots	18	1	19	1.85
Mental Defective Imbeciles	16	2	18	1.76
Mental Defective Feeble-minded	37	—	37	3.70
N.A.D.	30	1	31	2.99
Obsessive-Compulsive Reactions	3	—	3	0.28
Senile Dementia	24	—	24	2.33
Observation N.Y.D.	28	3	31	2.99
Organic Reactions	6	—	6	0.58
Other Physical Diseases	27	—	27	2.60
Psychopathic Personality	15	—	15	1.47
Psychoneurotic Reactions	5	—	5	0.49
Paranoid States	17	1	18	1.76
Schizophrenic Reactions	153	24	177	17.25
Toxic Confusional States	7	—	7	0.67
Total	947	80	1,027	100.00

DISTRIBUTION BY SOURCES OF REFERRAL

PATIENTS REFERRED BY

Almoners	25	—	25	2.43
Business Houses	11	—	11	1.06
City Council	7	—	7	0.67
Children's Aid Society	4	—	4	0.36
Female Out-patient Department	127	1	128	12.50
General Practitioners	35	2	37	3.70
H.M. Services	7	—	7	0.67
Male Out-patient Department	191	4	195	18.99
Medical Officers i/c Officials	29	—	29	2.82
Old cases under Out-patient Treatment	352	65	417	40.60
Other Specialists	18	—	18	1.76
Other Hospitals	26	7	33	3.18
Prisons and Courts	14	—	14	1.34
Social Welfare Department	9	—	9	0.87
School Clinics	9	1	10	0.97
Wards of the General Hospital	83	—	83	8.08
Total	947	80	1,027	100.00

TABLE 106—continued

	<i>Psychiatric Out-Patient Dept. General Hospital</i>	<i>Psychiatric Out-Patient Clinic, Paya Lebar</i>	<i>Total</i>	<i>Percentage of Total</i>
DISTRIBUTION BY DISPOSALS				
Admitted to Woodbridge Hospital	330	13	343	33.40
Advice to Medical Officers on Treatment ...	67	2	69	6.72
No action required ...	13	—	13	1.27
Out-patient Therapy ...	411	55	466	45.37
Observation as Out-patients ...	52	4	56	5.46
Referred to Almoner ...	29	2	31	3.01
Referred to Social Welfare De- partment ...	5	1	6	0.58
Referred to other Specialists ...	40	3	43	4.19
Total ...	947	80	1,027	100.00

IN-PATIENTS

481. Table 107 shows that there has been an increase in the number of patients this year.

TABLE 107

ADMISSIONS AND DISCHARGES FROM WOODBRIDGE HOSPITAL, 1952-56

	1952	1953	1954	1955	1956
Male patients admitted ...	675	758	808	876	1,042
Male patients discharged ...	424	850*	647	821	896
Female patients admitted ...	302	381	453	557	690
Female patients discharged ...	152	206	404	447	636

* Special discharge of 400 patients because of a strike by hospital attendants.

482. Comparison of admissions and discharges over the last five years shows a progressive increase in both. The rate of discharge, however, is now much higher as many cases come to the Hospital or are picked up at Psychiatric Clinics in early stages of mental illness when the prognosis is good. The increase in admissions is also due to the natural increase in the population and to the breaking down of the traditional prejudice against hospitalisation in a "mental" hospital.

483. Greater freedom has been permitted to patients and where possible patients are permitted to wear their own clothing.

484. Male and female wards are now classified into the following three categories:—

- (i) wards which are never closed;
- (ii) wards which are closed at night;
- (iii) wards which have to be always closed.

485. Details of in-patients statistics are given in Tables 108-111.

TABLE 108

IN-PATIENT STATISTICS OF PATIENTS RECEIVING SPECIAL TREATMENTS OR ATTENTION

	<i>Male</i>	<i>Female</i>	<i>Total</i>
Number of patients receiving E.C.T.	880	1,428	2,308
Number of E.C.T. Treatments given	6,774	11,077	17,851
Number of G.P.I. Patients in hospital on 31-12-56 ...	130	34	164
Number of G.P.I. admitted from 1-1-56 to 31-12-56 ...	25	11	36
Number of patients suffering from Syphilis admitted from 1-1-56 to 31-12-56	51	15	66
Number of Neurosyphilitic Courses given from 1-1-56 to 31-12-56	254	54	308
Number of anti-Syphilitic Courses given from 1-1-56 to 31-12-56	180	62	242
Number of patients suffering from Syphilis in Hospital on 31-12-56	62	39	101
Number of Epileptics in Hospital on 31-12-56	35	22	57
Number of patients discharged after E.C.T.	625	538	1,163
Number of patients suffering from G.P.I. discharged from 1-1-56 to 31-12-56	36	2	38
Number of patients suffering from Syphilis discharged from 1-1-56 to 31-12-56	21	8	29
Number of patients suffering from Epilepsy discharged from 1-1-56 to 31-12-56	7	3	10
Number of Retarded patients (M.D.)	125	83	208
Number of patients with Pulmonary Tuberculosis	125	72	197
Number of patients with Leprosy	12	4	16

TABLE 109

CASUALTIES IN MALE AND FEMALE WARDS, 1956

	<i>Male Patients</i>	<i>Female Patients</i>
Wounds inflicted by other patients	267	295
Wounds inflicted by accidents	242	259
Wounds self-inflicted	261	267
Patients with suicidal tendencies	69	78

TABLE 110

INSULIN SHOCK THERAPY

	<i>Male Patients</i>	<i>Female Patients</i>
Number of patients treated	67	94
Number of patients still under treatment	15	15
Number of patients discharged	48	70
Number of patients still in hospital	21	19
Total number of treatments given	3,774	3,720
Total amount of insulin used (in units)	691,075	892,596
Deaths	Nil	2

TABLE 111

SECLUSION OF PATIENTS, MALE AND FEMALE

Total number of male patients in seclusion	...	...	3
Total number of female patients in seclusion	...	...	12
Total number of hours in seclusion	...	...	18½ hours

DIVISION OF PSYCHOLOGY

486. This Division was started in September 1956 with the appointment of a Psychologist to the staff of the Hospital. Investigations done by the Division of Psychology is given in Table 112.

TABLE 112

INVESTIGATIONS DONE IN THE DIVISION OF PSYCHOLOGY, 1956

Assessment of Social and Psychological factors as an aid to training, disposal and re-settlement	...	...	36
Assessment of personality make-up	...	...	29
Diagnosis and differential diagnosis	...	...	19
Vocational and educational guidance	...	...	15
Assessment of general ability and special aptitudes	...	...	10
		Total	109

PSYCHIATRIC SOCIAL WORK

487. In December 1955 a lady psychiatric social worker was appointed to the Hospital. During 1956 she has assisted in the investigations of the case histories and in the after-discharge-emplacment of 777 patients.

OCCUPATIONAL, RECREATIONAL AND DIVERSIONAL THERAPY

488. Carpentry, repair work, painting and varnishing, basketry, rug making, weaving, soft and wooden toy making, artificial flower making, fine needle work and raffia work are engaged in. A summary of the work in the Male and Female Occupational Therapy Sections, in the Tailoring Section, in the Laundry and in Farms and Gardens are given in Table 113.

TABLE 113

WORK DONE IN OCCUPATIONAL, RECREATIONAL AND DIVERSIONAL THERAPY

Articles made in the Male and Female Occupational Therapy	4,871
Articles made and mended in the Tailoring Section	30,490
Items handled in the Laundry	539,543
Hospital Farm production	221,680 lbs.

FORENSIC PSYCHIATRY

489. There were in this hospital on the 31st December 1956, 110 male and 47 female patients who had been sent here by the various courts, by the local prisons, or by order of the Chief Secretary to be detained here during Her Majesty's pleasure for treatment of their psychiatric conditions.

490. Their offences against the law ranged from murder, manslaughter, and causing grievous hurt to nothing worse than attempted suicide or vagrancy. The courts regularly send accused persons to this hospital for varying periods of one to four weeks for mental observation, and the officers of this hospital provide the courts with psychiatric reports on these persons. These reports have been of value to the courts in determining future action in regard to these accused persons, and officers from this hospital also frequently appear before the courts to give expert oral evidence.

491. Those who are mentally ill and who also have been habitual vagrants are a social problem, and the psychiatric social workers of this hospital investigate their social, personal, and family back-grounds thoroughly in an attempt to search for the causes that have led to their vagrancy, and to assist them with their social rehabilitation, if possible, through liaison work with other welfare agencies, and relatives after their recovery and discharge.

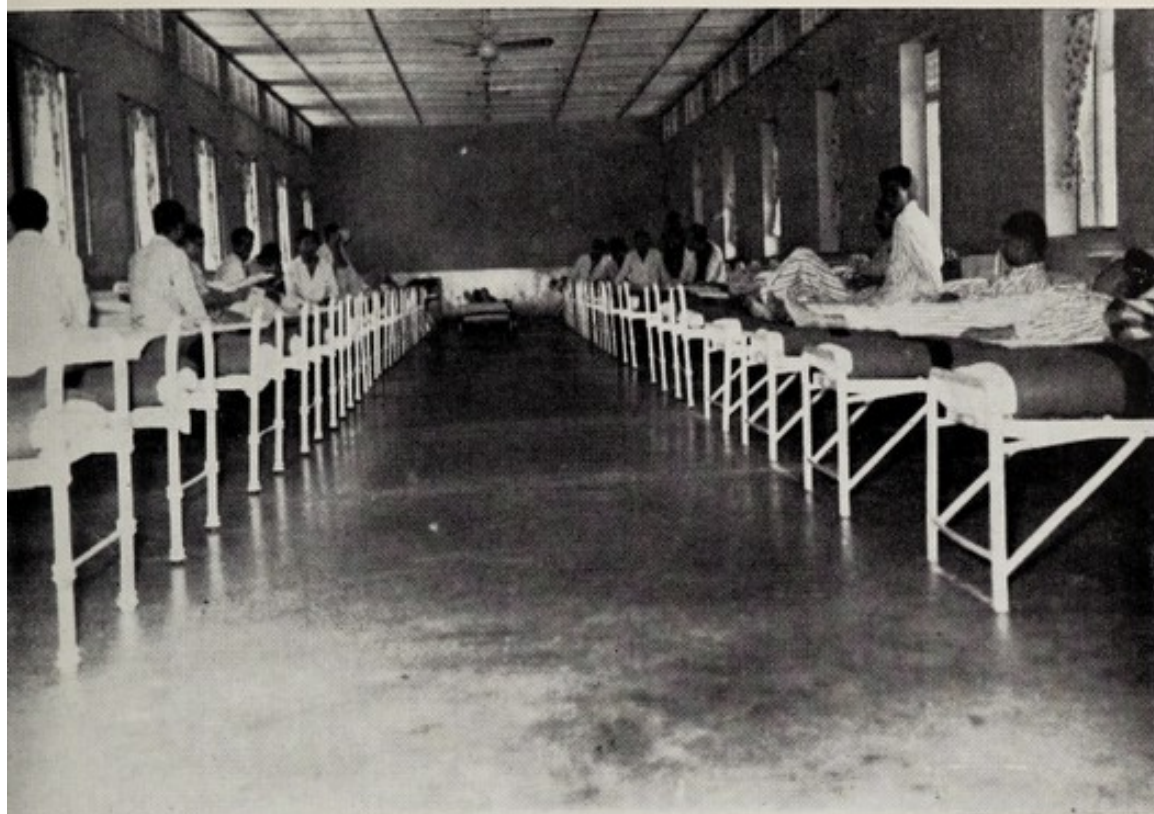
DEVELOPMENT PROGRAMME

492. Construction of four new two-storey ward blocks was commenced in 1956 and will be ready for occupation early in the new year. Earth works on the site for the new Nurses Home has also begun. The plans for the first phase of the Mental Defectives Home have been finalised and construction will begin in 1957.

TEACHING

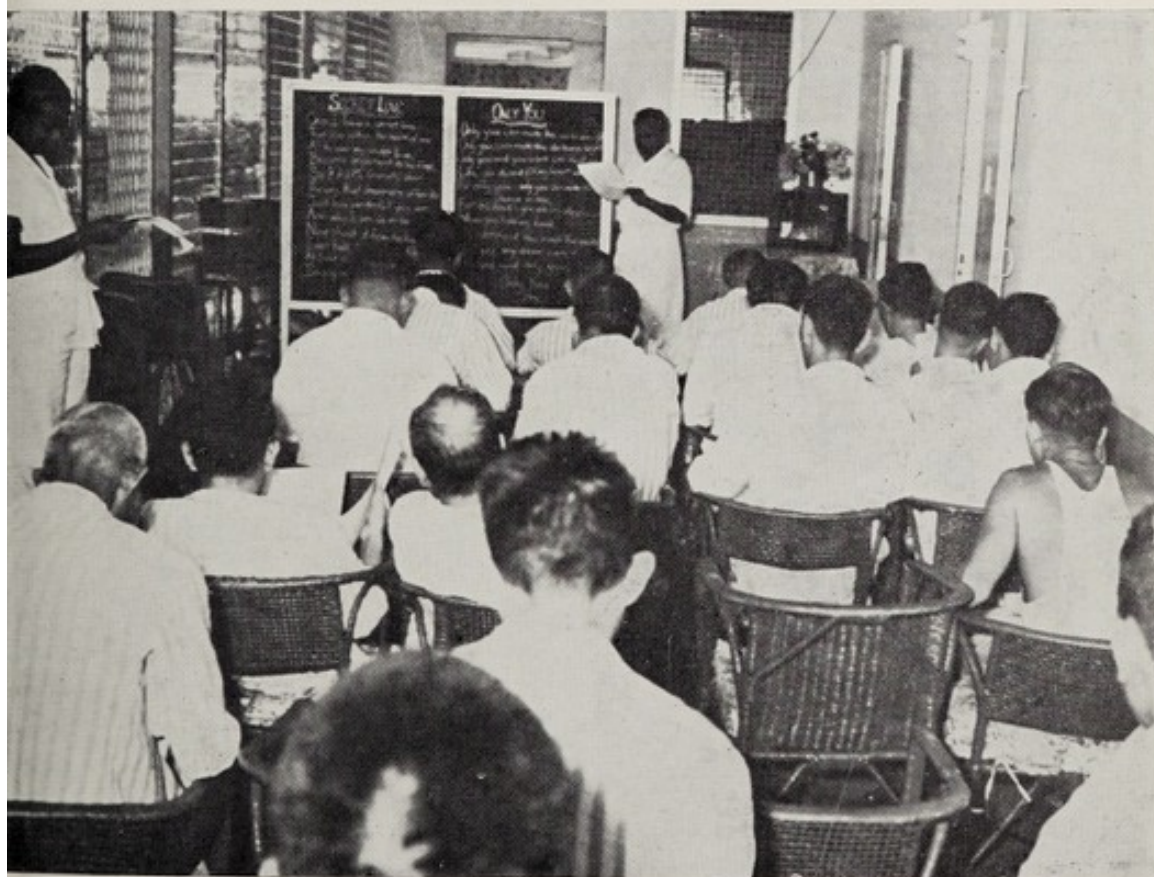
493. Formal lectures and clinical instruction was given by Dr. J. Browne during the year to 54 final year medical students and 7 post-graduate students attending the D.P.H. Course at the University of Malaya. Practical instructions to 3 students attending the Course in Social Studies was also given. Departmental training of student-nurses and other junior staff of the Hospital was also given.

WOODBIDGE HOSPITAL



Health Education Officer, Singapore

Psychiatric patients are being cared for in large well-ventilated wards without bars



Health Education Officer, Singapore

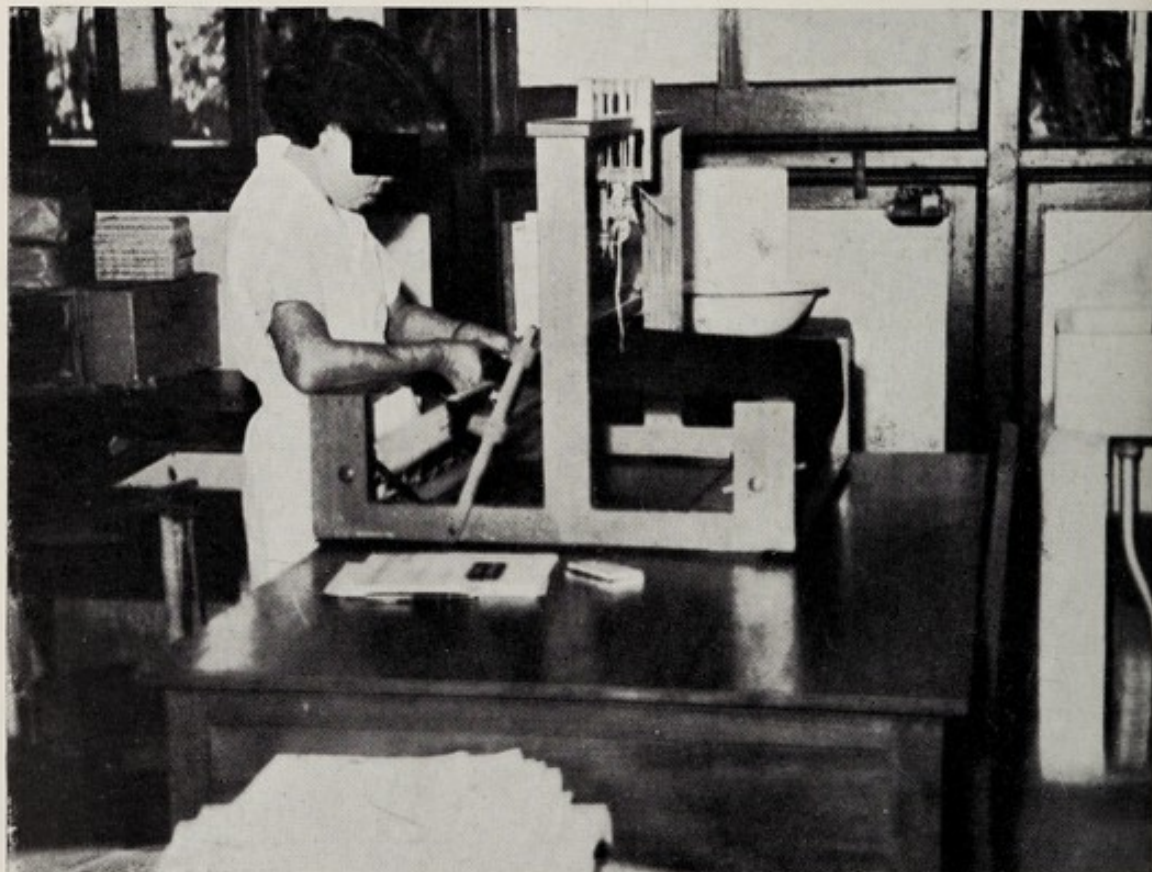
Singing Class in progress

TRAFALGAR HOME



Health Education Officer, Singapore

View of the Farm



Health Education Officer, Singapore

Patient engaged in Occupational Therapy

CHAPTER TWENTY-TWO
INFECTIOUS DISEASE

MIDDLETON HOSPITAL

494. Middleton Hospital, named after Dr. Middleton, a former Municipal Health Officer is the only institution specifically reserved for infectious disease in the Colony apart from the Quarantine Station. The Hospital admitted 3,831 cases compared with 3,312 in 1955, 2914 in 1954, 2049 in 1953 and 1,796 in 1952. The principal conditions dealt with during the year under review are given in Table 114. The total number of admissions was the highest ever. The Hospital is run by the City Council and Government makes an annual grant. It is the teaching hospital for infectious diseases for medical students from the University of Malaya. During the year 90 medical students and 7 post-graduate students for the Diploma in Public Health attended courses in infectious diseases at the Hospital.

Staff

495. The staff of the Hospital consisted of 1 Medical Superintendent, 1 Resident Medical Officer, 7 Nursing Sisters 20 Nurses, 27 Assistant Nurses and 6 Hospital Assistants. Dr Ng See Yook, L.M.S., D.P.H., was the Medical Superintendent of the Hospital.

TABLE 114

DISEASES DEALT WITH IN MIDDLETON HOSPITAL, 1956

<i>Diseases</i>	<i>Remaining 1955</i>	<i>Admitted</i>	<i>Discharged</i>	<i>Died</i>	<i>Remaining 31-12-56</i>
Small-pox ...	—	—	—	—	—
Cholera ...	—	—	—	—	—
Plague ...	—	—	—	—	—
Chicken-pox ...	18	1,488	1,484	—	22
Herpes-Zoster ...	—	1	1	—	—
Measles ...	2	301	291	12	—
Rubella ...	—	86	85	—	1
Diphtheria ...	36	552	504	47	37
Diphtheria Carrier ...	1	188	187	—	2
Ac. Ant. Poliomyelitis ...	19	37	32	—	24
Pulmonary Tuberculosis ...	—	1	1	—	—
Tuberculosis Meningitis ...	—	2	1	1	—
Meningitis Non-Meningococcal ...	—	2	2	—	—
Typhoid Fever ...	7	76	74	1	8
Tropical Typhus ...	—	1	1	—	—
Malaria B.T. ...	—	1	1	—	—
Japanese B. Encephalitis ...	—	1	—	—	1
Mumps ...	1	52	53	—	—
Whooping Cough ...	1	85	82	2	2
Erysipelas ...	—	2	2	—	—
Amœbic Dysentery ...	3	126	121	3	5
Basillary Dysentery ...	—	26	26	—	—
Clinical Dysentery ...	2	63	62	1	2
Infective Hepatitis ...	—	1	1	—	—
Late effect of Polio ...	1	1	1	—	1
Typhoid Carrier Observations ...	—	369	369	—	—
Observation ...	1	84	85	—	—
Other diseases ...	4	285	275	9	5
Total ...	96	3,831	3,741	76	110

DANGEROUS INFECTIOUS DISEASES

496. There were no cases of small-pox, cholera or plague.

Diphtheria

TABLE 115

DIPHTHERIA ADMISSIONS AND DEATHS FOR THE LAST 10 YEARS

—	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
Admissions ..	136	184	220	222	370	427	332	345	460	552
Deaths ..	23	41	42	28	91	80	47	34	41	47

497. It is evident from the Table 115 that the number of admissions is increasing every year in spite of the efforts made by the Health Authorities in Singapore to stamp out this disease.

498. During the year 552 cases of Diphtheria were admitted with 47 deaths, a case mortality rate of 8.5 per cent. 20 cases died within 24 hours after admission which shows that these cases were brought into hospital in the last stage of the disease. 111 cases required tracheotomy operation, of which 30 died. Practically all the tracheotomies had to be performed within the first or second hour of admission. Over 97 per cent cases had not been immunised against diphtheria. No fatal or severe cases occurred among the group immunised. Besides the above clinical cases, 188 contact diphtheria carriers with positive swab for *C. diphtheria* were also admitted for isolation and treatment.

499. During the year a survey was carried out to determine the social condition of the cases admitted, and the following summarised information is of some interest:—

Cases for over-crowded households	...	81 % cases
Cases with financially poor parents	...	80 % ..
Cases with illiterate parents	...	80 % ..
Cases who had diphtheria inoculation	...	2.9% ..
Cases from the City	...	75 % ..

500. Three-fourth of the diphtheria cases are from the overcrowded City area from poor illiterate families. To control this disease it is the hope that the above information will enable the Health authorities to direct their beam of health propaganda more forcibly in that direction to achieve better results in the campaign of immunisation against this disease.

TABLE 116

MONTHLY DIPHTHERIA ADMISSIONS AND DEATHS

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Admissions	58	43	28	38	57	54	50	52	39	43	36	54	552
Deaths ..	3	6	3	4	2	7	7	3	4	3	3	2	47

TABLE 117

REGIONAL DISTRIBUTION OF DIPHTHERIA ADMISSIONS

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Urban ..	49	34	22	33	46	39	36	40	26	28	23	39	415
Rural ..	9	9	6	5	11	15	14	12	13	15	13	15	137
													552

TABLE 118

DIPHTHERIA ADMISSIONS AND DEATHS BY AGE AND SEX GROUP

Age Group	Admissions		Total Admissions	Deaths		Total Deaths
	M	F		M	F	
Under 1 year ...	25	15	40	3	3	6
1 year ...	39	39	78	8	4	12
2 years ...	52	42	94	5	5	10
3 years ...	49	24	73	3	3	6
4 years ...	32	31	63	2	2	4
5 years ...	23	13	36	1	—	1
6—10 years ...	61	72	133	3	5	8
11—14 years ...	6	13	19	—	—	—
15—19 years ...	5	3	8	—	—	—
20 + ...	2	6	8	—	—	—
Total ...	294	258	552	25	22	47

TABLE 119

DIPHTHERIA ADMISSIONS AND DEATHS BY ETHNIC GROUP

	Admissions			Deaths		
	M	F	Total	M	F	Total
Europeans ...	—	—	—	—	—	—
Eurasians ...	1	2	3	—	—	—
Chinese ...	268	239	507	23	18	41
Indians ...	7	6	13	1	—	1
Malaysians ...	18	10	28	1	4	5
Others ...	—	1	1	—	—	—
Total ...	294	258	552	25	22	47

TABLE 120

DIPHTHERIA—TYPE OF CASES AND DEATHS

	Admissions	Deaths
Laryngeal and Tracheal ...	171	36
Naso-pharyngeal ...	108	11
Faucial and Tonsillar ...	239	—
Nasal ...	33	—
Aural ...	1	—
Total ...	552	47

TABLE 121

DIPHTHERIA ADMISSIONS, DEATHS AND TRACHEOTOMIES

Total admissions	...	...	...	552
Total deaths	...	...	...	47
Case mortality rate	...	...	...	8.5%
Died within 24 hours after admission	...	...	...	20
Number of Tracheotomies done	...	...	...	111
Number of deaths after Trachy	...	...	...	30

501. A number of cases suspected of diphtheria were admitted but on investigation they were diagnosed as follows:--

Bronchitis and Broncho Pneumonia	...	...	13
Acute Tonsillitis and laryngitis	...	...	196
Stomatitis	...	...	6

Acute Anterior Poliomyelitis

502. There were 37 admissions with no deaths. Majority of the cases were under the age of 5 years. Except for 4 Europeans (two female adults and 2 children) all the cases were Asians. No cases required the use of the mechanical respirator as none had any paralysis involving the respiratory muscles. All the cases were of paralytic type affecting either the upper or lower limbs, except one European boy who had a non-paralytic type of Polio. The above figure does not represent the actual number of Polio cases occurring in Singapore as some cases of abortive and non-paralytic type do not seek hospital treatment.

503. An average of 24 patients were receiving Physiotherapy treatment daily.

TABLE 122

POLIOMYELITIS ADMISSIONS AND DEATHS FOR THE LAST 10 YEARS

	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
Admissions	134	68	81	78	50	41	71	19	37
Deaths	18	2	10	8	8	5	2	2	..

TABLE 123

REGIONAL DISTRIBUTION OF POLIOMYELITIS CASES DURING THE YEAR 1956

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Urban	1	1	1	2	3	..	..	1	4	3	7	23
Rural	1	3	2	4	1	..	..	..	..	2	1	14

} 37

TABLE 124

POLIOMYELITIS ADMISSIONS AND DEATHS BY MONTH

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Admissions	..	2	4	3	6	4	..	..	1	4	5	8	37
Deaths

TABLE 125

AGE GROUP, SEX AND TYPE OF CASES OF POLIOMYELITIS

	Under 1 Yr.		1 Yr.		2 Yrs.		3 Yrs.		4 Yrs.		5 Yrs.		6-10		11-14		15-19		20+		Total	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
Paralytic	..	3	4	7	6	2	4	2	3	..	1	..	..	..	2	..	..	..	..	..	2	36
Non-paralytic	1	..	..	..	..	..	..	..	1
Total	..	3	4	7	6	2	4	2	3	..	1	..	..	1	2	..	..	..	..	..	2	37
Deaths

TABLE 126

AGE GROUP, NATIONALITY AND SEX OF POLIOMYELITIS CASES

Age Group	Europeans		Eurasians		Chinese		Indians		Malaysians		Others		Total	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Under 1 year	..	1	..	..	2	2	..	1	1	..	..	..	3	4
1 year	4	1	2	3	1	2	..	..	7	6
2 years	1	2	1	..	..	2	..	..	2	4
3 years	2	3	..	..	..	..	..	..	2	3
4 years	1	..	..	..	..	..	1
5 years
6-10 years	..	1	..	..	..	..	..	2	..	..	..	..	1	2
11-14 years
15-19 years
20+	2	..	..	..	..	..	..	..	..	..	..	2
Total	1	3	..	..	9	8	3	7	2	4	..	..	15	22

Typhoid Fever

504. 76 cases of typhoid fever were admitted during the year. One case, a female Chinese adult, who was admitted to hospital on the 9th day of her illness died within 24 hours after admission. There was no concentration of the disease in any particular part of Singapore. Out of 76 cases admitted, 15 were from rural area. During 1955 there were 114 cases with 2 deaths. A total of 369 persons employed by the City Council Water Department and various ice cream manufacturing factories were investigated, but none was found to be a carrier.

TABLE 127

AGE, SEX AND ETHNIC GROUP OF TYPHOID FEVER

	0-10		11-19		20+		Total
	M	F	M	F	M	F	
Eurasians	—	1	—	—	—	—	1
Chinese	12	9	13	7	14	6*	61
Indians	2	2	1	1	5	—	11
Malaysians	—	—	—	—	2	1	3
Total	14	12	14	8	21	7	76

* Note:—One death in adult Chinese female.

TABLE 128

ADMISSIONS AND DEATHS BY MONTHS

—	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov	Dec.	Total
Admissions	2	4	6	2	7	8	12	4	3	6	12	10	76
Deaths ..	..	..	..	..	..	..	1	..	..	..	..	..	1

TABLE 129

REGIONAL DISTRIBUTION OF TYPHOID FEVER

—	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Urban ..	2	3	4	2	5	8	12	4	2	2	12	5	61
Rural ..	..	1	2	..	2	..	..	..	1	4	..	5	15

Chicken-pox

505. 1,488 cases of chicken-pox were admitted during the year with no deaths. 83 per cent cases were from City Area. As in previous years, nearly 50 per cent admissions were Indian male adults.

TABLE 130

REGIONAL DISTRIBUTION OF CHICKEN-POX

—	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Urban	147	175	153	148	110	95	76	71	61	72	57	79	1,244
Rural ..	24	33	34	19	15	23	22	20	19	16	10	9	244

TABLE 131

AGE, SEX AND ETHNIC GROUP OF CHICKPEN-POX

	0-10		11-20		20+		Total
	M	F	M	F	M	F	
Europeans ...	1	—	—	1	1	—	3
Eurasians ...	11	4	13	3	6	5	42
Chinese ...	73	79	57	40	81	20	350
Indians ...	86	95	106	53	534	61	935
Malaysians ...	16	8	19	2	44	3	92
Others ...	16	11	4	8	21	6	66
Total ...	203	197	199	107	687	95	1,488

Malaria.

506. One case of benign tertian and 2 cases of clinical malaria were admitted during the year. A male attendant of this hospital who had been to Johore on holiday was admitted here with fever a fortnight after his visit and on investigation was found to be suffering from B.T. malaria. The other 2 were American seamen.

Japanese B. Encephalitis

507. This is the first case of this disease admitted into this hospital. A muslim boy of 9 years admitted with signs and symptoms of encephalitis and hemiplegia was serologically diagnosed as Japanese B. Encephalitis by Professor Hale of the University of Malaya. The patient is still under treatment in hospital.

Tropical Typhus

508. There was only 1 case of tropical typhus admitted during the year (murine type).

Measles

509. 301 cases were admitted with 12 deaths. 8 cases died within 24 hours after admission due to the complication of Broncho-Pneumonia. 22 cases were from the Overseas Chinese Creche and other public institutions.

Whooping Cough

510. There was a mild outbreak of the disease during the year with 85 admissions and 2 deaths. This is the highest number of cases ever admitted to this hospital for the past 20 years. Besides the above, 18 mild cases were also treated as out-patients.

TABLE 132

MONTHLY ADMISSIONS AND DEATHS OF WHOOPING COUGH

—	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Admissions	3	..	3	4	5	10	23	11	7	9	4	6	85
Deaths ..	..	..	..	..	..	..	..	1	..	..	1	..	2

TABLE 133

DYSENTERY ADMISSIONS AND DEATHS

<i>Type of Dysentery</i>		<i>Admissions</i>	<i>Deaths</i>
Amœbic Dysentery	... ..	126	3
Bacillary Dysentery	... ..	26	—
Clinical Dysentery	... ..	63	1
Total	... ..	215	4

511. Of the 126 cases of Amœbic Dysentery admitted, 3 cases died. One, a Chinese male adult, 56 years old, was a chronic case of Pulmonary Tuberculosis, died 6 days after admission, and the other 2, a Malay girl of 5½ years, and a Chinese boy of 2 years died 2 days after admission. Of the 26 cases of Bacillary, 19 were type Flexner and 7 Sonne.

512. During the routine examination of the employees of the ice cream factories for Typhoid carrier state, 2 were found to be B. Dysentery carriers. They were admitted to hospital for treatment.

TABLE 134

OTHER DISEASES

<i>Diseases</i>	<i>Remaining 1955</i>	<i>Admitted</i>	<i>Discharged</i>	<i>Died</i>	<i>Remaining 31-12-56</i>
Acute Tonsillitis	... 2	180	179	—	3
Acute Laryngitis	... —	16	16	—	—
Bronchitis	... ..	8	8	—	—
Bronchiectasis	... ..	1	1	—	—
Broncho Pneumonia	... 1	5	3	3	—
Influenza	... ..	7	7	—	—
Pyrexia of unknown origin	—	2	1	—	1
Malarial Clinical	... ..	2	2	—	—
Encephalitis and Myelitis	... ..	2	1	1	—
Non-Pyogenic Arthritis	... ..	3	3	—	—
Rheumatoid Arthritis	... ..	2	2	—	—
Cardiac failure	... ..	1	—	1	—
Dermatitis	... ..	4	4	—	—
Boils	... ..	2	2	—	—
Burns	... ..	1	1	—	—
Pyelitis	... ..	1	1	—	—
Ankylostomiasis	... ..	3	3	—	—
Ascariasis	... ..	10	10	—	—
Gastro enteritis and Colitis	1	17	14	4	—
Stomatitis	... ..	6	6	—	—
Bacillary Dysentery Carrier	—	2	2	—	—
Carcinoma Rectum	... ..	3	3	—	—
Lambliasis	... ..	1	—	—	1
Congenital Syphilis	... ..	1	1	—	—
Intussusception	... ..	1	1	—	—
Adenitis	... ..	1	1	—	—
Otitis media	... ..	1	1	—	—
Hæmorrhoids	... ..	2	2	—	—
Total	... 4	285	275	9	5

TABLE 135

ADMISSION OF IMPORTANT DISEASES TO MIDDLETON HOSPITAL, 1946-56

Diseases	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
Small-pox	99	41	5	..	..	..	..	..	..	..	..
Plague .. ..	..	..	..	..	..	..	..	..	..	..	..
Cholera .. ..	..	..	..	..	..	..	..	..	..	..	..
Chicken-pox	256	323	313	373	422	610	450	836	1,313	1,769	1,488
Measles	206	54	41	194	50	204	142	117	182	200	301
Rubella	5	49	5	6	1	11	9	..	1	..	86
Diphtheria	140	137	184	218	222	370	427	332	345	460	552
Cerebro Spinal Meningitis ..	6	15	7	4	4	4	2	4	2	..	..
Typhoid Fever	74	59	53	62	88	91	117	91	125	114	76
Acute Anterior Poliomyelitis ..	137	..	134	68	81	78	50	41	70	19	37
Erysipelas .. ..	..	2	15	15	12	4	3	..	3	..	2
Whooping Cough	34	12	6	8	27	5	3	..	10	5	85
Scarlet Fever .. ..	..	..	..	..	..	79	..	..	..	..	..
Mumps	42	191	30	3	14	..	15	9	35	54	52
Tropical Typhus	3	1	6	8	3	7	92	4	7	..	1
Amoebic Dysentery	95	89	65	106	90	105	22	134	122	136	126
Bacillary Dysentery	15	5	1	11	9	18	9	25	18	17	26
Cinical Dysentery	48	6	40	..	17	40	..	16	34	35	63
Other disease carrier and Observations	540	405	893	602	731	591	455	440	647	503	936
Total ..	1,700	1,389	1,798	1,678	1,771	2,217	1,796	2,049	2,914	3,312	3,831

TABLE 136

ETHNIC GROUP, NUMBER OF DAYS AND DEATHS IN HOSPITAL

	REMAINING 1955		ADMITTED 1956		TOTAL		Died
	No. of Patients	No. of days in Hosp.	No. of Patients	No. of days in Hosp.	No. of Patients	No. of days in Hosp.	
Europeans .. ..	..	..	17	156	17	156	..
Eurasians	2	40	76	671	78	711	..
Chinese	76	3,826	2,063	24,107	2,140	27,933	67
Indians	14	489	1,260	10,354	1,273	10,843	2
Malays	2	20	301	2,147	303	2,167	7
Malaysians	2	28	35	232	37	260	..
Others .. ..	..	..	79	495	79	495	..
Total ..	96	4,403	3,831	38,162	3,927	42,565	76

TABLE 137

HOSPITAL IN-PATIENT SUMMARY, 1956

SEX	Remaining 1955	Admitted 1956	Total Treated	Discharged	Transferred	Absconded	Died	Total	Remaining at end of 1956	% Deaths	Average daily No. of patients	No. of Beds
Male	55	2,435	2,490	2,435	15	..	40	2,428	62			
Female	41	1,396	1,437	1,394	7	..	36	1,389	48			
Total	96	3,831	3,927	3,829	22	..	76	3,817	110	1.93%	116	250

New Buildings

513. The 30-bed Cubicle Ward under construction in 1955 was completed and officially opened by Mr. R. Middleton-Smith, Acting President, City Council, on 11th October, 1956. The ward is now in use.

514. The Staff Canteen and Changing Rooms were completed and now in use. This has improved considerably the social amenities for all the staff.

CHAPTER TWENTY THREE

RADIOLOGY

515. This is another year in which the number of radiologic examinations in all hospitals has maintained the progressive increase of the past few years.

Staff

516. The staff position at the end of the year is given in Table 138. Dr. F. Y. Khoo, M.B., B.S., D.M.R.D., Senior Radiologist was in charge of the Department; Dr. (Miss) J. K. Ritchie, B.M., B.CH. was in charge of the Radiotherapy Section until her resignation in July 1956.

TABLE 138
STAFF POSITION IN THE DEPARTMENT OF RADIOLOGY
ON 31ST DECEMBER, 1956

	<i>Radio- logists</i>	<i>Radio- therapists</i>	<i>Radio- graphers</i>	<i>X-Ray Assistants</i>
General Hospital ...	4	1	11 (Diagnostic) 2 (Therapeutic)	3
Tan Tock Seng's Hospital	1	—	1	3
Kandang Kerbau Hospital	—	—	1 (Part-time)	—
Woodbridge Hospital ...	—	—	1 (Part-time)	—
On Scholarship in the United Kingdom ...	—	1	—	7
Total ...	5	2	16	13

TABLE 139
RADIOLOGIC EXAMINATIONS DONE IN THE DEPARTMENT
OF RADIOLOGY

	1952	1953	1954	1955	1956
General Hospital ...	30,455	37,767	46,189	53,880	68,662
Tan Tock Seng's Hospital ...	31,607	40,102	55,014	60,406	67,812
Kandang Kerbau Hospital ...	—	2,574	2,983	3,563	4,266
Woodbridge Hospital ...	—	—	419	3,970	4,106
Total ...	62,062	80,443	104,605	121,819	144,846

TABLE 140
RADIOTHERAPY TREATMENTS DONE IN THE DEPARTMENT
OF RADIOLOGY

	1952	1953	1954	1955	1956
Deep X-Ray Therapy:					
Malignant Cases ...	158	198	297	353	241
Non-Malignant Cases ...	44	52	118	98	61
Superficial X-Ray Therapy ...	129	149	146	136	77
Radium Treatment ...	20	13	4	12	1
Total ...	351	412	565	599	380*

* Total cases for 1956 show a decrease because very few cases were accepted for treatment during the period July-October 1956.

TABLE 141
SUMMARY OF DIAGNOSTIC RADIOLOGIC EXAMINATIONS, 1956

Classification	General Hospital		Tan Tock Seng Hospital		Kandang Kerbau Hospital		Woodbridge Hospital		Total	
	1955	1956	1955	1956	1955	1956	1955	1956	1955	1956
1. Chest ..	21,180	29,504	55,811	63,027	1,332	1,584	3,970	3,851	82,293	97,966
2. Bronchography ..	134	185	195	260	..	..	..	..	329	445
3. Gastro-Intestinal Tract (Ba. Meals and Enemas) ..	2,221	2,375	95	3	..	..	..	..	2,316	2,378
4. Renal Tracts ..	1,268	1,477	..	..	..	..	..	..	1,394	1,619
5. Gall-Bladder ..	406	446	..	..	..	..	..	..	406	446
6. Heart ..	327	376	..	..	..	..	..	..	327	376
7. Pregnancy ..	30	6	..	..	..	..	..	..	1,232	1,496
8. Salpinography ..	136	174	..	..	..	..	..	..	225	174
9. Encephalography and Ven-triculography ..	34	48	..	..	..	..	..	..	34	48
10. Bones and Joints:										
(a) Injuries ..	20,960	23,789	..	..	..	..	..	..	20,960	23,854
(b) Diseases ..	4,486	6,549	480	520	..	..	..	..	5,088	7,478
11. Sinuses ..	776	1,099	37	34	49	44	..	..	862	1,177
12. Teeth ..	49	58	..	..	..	..	..	..	49	58
13. Tomography ..	69	91	3,614	3,768	..	..	..	..	3,683	3,859
14. Myelography ..	24	35	..	..	..	..	..	..	24	35
15. Arteriography ..	35	16	..	..	..	..	..	..	35	16
16. Angiocradiograms ..	36	43	..	..	..	..	..	..	36	43
17. Pelvimetry ..	..	..	..	..	..	..	..	..	643	787
18. Miscellaneous ..	1,709	2,391	174	200	..	..	..	..	1,883	2,591
Total ..	53,880	68,662	60,406	67,812	3,563	4,266	3,970	4,106	121,819	144,846
Average per month ..	4,490	5,722	5,034	5,651	297	355	331	342	10,152	12,070

TABLE 142

SUMMARY OF RADIOTHERAPY TREATMENTS, 1956

DEEP X-RAY THERAPY:

Malignant Cases—

Nasopharyngeal Tumours	...	...	74
Breast	...	...	38
Bronchus	...	...	16
Cervix and Uterus	...	...	5
Ovary	...	...	3
Oesophagus	...	...	1
Mouth: tongue and Palate	...	...	4
Tonsil	...	...	1
Lip	...	...	1
Orbit	...	...	2
Larynx	...	...	8
Carcinoma cheek and buccal mucosa	...	...	4
Chronic Myeloid Leukæmia	...	...	2
Seminoma of testes	...	...	4
Nose	...	...	2
Thyroid	...	...	4
Alveolus and antrum	...	...	12
Malignant skin tumours	...	...	8
Parotid tumours	...	...	9
Pituitary tumours	...	...	1
Acromegaly	...	...	3
Osteogenic sarcoma	...	...	3
Kidney	...	...	3
Secondary Glands	...	...	5
Lymphosarcoma	...	...	2
Hodgkin's Disease	...	...	1
Miscellaneous	...	...	25
			<hr/>
			241

Non-Malignant Cases—

Ankylosing Spondylitis	...	...	14
Artificial Menopause	...	...	4
Tuberculous Glands	...	...	23
Hæmangioma	...	...	1
Other arthritis	...	...	19
			<hr/>
			61
			<hr/>
			302

SUPERFICIAL X-RAY THERAPY:

Hæmangiomas	...	...	5
Eczema	...	...	10
Keloids	...	...	36
Rodent Ulcers	...	...	4
Other skin—Tinea 4, Acne 2	...	...	6
Skin Nodules	...	...	2
Secondary glands	1
Miscellaneous	13
			<hr/>
			77

RADIUM TREATMENT	<hr/>
				1

Grand Total	...	<hr/>	380
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Teaching

517. During the first half of the year Dr. F. Y. Khoo gave lectures in diagnostic radiology to 64 final year medical students of the 1955-56 class and 11 fourth year dental students of the same class. During the latter half Dr. Khoo gave similar lectures to 49 final year medical students of the 1955-56 class and 17 fourth year dental students of the same class.

Development Programme

518. Proposals in respect of the planning of the Radiology Division at General Hospital, Tan Tock Seng's Hospital, Joo Chiat Clinic, Pegu Road Clinic and the Institute of Health were submitted.

519. One 500 M. A. Phillips Diagnostic set complete with Radiographic table for General Hospital and one 500 M.A. G.E. Diagnostic set together with a 4" x 5" photofluorographic unit for the Institute of Health were purchased and will be installed in 1957. One Phillips Dental X-Ray unit was also purchased.

CHAPTER TWENTY-FOUR

LABORATORY SERVICE

520. The work of the Department of Pathology comprises of autopsies on Coroner's and hospital cases, histological examination of biopsy and autopsy specimens, bacteriological, biochemical and hæmatological investigations, serological tests of blood and cerebro-spinal fluid, pregnancy tests and preparation of T.A.B. cholera and autogenous vaccines.

521. Work done by the Department served Government hospitals, clinics and general practitioners; it is not inclusive of all the laboratory service in Singapore, as many similar investigations are done in the City Council Laboratories and in the clinical laboratories of various hospitals.

Staff

522. The professional staff of the Department consisted of two Consultant Pathologists and four Assistant Pathologists. Dr. L. S. da Silva, L.M.S. (Singapore), Dip. Bact. (Manchester), Senior Pathologist was in charge.

TABLE 143

INVESTIGATIONS DONE IN THE DEPARTMENT OF PATHOLOGY

————	1951	1952	1953	1954	1955	1956
Post-mortem examinations ..	1,876	1,889	2,329	2,025	2,172	2,336
Histological examinations ..	3,260	4,673	6,203	7,039	8,728	9,444
Bacteriological examinations ..	10,854	13,764	14,250	25,617	33,406	44,576
Serological examinations ..	40,421	38,097	45,810	58,011	74,200	74,196
Biochemical examinations ..	..	..	..	1,008	5,881	7,190
Hæmatological examinations ..	..	..	..	1,922	10,426	25,974
Total ..	56,411	58,423	68,592	95,622	134,813	163,716
Post-mortem examinations on Coroner's cases	849	966	874	948	1,034	1,042

Table 143 shows a progressive increase in all classes of work done in the Department. The increase is in consonance with the expansion of Government hospital and clinic facilities.

Post-mortem Examinations

523. During the year 2,336 post-mortem examinations were done; of these, Coroner's cases accounted for 1,042 (45 per cent). The beneficial effect of modern preventive and therapeutic measures is demonstrated in Table 144 in the progressively decreasing numbers of cases of preventable disease coming to the post-mortem room; this Table also illustrates the comparative increase in degenerative and malignant diseases.

TABLE 144

SUMMARY OF CAUSES OF DEATH IN POST-MORTEM CASES

	1951	1952	1953	1954	1955	1956
Malaria	7	2	3	3	2	1
Beri-beri	19	12	16	13	14	6
Amœbiasis	12	12	13	7	11	4
Bacillary Dysentery	7	7	6	16	1	4
Typhoid	8	4	7	5	4	1
Diphtheria	7	7	3	4	3	8
Lobar Pneumonia	20	31	42	28	66	58
Tuberculosis	154	143	146	129	179	125
Hypertension	33	44	51	46	76	71
Coronary	48	65	54	73	76	86
Cardiovascular	37	41	33	41	23	20
Malignant	103	83	118	91	101	109

524. Deaths from violence and other unnatural causes increased to 518 in 1956 compared with 435 in 1955. Table 145 gives a summary of the main causes of death under this category.

TABLE 145

DEATHS FROM VIOLENCE AND OTHER UNNATURAL CAUSES

	1951	1952	1953	1954	1955	1956
Firearms	9	13	10	11	5	23
Cutting and Stabbing Instruments	21	25	21	13	20	21
Blunt Instruments	17	3	6	2	8	10
Caustic Soda Poisoning	34	41	61	49	41	42
Poisoning, other types	19	14	16	10	17	20
Hanging	34	49	53	59	64	51
Drowning	42	71	65	92	68	72
Vehicle Accidents	115	136	112	104	148	160
Anaphylaxis	—	—	5	3	1	3

TABLE 146

AGE, SEX AND RACE INCIDENCE OF AUTOPSIES ON ALL DEATHS
CORONER'S AND WARD CASES 1956

Age	Chinese		Indian		Malays		Others		Total		Grand Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Under 1 year ..	466	306	9	7	3	3	3	1	481	317	798
1-10 yrs.	168	162	9	8	7	1	1	..	185	171	356
11-20 ..	66	36	8	2	7	3	2	..	83	41	124
21-30 ..	88	44	22	6	9	2	5	..	124	52	176
31-40 ..	74	42	33	2	6	3	4	1	117	48	165
41-50 ..	146	54	36	1	9	2	4	3	195	60	255
51-60 ..	169	32	41	2	7	..	3	1	220	35	255
61-70 ..	93	28	14	..	..	1	3	..	110	29	139
Over 70 years	28	17	2	..	1	1	1	..	32	18	50
Total ..	1,298	721	174	28	49	16	26	6	1,547	771	2,318
Autopsies on decomposed corpses and bones ..											18
Total ..											2,336

Histology

525. 9,444 histological sections were prepared and examined, as compared with 8,728 in 1955, 7,039 in 1954, 6,203 in 1953, 4,673 in 1952 and 3,260 in 1951. Of the 9,444 sections prepared 8,082 of these sections were from 6,639 biopsy tissues taken from 5,814 cases; the remaining 1,362 sections were prepared from autopsy tissues from 725 cases. Histological study of only 297 of these 725 cases was completed. A substantial amount of autopsy material still remains to be examined.

526. The incidence of disease in the biopsy tissues is given in Table 147.

TABLE 147

INCIDENCE OF DISEASE IN BIOPSY TISSUES

	1955	1956
Inflammation	1,393	1,575
Tuberculosis	240	332
Benign tumour	711	777
Malignant tumour	698	815
Others	2,166	3,140
Total	5,208	6,639

Bacteriology

527. 44,576 specimens were examined in 1956, compared with 33,406 in 1955. This is an increase of 11,170 specimens; There was a general rise in the numbers of every type of specimen examined.

528. A marked increase in antibiotic sensitivity tests was seen. 5,893 specimens were tested, compared with 3,261 in 1955. Antibiotics commonly tested for were penicillin, streptomycin, aureomycin, terramycin, chloramphenicol, tetracycline and polymixin. Some of the pathogenic B. Coli that were the cause of infantile diarrhoea were sensitive to streptomycin and chloromycetin.

529. Approximately 2,500,000 c.c. of media of different types were prepared in 1956.

530. The culture for amœbae started in October 1954 continue to be well in subculture in the medium elaborated in the Department. of 1,743 cultures for amœbae, 87 were positive for *E. histolytica*; only 46 of these 1,743 specimens were positive on microscopical examination.

Biochemistry

531. The Biochemistry Section began to function in September 1953 and there has been an increase in the volume of work done. 7,190 analyses were done in 1956, compared with 5,881 in 1955 and 1,008 in 1954.

Serology

532. 67,693 blood specimens and 6,503 cerebro-spinal fluid specimens were examined.

533. The V.D.R.L. (Venereal Diseases Research Laboratory) test is the screen test for all sera received. Any evidence of positivity is checked with the Kahn, Wasserman or P.P.R. (Price's Precipitation Reaction).

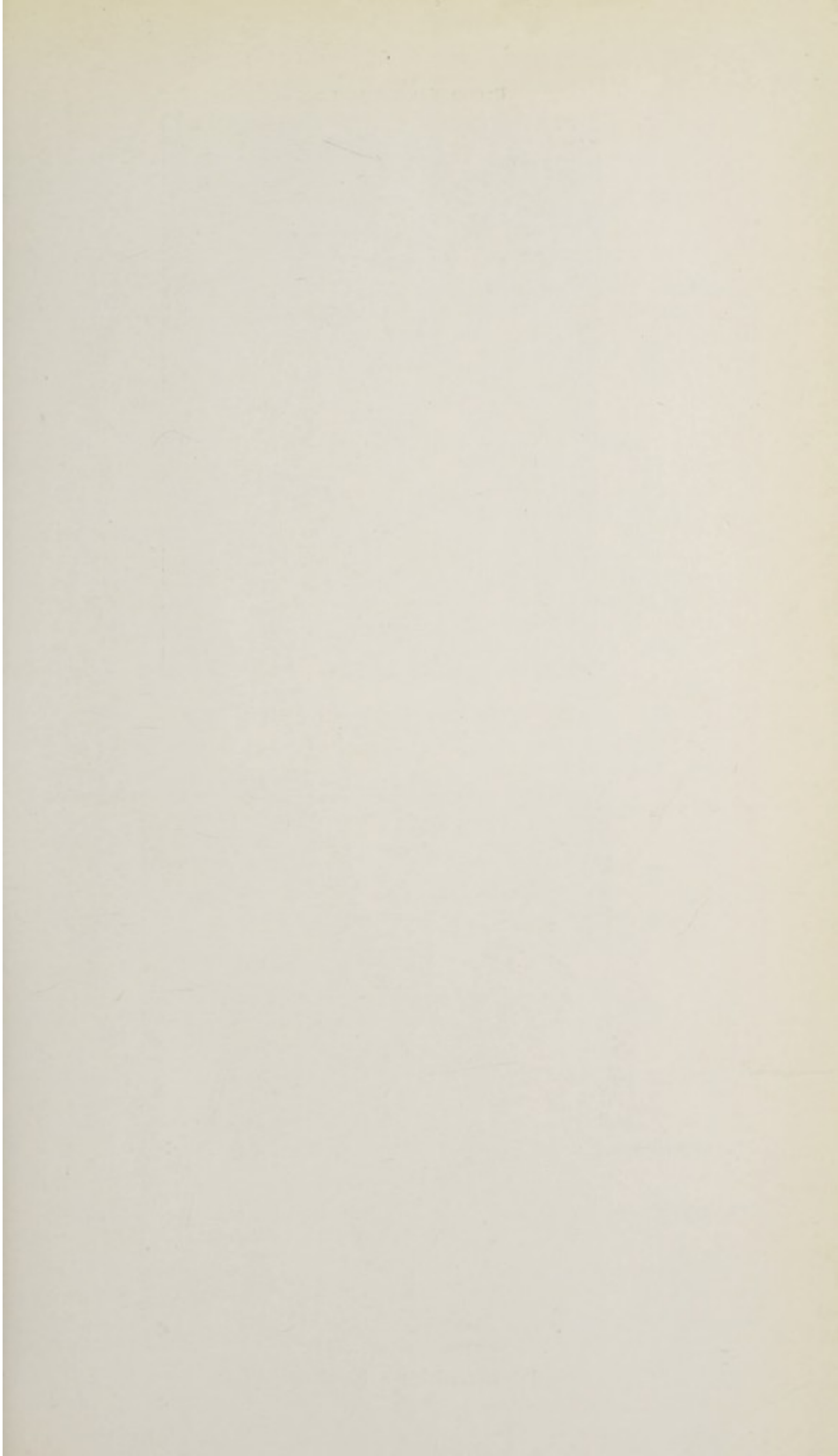
534. 413 Colloidal Gold Reaction Tests on cerebro-spinal fluid and 250 Gonococcus Complement Fixation Tests were done.

Teaching

535. The Professor of Pathology (Prof. R. Kirk) and his staff were responsible for the teaching of Pathology. Dr. L. S. da Silva was responsible for the teaching of Forensic Medicine to 54 medical students.

New Building

536. By the end of the year work on the new Institute of Pathology building had commenced and it is expected the building will be ready for use in 1957.



BLOOD TRANSFUSION SERVICE



Singapore P.R. Photo

The Minister for Health pins a Medal on a regular Blood Donor



Infant receiving a Blood Transfusion

CHAPTER TWENTY-FIVE

BLOOD TRANSFUSION SERVICE

537. The Blood Transfusion Service has continued to serve all hospitals in Singapore (except the British Military Hospital) from the Centre at the General Hospital. The friendly relationship with the Royal Air Force has continued. Their hospital at Changi is served by the Service; regular fortnightly donor sessions are held there and parties of donors have come weekly to donate blood at the General Hospital.

538. The amount of blood handled this year has increased to 7,769 flasks; this is an average of 648 flasks a month. At times there has been difficulty in meeting the increasing demand for transfusions. The patients in the surgical wards and the patients in the Kandang Kerbau Hospital have received a large proportion of the blood.

539. The policy of not paying donors and of not charging for transfusions has continued. Friends and relatives of patients are asked to replace blood in the bank or to provide donors before operations are performed; in the large majority of cases this is not done and the Service relies on the altruism of voluntary donors.

Staff

540. The staff of the Service consisted of 2 Medical Officers, 1 Sister Supervisor and 14 Technicians. Dr. (Mrs.) M. M. H. Gibson-Hill, M.R.C.S., L.R.C.P. was in charge.

Donors and Recipients

541. We are still, as in the past, greatly indebted to the British Armed Forces, particularly members of the Royal Air Force. Without this source of supply this Service could hardly be maintained with any degree of efficiency. It is they who come to our assistance in our times of difficulty, as well as continuing their regular support.

542. 2,162 donations came from members of Her Majesty's Forces. Many more were offered, but declined because they were Group A. The proportion of persons of Group A is higher (45 per cent) in the British than in Asians (25 per cent); so the potential supply often exceeded the demand. The reverse is true in the case of Group B. Asians are more frequently Group B (25 per cent) than the British (8 per cent); so until a far higher proportion of the donors are Asians there will be difficulty in meeting the demand for Group B blood.

543. The members of the Singapore Police Force have also been generous donors and their support is increasing steadily.

544. Regular donors have continued their help and during the year 25 gold medals for 20 donations and 132 silver medals for 10 donations were presented. Altogether 540 people have given their blood 10 times; of these 58 have given 20 or more times since the Service was started.

545. There were 3,394 new donors, many of whom have promised to come regularly. The number of donations from relatives of recipients has increased. The vast majority of recipients of transfusion are of course Chinese patients in the free wards of the General Hospital and Kandang Kerbau Hospital. Many of them are in a poor state of nutrition, and in most cases their relatives and friends are unable or unwilling to replace blood. However 859 donations came from relatives of patients in all hospitals. The Youngberg Memorial Hospital supplied donors for all their patients who received 155 transfusions.

TABLE 148
DONORS AND RECIPIENTS, 1952-56

			<i>Donors</i>	<i>Recipients</i>
1952	...	...	4,551	4,404
1953	...	...	6,515	6,317
1954	...	...	6,684	6,519
1955	...	...	7,470	7,492
1956	...	...	7,987	7,769

TABLE 149
ANALYSIS OF DONORS AND RECIPIENTS BY RACE—1956

	DONORS				RECIPIENTS		
	Male	Female	Total		Male	Female	Total
European ..	2,748	260	3,008	European ..	211	71	282
Chinese ..	2,272	77	2,349	Chinese ..	2,587	3,418	6,005
Indian ..	1,033	18	1,051	Indian ..	341	423	764
Malay ..	811	4	815	Malay ..	148	426	574
Eurasian ..	602	37	639	Eurasian ..	34	60	94
Others ..	123	2	125	Others ..	17	33	50
Total ..	7,589	398	7,987	Total ..	3,338	4,431	7,769

TABLE 150
CATEGORIES OF DONORS 1952-56

	1952	1953	1954	1955	1956
Total individual donors ...	n.a.	n.a.	3,963	5,502	4,996
Donations from Service Personnel ...	1,359	1,991	2,198	1,689	2,162
Relatives:					
Taken ...	798	431	376	279	859
Offered and rejected ...	168	90	65	26	133
New donors ...	2,737	3,069	2,817	2,227	3,394
Voluntary donors offered and rejected	156	170	120	316	443

TABLE 151

ANALYSIS OF DISTRIBUTION 1952-56

	1952	1953	1954	1955	1956
General Hospital ...	2,245	3,306	3,606	4,197	4,239
Kandang Kerbau Hospital ...	2,032	2,737	2,433	2,888	2,985
Tan Tock Seng's Hospital ...	24	32	18	20	30
Youngberg Memorial Hospital ...	63	172	163	149	155
R.A.F. Hospital, Changi ...	7	38	125	153	191
Asian Hospital Naval Base ...	14	2	32	6	7
Middleton Hospital ...	7	3	33	8	9
Trafalgar Home ...	8	2	8	6	42
St. Andrew's Mission Hospital ...	—	3	6	1	8
Singapore Nursing Home ...	—	—	12	10	24
Other Hospitals ...	4	22	83	54	79
Total ...	4,404	6,317	6,519	7,492	7,769

Technical Work

546. The Laboratory has remained open day and night throughout the year. The work has continued to increase in volume and in scope.

547. The Department has continued to be the central depot for the distribution of all apparatus for intravenous therapy in all our hospitals. It is not thought economic to import disposable infusion sets. All used sets are returned for cleaning, reassembly and sterilization. Altogether some 9,777 blood, 10,352 saline giving and some 8,000 taking sets have been made up and distributed during the year.

548. Besides the normal grouping of donors' and patients' blood and matching of blood for transfusions there has been an increased demand for blood group antibody investigations.

549. With the expansion of the Pædiatric Unit and the availability of a doctor experienced in performing exchange transfusions, interest in and adequate treatment of babies suffering from Hæmolytic disease of the new born has been instituted.

550. The number of cases due to Rhesus incompatibility in the Chinese is very small, but several authenticated cases due to ABO incompatibility have been successfully treated. It is felt that if all European, Eurasian and Indian women were tested during pregnancy and if all cases of neo-natal jaundice were investigated in time, more cases would be found at a treatable stage.

Publicity and Propaganda

551. This has again been mainly directed towards the Asian population and has gone unceasingly during the year. Posters have been displayed in Post Offices throughout the year and a large hoarding depicting a patient receiving a transfusion was erected in Maxwell Road. A stall was maintained at the annual "Safety First Week" Exhibition.

552. The two films made by the Malayan Film Unit entitled "Life Saver" and "Singapore Blood Transfusion Service" have been widely shown.

553. Film shows and talks were given by the Medical Officer of the Service to the teachers and older pupils in all English Language Secondary Schools.

554. Frequent press reports and appeals and radio appeals have helped to keep the needs of the Service before the general public during the year. One cinema offered free tickets to Blood donors during limited period and this met with some success. The generous assistance of commercial houses who provided refreshments for donors is gratefully acknowledged.

CHAPTER TWENTY-SIX

PHARMACEUTICAL SERVICE

Staff

555. The staff of the Pharmaceutical Service is given in Table 152. Mr. D. E. Lovett, B.PHARM., F.P.S., Superintending Pharmaceutical Chemist, was in charge of the Service.

556. During the year Mr. S. K. Lingam, PH.C., DIP.PHARM., returned from study leave and has been appointed a Pharmaceutical Chemist; 4 Pharmacists and 14 Dispensing Assistants were appointed on probation.

TABLE 152

STAFF OF THE PHARMACEUTICAL SERVICE

		<i>Pharma- ceutical Chemist</i>	<i>Pharma- cists</i>	<i>Pupil Pharma- cists</i>	<i>Dispensing Assistants</i>
Medical Headquarters ...	—	1	—	—	
Government Medical Store	2	2	—	8	
General Hospital ...	—	6	3	18	
Kandang Kerbau Hospital ...	—	2	—	4	
Tan Tock Seng's Hospital ...	—	1	—	4	
Woodbridge Hospital ...	—	1	—	—	
Middle Road Hospital ...	—	1	—	1	
Total ...	2	14	3	35*	

* This figure includes Hospital Assistants trained in dispensing and working as dispensers.

557. Arrangements have been made for a lecture and practical training course for the newly recruited Dispensing Assistants and a second batch will be recruited early next year. It is very necessary to have a reserve of dispensers available for the anticipated expansion of the service.

Legal Administration

558. The Medicines (Advertisement and Sales) Ordinance, 1955 came into force on 26th June, 1956. This Ordinance follows fairly closely the provisions of sections 8-11 of the Pharmacy and Medicines Act, 1941 of the United Kingdom and enforcement of the sections relating to advertisements in connection with tuberculosis, diabetes, leprosy, etc. has been undertaken this year. The sections of the Ordinance concerning labelling medicines with a declaration of formula are in general being complied with satisfactorily. Much work was done under this Ordinance advising those in the pharmaceutical trade on the applications of this Ordinance, especially those dealing in Chinese and Ayurvedic (Indian) medicines. Two cases are under investigation for offences under the Ordinance; one for the advertising of 'diabetes' in a newspaper and another for 'cancer pills' in leaflets for distribution.

559. Inspections of premises licensed to sell poisons and dangerous drugs were carried out as in previous years and some 20 prosecutions for contraventions of Poisons Law, mainly of a minor nature, were effected.

560. One pharmacist is employed in the staff of the Medical Headquarters as an Inspector of Dangerous Drugs and Poisons. This officer reports that records relating to the sale of poisons by wholesale and retail were checked during the year. More attention was given to those selling proprietary preparations not classified as poisons. Four cases were prosecuted for offences under the Poisons Ordinance.

561. Closer liaison was maintained with the Commercial Crimes Sub-branch. Two cases were investigated for 'practising as a medical practitioner' of which one was prosecuted after a raid and fined \$500 (inclusive of fines for selling a poison).

Routine Work

562. At the General Hospital Dispensary the building of hospital extensions and general expansion of the facilities necessitated a reorganisation of the internal supplies of drugs and pharmaceuticals and a new system for delivery of daily supplies to wards, theatres and units was arranged and successfully introduced. The total number of out-patient prescriptions dispensed was slightly under 400,000 as against 325,000 in 1955; the daily average in the last 3 months of the year was 1,500 as against 1,150 in the previous year. Both of these comparisons indicate an increase of about 25 per cent in the supplies of medicines to out-patients during the year. Some indication of the volume of medical supplies handled by this dispensary may be gained from the fact that 11,500 gallons of stock mixtures and lotions were prepared and figures for medicines used include: Penicillin and Procain Penicillin (both over 100,000 mega-units) multivitamin tablets (6 million); sulphonamide tablets (1 million); antihistamine tablets ($\frac{1}{2}$ million); lysol (1,000 gallons). Correspondingly large quantities of transfusion fluids, ointments and creams and other pharmaceuticals were made. One student pharmacist completed his pupillage and two new pupil pharmacists were appointed to the staff of this hospital dispensary during the year.

563. A second pharmacist joined the staff of the Kandang Kerbau Hospital during the year making a total of 2 pharmacists and 4 assistants in this dispensary which was newly occupied the previous year. These new premises are modern, well arranged and easily run. All the staff take part in a roster arrangement for night calls which average about 7 per month. The hospital has about 30 wards and units requiring daily issues of drugs and pharmaceuticals and the out-patient attendances have increased greatly since the extensions to the hospital were opened. They now number about 680 daily, over 200,000 prescriptions being filled during the year.

564. The Tan Tock Seng's Hospital Dispensary has approximately the same turnover as Kandang Kerbau Hospital in respect of ward supplies and numbers of out-patient prescriptions, but at present has only one pharmacist. The main dispensary is small and very old and plans for extensions to the hospital envisage a new pharmacy block. Some minor alterations to the dispensary were carried out during the year and the drugs store was extended.

565. The alterations to Middle Road Hospital this year included construction of a new and greatly extended dispensary to provide three serving hatches for out-patient supplies. In view of the increased work of the dispensary following treatment of general out-patients at this hospital, a pharmacist was appointed for this hospital and as the new facilities are suitable it is being used on afternoons when there is no clinic for practical training of probationer dispensing assistants.

GOVERNMENT MEDICAL STORE



Health Education Officer, Singapore

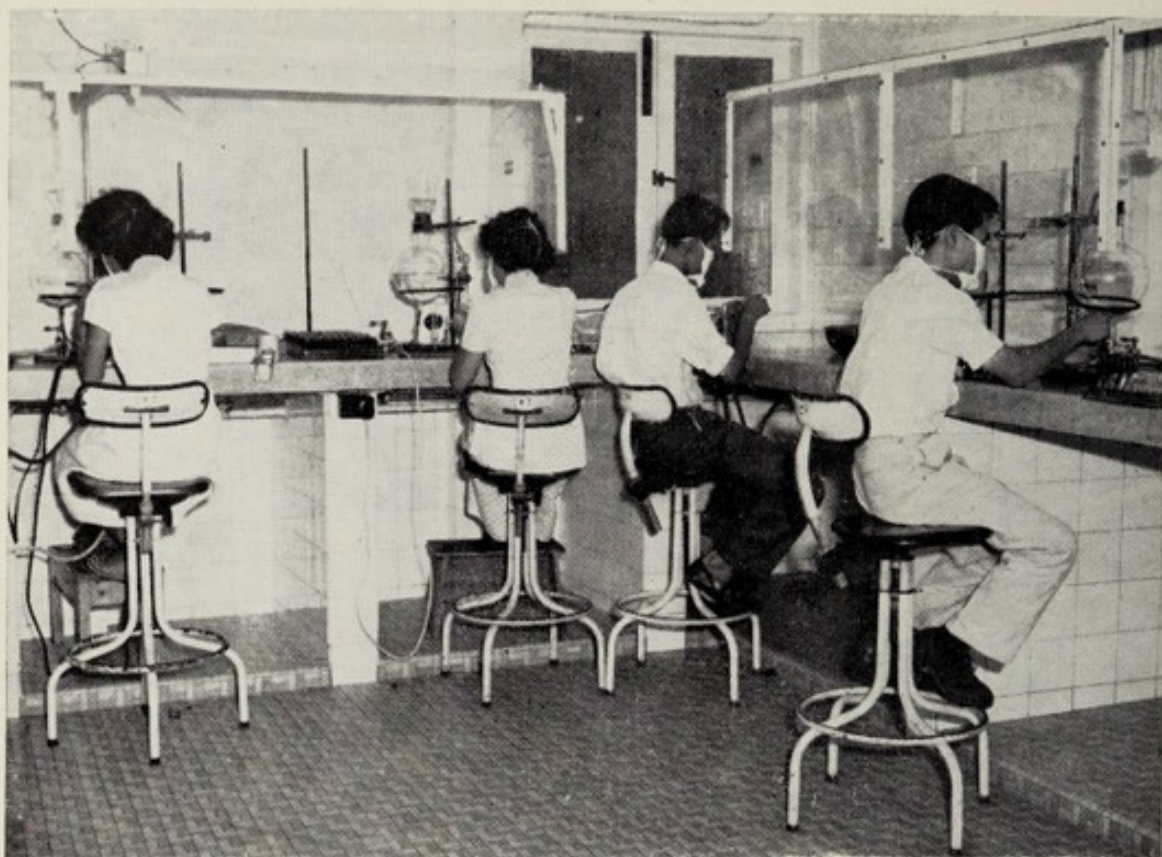
Manufacture of an Emulsion in the "Wets" Laboratory



Health Education Officer, Singapore

Rotary Tablet-making Machine

GOVERNMENT MEDICAL STORE



Health Education Officer, Singapore

Manufacture of ampoules



Health Education Officer, Singapore

Large modern store with steel shelves in the new extension completed in 1956

Finance

566. The total expenditure on drugs and pharmaceuticals in all hospitals, clinics, School Health and Maternal and Child Health Clinics and Out-patient Dispensaries was \$1,438,000. Approximately 51 per cent of this total is derived from expenditure on a few major items shown in Table 153.

TABLE 153

MAIN ITEMS OF EXPENDITURE ON DRUGS AND PHARMACEUTICALS

	Quantity	Value	Cost 1956	Cost 1955
		\$	\$	\$
ANTIBIOTICS:				
Penicillin	147,272 M.U.	26,500		
Procaïn Penicillin	182,674 M.U.	29,200		
Streptomycin Salts	279,000 Grms.	85,900		
Tetracyclines	35,300 Grms.	109,900		
Chloramphenicol	16,800 Grms.	9,100	260,600	181,000
Sod. Aminosalicylate and Isoniazid			215,900	94,000
VITAMINS:				
Aneurin	132 Kilos	23,400		
Riboflavine	34 "	6,200		
Nicotinamide	243 "	6,700		
Ascorbic Acid	92 "	2,400		
Vit. B.12	10 Grms.	7,200		
Vit. A. and D. Pyridoxine and others		3,900	49,800	60,400
Cortisone, Hydrocortisone and Prednisolone			59,900	40,700
Sulphonamides	1,554 Kilos		31,600	34,500
Insulins (Plain, Protomin Zinc and Lente)			29,800	27,400
Alcohol B.P. and Industrial	10,230 Gals.		20,900	17,100
Cod Liver Oil	3,600 "		16,800	16,900
Intramuscular Iron Injection	49,600 "		51,400	13,400
			736,700	485,400

567. The total cost of Antibiotics used is slightly over a quarter million dollars and represents 18 per cent of the total expenditure on all drugs and pharmaceuticals; this may be regarded as a reasonable proportion. The proportion was 16 per cent in 1955 and 25 per cent in 1954, but the fall in the previous year was due to reductions in prices of penicillin and streptomycin which appeared by the end of 1955 to have reached the ultimate low level to which mass-production and keen commercial competition could bring them.

568. Oral penicillin in the form of phenoxymethyl penicillin tablets was newly introduced during the year and accounted for expenditure of only \$6,300. It is anticipated that there will be an appreciable use of this drug for out-patient treatments next year. The total expenditure on the three tuberculostatic drugs was about \$300,000; this is double the expenditure in 1955 and reflects the increased treatments carried on at Tan Tock Seng's Hospital. It is however a very modest sum when compared with the number of patients treated at that hospital. The tetracyclin group of broad spectrum antibiotics remain relatively expensive; there were no price reductions during the year. The total costs of vitamins used in preparing tablets and injections was less than that in 1955 despite the fact that much larger amounts were used; this is primarily the result of a reduction in the price of Aneurin.

569. A 50 per cent increase in expenditure on corticosteroids is largely explained by greatly increased prescribing of prednisolone tablets, mainly at the General Hospital. There has also been a big increase in the use of hydrocortisone creams which are made locally now in batches of 500 or 1,000 tubes. These are produced at about a quarter of the price of proprietary brands effecting an appreciable saving. Expenditure on intramuscular iron injections jumped from \$13,000 to \$51,000 as a result of the administration of nearly 50,000 ampoules, mainly in Maternity and Child Health Centres. The cost of these injections now exceeds the total expenditure on vitamins, but their effect in correcting severe anæmias, combined with the ease of administration, justifies an appreciable proportion of the drug bill since such large numbers of anæmia cases are encountered. Expenditure on the various forms of insulin remained constant but the position will undergo a change next year with the introduction of oral antidiabetic treatments.

570. At the Government Medical Store an increase in the work of both the stores section and the pharmaceutical laboratories is given in the summaries below:—

<i>Stores Section</i>		<i>Laboratory Section</i>	
Number of orders for supplies to hospital, clinics, etc., in 1956	6,315	Number of Works Tickets completed by Laboratory	1,980
Total value of drugs, chemicals, etc., distributed	\$ 1,437,975	Net value of materials used in manufacture of pharmaceuticals	\$325,053
Total value of surgical equipment, dressings and sundries distributed	799,667		
Total	\$2,237,642		

TURNOVER FOR PAST 9 YEARS
(Total value of stores supplied)

	\$
1948	623,881
1949	1,032,564
1950	1,139,701
1951	1,184,485
1952	1,448,831
1953	1,629,474
1954	1,503,867
1955	1,904,842
1956	2,237,642

PRODUCTION FOR PAST 9 YEARS
(Net value of materials used)

	\$
1948	47,805
1949	92,864
1950	107,438
1951	87,646
1952	176,412
1953	196,792
1954	249,333
1955	269,509
1956	325,053

571. It is difficult to obtain a simple comparison between the pharmaceutical manufacturing work carried out from year to year except by reference to the actual finished products supplied by the laboratories to the stores section, which appear in Table 154. The number of 'work tickets' or 'job-cards' completed is usually about 2,000 each year, but as the hospitals requirements increase the batches made on a laboratory job are increased, e.g. from 2,000 ampoules to 10,000 and one million tablets to four million. The figure quoted above for the value of crude drugs, chemicals, containers and other raw materials used in the production of pharmaceuticals, gives a reasonable guide as the average prices of these do not fluctuate appreciably.

General Expansion

572. Extensions to the pharmaceutical laboratories were completed during the year. These have provided a new annexe to the tablet manufacturing section which is air-conditioned and will ultimately house the present two rotary machines, a machine for coating bitter-tasting tablets by compression, which is on order and expected shortly; and later on a third rotary tablet punching machine. The other room built on the ground floor is for a new unit manufacturing sterile transfusion fluids in bulk. A batch production of 300 bottles once daily has been instituted initially preparing sterile normal saline and 5 per cent dextrose on alternate days, and there is capacity to expand to 600 bottles per day. A further extension to the ampoule preparation section was commenced at the end of the year and this, together with the construction of a new boiler house with space for two large autoclaves, next year will complete the present expansion of the laboratories.

573. The policy of the department is to staff the hospitals and dispensaries with qualified pharmacists and trained dispensing assistants to carry out all the general pharmaceutical work. At the same time the production of tablets, standard injections, emulsions, ointments packed in tubes, and similar products is done centrally in the laboratories at the Government Medical Store. This policy ensures that these standard pharmaceutical preparations, manufacture of which can be carried out most satisfactorily by use of machine or special equipment, are made in the most economical way. Factory methods of batch production and packing are used in the laboratories and unskilled labour is employed supervised by qualified pharmacists and a trained tablet-maker.

574. A machine for heat-sealing of polythene bags, a granule blending machine and equipment for pumping and filtration of medicine syrups and other liquids were received during the year and have assisted in raising the efficiency of the production and packing methods used. Further manufacturing equipment has been ordered with the same object in view and next year will see the introduction of an ampoule filling and sealing machine, ampoule rinsing machine, granulator, tablet coating machine, new steam still and other items of equipment for pharmaceutical manufacturing.

Manufactures

575. The laboratories completed an appreciably increased manufacturing programme, the production of ampoules rose by 75 per cent and exceeded half a million for the year. Tablet production again increased and the output of 45 million tablets is a worthy achievement for a small organisation. The production of pint bottles of fluids for transfusion rose to 37,000 bottles following the opening later in the year of the new unit for preparing these in bulk. A comparison is given in Table 154 of the 1956 production figures in the pharmaceutical laboratory with the figures for the four years since the construction of the present premises in 1951.

TABLE 154

PRODUCTION IN THE GOVERNMENT MEDICAL STORE, 1952-56

	1952	1953	1954	1955	1956
Tablets (millions)	6.7	16.2	23.2	39.4	45.6
Ampoules	43,600	103,100	150,400	324,400	563,700
Multidose Inj. Vials	38,200	39,800	72,900	73,900	29,400
Sterile Transfusion Fluids (pint bottles)	8,300	7,100	12,500	18,500	37,500
Eyedrop/Eardrop Vials	—	—	—	—	13,600
Tinctures, Infusions, Extracts (gallons)	785	717	845	1,625	2,250
Emulsions (gallons)	278	301	341	590	476
Mixtures, Lotions, Liniments (gallons)	3,200	2,600	4,100	14,700	8,900
Antiseptic Fluids (gallons)	—	—	—	—	4,740
Linctus and Syrups (gallons)	1,580	2,390	3,330	1,260	1,360
Ointments and Creams (lbs.)	3,200	4,100	5,800	8,600	7,700
Ointments and Creams in tubes	—	—	—	9,500	20,100
Laboratory Reagent Solutions (litres)	404	448	554	880	436
Suppositories and Pessaries	3,400	3,800	6,300	19,900	18,900

576. In relation to this relatively large turnover of pharmaceutical products, the expenditure on general maintenance of the manufacturing laboratory was only \$4,900; on City Services and other overhead costs approximately \$9,860, and staff salaries \$97,000. The value of raw materials converted into manufacturing products, i.e. the nett cost, was slightly over \$325,000, and a very conservative estimate of the cost of purchased pharmaceuticals is an average of 50 per cent above the nett cost of locally manufactured preparations. On this basis, the saving during the year after deduction of the overhead charges indicated above amounts to a relatively large sum. All the products of these laboratories are batch tested for sterility by the Department of Pathology and for purity or content of active drug by the Department of Chemistry. This department has also assisted from time to time in devising methods of formulation and similar experimental work and their co-operation is greatly appreciated.

577. In the stores section of the Government Medical Store the opening of new clinics and departments caused a 15 per cent increase in the number of orders handled and the value of all medical supplies issued was 17½ per cent above the figure for 1955. Normal pharmaceutical requirements were indented quarterly and put out to tender from London by the Crown Agents whose comprehensive records of manufactures and bulk buying discounts ensure the most advantageous purchase prices. A few selected items were put out to tender locally and X-ray film, medical gases, and plaster of paris bandages were purchased on contract from local firms.

Imports and Supplies to Non-Government Institutions

578. A new godown was completed during the year and after fitting out with metal shelving it was occupied by the Surgical Issues Section which had a year's turnover of \$800,000 value of goods issued. Of this total \$167,000 comprised linen, bedding, patients clothing, drill and calico for staff uniforms, furnishing fabrics and other materials. Also included are Catgut Sutures to the value of \$45,000 and surgical dressings, bandages, cotton wool, gauze, etc. valued \$146,000. The work of the imports section is given by the statistics in Table 155.

TABLE 155

SUMMARY OF WORK OF IMPORTS SECTION, 1954-56

	1954	1955	1956
Number of Bills of Lading exchanged	657	891	834
Number of crates and parcels received—			
(a) per sea	3,475	5,219	5,005
(b) per post, air and rail	1,010	1,674	1,519
Number of crates and parcels despatched—			
(a) per sea	28	60	80
(b) per post, air and rail	—	96	88
Number of claims on shippers or suppliers	49	87	94

579. As in previous years, supplies were made to the University of Malaya, S.A.T.A. and various charitable institutions. Urgent requests, usually for special injections from the Military and R.A.F. Hospitals were catered for, and Dangerous Drugs were supplied to private pharmacies. Occasional supplies were also sent to the Sarawak Medical Department and some ampoules and tablets were supplied to the Federation Medical Department. The Government Medical Stores at Kuala Lumpur and Penang also supplied this department with drugs and pharmaceuticals on occasion when stocks were exhausted due to unusual demands and their assistance is greatly appreciated.

Stocks in Hand

580. The value of stores in stock at the Government Medical Store at the end of the year was \$1,220,628 and the value of stores written off during the year \$11,974. In relation to the figures for the year's turnover, these represent a stock holding of 55 per cent of the value of the turnover and annual write-off of half per cent of the turnover. In view of the fact that it is essential to keep 'dead stocks' of a number of items in case of emergency, these stocks figures can be considered very satisfactory.

Purchases through Crown Agents

581. A high proportion of the Crown Agents Indents for hospital supplies are charged direct to the hospital vote although the documenting of orders, importing and checking are handled by the Government Medical Store. The total value of these orders was \$606,040. The value of orders placed through the Crown Agents for stores purchased through the Government Medical Store buying account and other financial statistics relating to the year's turnover in this account are given in Table 156.

TABLE 156

FINANCIAL STATISTICS FOR THE GOVERNMENT MEDICAL STORES ACCOUNT, 1956

	\$
UNALLOCATED STORES PURCHASES ACCOUNT	
(1) Value of orders placed through Crown Agents ...	1,924,788
(2) Value of stores purchased locally ...	546,468
(3) Value of stores purchased from other countries ...	16,012
UNALLOCATED STORES RECOVERIES ACCOUNT	
(1) Total cost of stores billed ...	1,887,264
(2) Total bills outstanding ...	1,334
(3) Payment to U.S. Recoveries Accounts:	
(i) by adjustments ...	1,758,941
(ii) by cash ...	180,112
(4) Payments to revenue ...	132,446
(5) Surcharge 10% on sales to non-Government Institutions ...	4,187

CHAPTER TWENTY-SEVEN

OTHER SPECIAL DEPARTMENTS

PRISON HOSPITALS

H. M. Prison, Changi

582. The work of the Changi Prison Hospital, the Changi Camp and Staff Families' Clinic was carried on by a part-time Medical Officer, three Hospital Assistants and three Prisoner Orderlies.

583. The Medical Officer visited the Prison every morning and was on 24-hour call for emergency cases. Rounds of the prison and Camp were made weekly. During these he inspected the sanitation of the prison and the general health of prisoners. In addition to these, the Medical Officer examined and treated members of the prison staff and their families and made house visits wherever necessary. 3,384 cases were seen and treated, compared with 3,108 in 1955.

584. The Hospital Assistants made two daily rounds of the Prison and Camp, treated minor cases, inspected food and assisted the Medical Officer at the Clinics. One Hospital Assistant was always on 24-hour call.

585. A high standard of health and sanitation was maintained throughout the year. The daily average number of offenders in the Prison and Camp was 434. The number of patients admitted to the Prison Hospital was 277, compared with 265 in 1955, and the daily average number of patients in hospital was 12. A total of 13 tuberculosis patients was treated; of these 4 remain. The majority of these patients were quiescent or healed cases and required little treatment other than rest and nourishing food.

586. There was no death in the prison during the year 1956. The number of out-patients treated at the Prison Hospital and Camp Clinic was 48,045 as against 44,781 the previous year. The daily average number was 131. The principal diseases were Upper Respiratory Infections, fevers, diarrhoea and skin diseases. Only minor operations were performed at the theatre in the Prison; the total number of these was 45.

587. The diet was adequate and nutritious. Inspections were made regularly of the raw and cooked food. Rations unfit for human consumption or poor in quality were rejected. Special rations of eggs, milk and butter were given to hospital patients especially those with Pulmonary Tuberculosis.

H. M. Prisons Pearl's Hill

588. The staff consisted of 1 Medical Officer and 4 Hospital Assistants. Prisoner Orderlies were recruited when available to give help.

589. The Hospital is located within the Prison and comprises—

(1) The Hospital Proper, an old two-storied building with accommodation for 80 beds distributed as follows:—

Ward A	...	...	24 beds
Ward B	...	...	24 beds
Ward C	...	...	8 beds
Ward D	...	...	8 beds
Ward E	...	...	16 beds
Total	...	...	<hr/>80 beds <hr/>

- (2) The former Leprosy ward, a separate building with accommodation for 16 beds.
- (3) The Isolation ward, another separate building with accommodation for 4 beds.

590. During the latter part of the year prisoners suffering from leprosy were transferred to Changi, and the building itself was to be reconditioned. As the Isolation Ward is used only for infectious diseases, the effective bed strength is 80 beds.

591. Since the establishment of the Opium Treatment Centres in February 1955 all persons remanded under the Dangerous Drugs (Temporary Provisions) Ordinance 1954 have had to be admitted to hospital to undergo examination and treatment for opium addiction. Thus, in addition to serving the normal needs of the Prison, the staff have had to provide medical care for this new category of patients.

592. In 1954 there were 693 admissions into hospital; in 1955, 1,588 admissions and this year 1,667 admissions. The standard of health of the prisoners was good throughout the year. Food inspection was carried out daily, and the diet of the prisoners was satisfactory. There were 218 patients suffering from tuberculosis.

593. One ward of 24 beds is entirely given over to tuberculosis patients and this proved quite inadequate, and extra beds have had to be placed in the ward. For the 80-bed hospital the average daily number of patients was 120.7.

594. There was one case of chicken-pox and one case of mumps. There were 4 cases of leprosy; they were at first housed in the Leprosy Ward and later transferred to Changi.

595. *Opium Addicts.* In the Prison Hospital there were 1,081 admissions for opium addiction out of a total of 1,667 admissions—this makes 64.8 per cent. Out of the 1,081 admissions, 890 admissions were of those remanded, under the Dangerous Drugs (Temporary Provisions) Ordinance, 1954; these were examined and treated for opium addiction and reports submitted to the Magistrate's Court on the suitability or otherwise for admission to the Rehabilitation Centre at St. John's Island. Since the institution of the Opium Treatment Centre in February 1955, this Prison Hospital has been used for the treatment of all opium addicts remanded. The Medical Officer in charge, H.M. Local Prison is also the Medical Officer, Opium Treatment Centres.

596. *Deaths.* There was one death in the Prison Hospital, the cause of death being cerebral hæmorrhage. One prisoner died in the Prison Compound, the cause of death being cardiac beriberi. Three executions were carried out during the year.

597. *Immunisation.* Vaccination against small-pox was done on all comers to Prison, and totalled 5,610 for the year. 41 inoculations against cholera were given.

598. *Out-patients.* The total number of out-patients treated was 19,076; of these 4,960 were new cases and 14,116 were repeat cases.

OPIUM TREATMENT CENTRE, SINGAPORE

599. Before the war in Malaya in 1941 the use and sale of opium was controlled as a Government Monopoly. An addict, having been examined by a Medical Officer and duly certified, was registered and then permitted to purchase an allowance of opium from a Government shop. It was the policy of the Monopoly to bring about a gradual reduction in the consumption of opium by addicts in accordance of the Resolutions of the Hague Convention, 1912, the Geneva Agreement, 1925, the recommendations of the League of Nations Commission to the Straits Settlements in 1929 and the Bangkok Conference of 1931. The registers were finally closed, except for medical cases, on 31st December, 1934. In 1927 sales of opium through the Monopoly totalled 30,000 lbs. By 1935 they were reduced to 19,000 lbs. and by 1938 to 15,000 lbs. At the time of the Japanese invasion in 1942 there were 16,552 addicts on the Singapore registers, while in the Federation of Malaya the figure was probably quadrupled. During the Japanese occupation of this country from 1942 to 1945 the registers were ignored and anyone who could pay for it was allowed to smoke. The campaign since 1925 to promote gradual reduction of opium consumption was thus largely nullified and as opium addiction was openly encouraged the number of smokers extant today can only be conjectured.

600. From the liberation of Singapore in September 1945 no opium was purchased or sold by the Government of Singapore and all shops were closed. In February 1946 an Opium and Chandu Proclamation declared a total prohibition of the sale and use of the opium except for medical purposes. In 1951 this Proclamation was superseded by the Dangerous Drugs Ordinance prohibiting the import, export, possession, manufacture or sale of opium. Any person contravening these provisions was liable to a fine not exceeding \$10,000 or imprisonment for a period not exceeding five years or both. The use of premises, the possession of utensils for the administration of opium and the consumption of prepared opium were also punishable under the law. The Customs and Police Departments were responsible for the enforcement of these provisions, the former being organised the better to prevent the import of opium by sea, air or land while the Police dealt with internal peddling and endeavoured to suppress the opium dens. The Customs Department also operated on behalf of enforcement authorities in the Malayan Area, a Central Narcotics Intelligence Bureau for the dissemination and exchange of information on the traffic.

601. It was noted that many addicts, imprisoned for opium or other offences, showed a marked improvement in health as a result of prison routine, diet and treatment for their physical ailments, and it was decided that as an experiment a special Penal institution for the treatment of addicts should be opened. Part of the Quarantine Station on St. John's Island was selected for the purpose because it offered a complete change of surroundings and living conditions and, as traffic to and from the Island is controlled, a reasonable prospect of denying opium to the inmates.

602. The necessary legislation for the Opium Treatment Centre was enacted under the Dangerous Drugs (Temporary Provisions) Ordinance, 1954 which, *inter alia*, provides for the establishment of Opium Treatment Centres, the appointment of officers and the setting up of an Advisory Committee. The main Centre on St. John's Island was opened in February 1955 for the treatment of male addicts. At the same time "C" Hall, the Female Prison and the hospital in the local prisons on Singapore Island were gazetted as Opium Treatment Centres since addicts were kept there.

603. The Advisory Committee is an important link in this whole experiment. The offender, while on remand, is checked with a view to finding out the possibilities of rehabilitation. The reports of the Medical and Rehabilitation Officers are laid before the Advisory Committee consisting of the Superintendent and Medical Officer of the Opium Treatment Centre and a Rehabilitation Officer. If it is considered that the offenders would benefit by admission to the Centre, the Committee makes a recommendation accordingly to the Magistrate, who, if he concurs, orders the addict's detention in the Centre for an undetermined period not exceeding 12 months. Otherwise the offender is sentenced to 3 months imprisonment.

604. The Advisory Committee considers a person's suitability for treatment from the following aspects:—

- (1) Age limit—50 years in general, but many cases are accepted up to the age of 55.
- (2) Disease—Active cases of organic disease, etc. are not accepted.
- (3) General Physical Condition—Chronic debility and extreme emaciation may be causes of rejection.
- (4) Length of Addiction—Preference is given to more recent addicts.
- (5) Environment—If addict is socially or thoroughly an undesirable character, he may be rejected for treatment.

605. The Opium Treatment Centre at St. John's Island has accommodation for the following:—

- Carpenter Workshop
- Tailor Workshop and Laundry
- Rattan Workshop
- Hospital
- Office and Store
- Attendants' Barracks.
- Accommodation for inmates.

606. On admission after withdrawal treatment which is completed usually within 3 weeks in the Remand Prison in Singapore, the addict is interviewed by the Superintendent and provided with clothing, bedding, etc., all his personal belongings being taken from him. He is seen by a Medical Officer either on admission or the following morning. He is admitted to the sick bay where he is detained for a minimum period of a week and given extra diet. At the end of the week he is seen again by the Medical Officer and if found fit for light duty, is given a choice of acquiring knowledge and skill in several different trades including carpentry, tailoring, rattan work, cooking, gardening and laundering.

607. While in the Centre, the addicts are given the usual prison diet plus an extra 4 ozs. of rice or wheat. If it is considered that any inmate should have additional diet such as eggs or milk, he is readmitted to the sick bay.

608. Though the addict is sentenced, as a rule, to be detained for a period of twelve months, it has been found that most of the inmates are fit to be released after a period of from six to seven months; and it has been noted that at the end of this period most of them realise that the addiction has gone. The Rehabilitation Officer ensures that they have employment waiting for them on release. Subsequent follow-up has shown that in the case of skilled labourers the majority stay in the employment which has been secured for them and though the general trend is for unskilled labour to remain in employment many change their jobs. However, the limited statistics to date do not permit any firm conclusions.

609. At the outset it was considered that probably fifty per cent of the addicts appearing before the Advisory Committee might be found suitable for admission to the Centre. The details regarding addicts remanded for investigation is given in Table 157.

610. So far 396 males and 16 females have been released on licence, and the Rehabilitation Officers visit them regularly. There have been 6 known cases of relapse among the males, but the period is as yet too short for any conclusion to be drawn. The number of those who may have relapsed but are not known is difficult to determine.

611. The follow up of the released addict provides a problem. All the addicts after a period of about 3 months or so are referred to the Medical Officer for a check-up. It is not easy to diagnose a relapse. In most cases, however, addicts were able to keep away from the drug for a varying period of time; relapses, if they do occur, generally come after a period of a few months, by which time the licence has expired and post-addicts are no longer obliged to attend for check-up. However, a number of patients do present themselves, long before their turn is due, seeking medical advice on minor complaints and in some cases for help in the matter of finding work. A few have brought their personal and family problems to the doctor and there have been a few who brought their addict companions for help or for admission as volunteers to the Centre.

612. From the inception of this rehabilitative centre up to the end of 1956 a total of 425 patients have undergone rehabilitation and have been discharged. Out of all these, six persons were arrested a second time on a charge of possession of prepared opium or of possession of opium smoking utensils. This does not mean that only 6 out of the 425 had relapsed into opium addiction; neither does it justify the conclusion that all the rest, i.e. 419 persons, have not relapsed. At the present time it is not possible to make any exact estimate of the number who, having undergone treatment, have completely freed themselves from addiction.

613. It has now been decided under section 1 (2) of the Dangerous Drugs (Temporary Provisions) Ordinance (Cap. 138) to extend the operation of the Ordinance until the 8th February, 1958. This will mean that the Centre will run at least for another year.

614. The approximate cost of an accommodation hut for 40 persons is \$25,000 and, as at present there are 12 such huts at the Centre; the estimated cost of accommodation blocks is \$300,000.

TABLE 157

OPIUM TREATMENT CENTRE, ST. JOHN'S ISLAND—STATISTICS

	Males	Females
1. TOTAL ADMISSIONS FROM 1ST FEBRUARY, 1955 TO DECEMBER 1956	658	22
<i>Age Groups:</i>		
20—25	8	1
26—30	31	3
31—35	64	3
36—40	124	3
41—45	150	9
46—50	154	1
51—55	94	2
56—60	20	—
61 and over	6	—
Number of Volunteers	12	2
Highest number held on any one day	229	—
Daily average at Opium Treatment Centre	165	—
Daily average at O.T. Centre Hospital	13	—
Released on Licence at Opium Treatment Centre	396	—
Released on Licences (Females)	—	16
Number of Volunteers completed rehabilitation term	12	1
Died at Opium Treatment Centre	1	—
Died at General Hospital	1	—
2. CASES INTERVIEWED BY THE ADVISORY COMMITTEE* FROM 1ST FEBRUARY, 1955 TO DECEMBER 1956:		
Total number of cases interviewed (including volunteers)	1,756	76
Total cases rejected	1,111	51
Rejected on account of age and general condition	529	7
Rejected on account of disease	501	21
Rejected on account of character and past history	81	23
3. WEIGHTS:		
Total average gain at end of 1st month	6 lbs.	5 lbs.
Total average gain on release	13 lbs.	—

*Note:—

In 1955 28% of those interviewed by the Advisory Committee Meeting were selected.

In 1956 47% of those interviewed by the Advisory Committee Meeting were selected.

POLICE HOSPITAL

615. The staff of the Police Hospital consists of a part-time Medical Officer, a Hospital Assistant, five Hospital Attendants and a Police Orderly. It provided medical attention to the rank and file and only cases requiring urgent treatment and extensive medical and surgical care are referred to the General Hospital.

616. 8,812 cases were seen during the year, 6,089 of these being repeat cases and 2,723 new cases; 477 were admitted to the Hospital; 371 new recruits were examined for assessment of medical fitness to service, only 253 were found fit.

617. The three most common ailments met with were coryza, conjunctivitis and skin infections, particularly fungal infection of the toes. There were 48 cases of mumps and measles; 14 new cases of pulmonary tuberculosis were seen during the year, compared with 10 in the previous year.

POLICE FAMILIES' CLINIC

618. A Lady Medical Officer was in charge of the families of the rank and file of the Police Force and of the Women Police Force.

619. The general health among this group was satisfactory. Health education and persuasion has made considerable headway and many are willing to be admitted to hospital for treatment when required. More children are being voluntarily brought for immunisation by their mothers.

620. The Lady Medical Officer visits and holds clinics at 37 centres, mainly Police Stations and Barracks attached to special units.

TABLE 158

SUMMARY OF WORK DONE AT POLICE FAMILIES CLINIC, 1956

New cases	...	...	...	3,001
Repeat cases	...	...	...	18,861
Diphtheria Immunisation	...	...	...	744
Total attendances	...	...	...	22,606

SOCIAL WELFARE INSTITUTIONS AND CENTRES

621. Provision of medical care in the Social Welfare Department was slow and irregular. Since the formation of the Department in 1946 until 1951 the medical service provided was of a voluntary nature by public spirited medical practitioners. Unfortunately such service was confined to certain institutions and by its very nature incomplete and inadequate.

622. In June 1952 a part-time Medical Practitioner was appointed and he visited the Homes and Institutions on a schedule. By the middle of 1954 it was felt that this part-time service was inadequate in that it did not provide sufficiently comprehensive general therapeutic and preventive service; there was also no administrative control over medical staff and medical work in institutions and centres. In May 1955 another Medical Officer was appointed on a part-time basis. There have been since then 2 part-time medical officers in the Social Welfare Department.

623. One part-time Medical Officer is responsible for all homes and institutions and the other medical officer is responsible for children's social centres. The institutions and centres cared for are given below:

PART-TIME MEDICAL OFFICER, HOMES	PART-TIME MEDICAL OFFICER, CENTRES
Gimson School for Boys.	Children's Social Centres at:—
Perak House.	Government House.
Girls' Home, Mount Emily.	Sims Avenue (2 centres).
Girls' Homecraft Centre, York Hill.	Bukit Panjang.
Children's Home, New Market Road.	Jalan Eunus.
Nantina Home.	Tessensohn Road.
Bushey Park Home.	Mount Erskine.
Prince Edward Road Hostel.	Clyde Terrace.
Queen Street Hostel.	Pasir Panjang.
	Upper Serangoon.
	Siglap.
	Joo Chiat.
	Havelock Road.
	Prinsep Road.
	Keppel Harbour.
	Victoria Street Creche.
	Havelock Road Creche.

CIVIL MEDICAL DEFENCE

624. The Singapore Hospital Reserve came into being four years ago under the terms of the Civil Defence (Singapore Hospital Reserve—Formation) Rules of August 1952. The object of this Corps is to provide trained personnel who, in time of war or any major emergency, would reinforce the nursing and hospital staff.

625. Men and women enrolled are all volunteers prepared to undergo, during peace, part-time training in the wards of the General Hospital and, from time to time, join in exercises co-operating with other Civil Defence services. Before a Nursing Auxiliary is permitted to enrol and carry out any hospital duties he or she must first be in possession of a Home Nursing Certificate and a First Aid Certificate of the St. John Ambulance Association or the Red Cross Society.

626. The Singapore Hospital Reserve is under the control of the Director of Medical Services, and is administered by the Civil Defence Commissioner.

Personnel

627. At the beginning of the year the strength of the Hospital Reserve was 826; this was made up of 592 Nursing Auxiliaries and 234 in the General Duties section. During the year 58 resigned and 119 were enrolled. At the end of 1956 the strength was 887 (671 Nursing Auxiliaries and 216 for General Duties).

Training

628. The training of the Nursing Auxiliary is in two phases. During the first phase he is required to attend a minimum of 25 four-hour sessions (once a week) in different wards of the General Hospital under the control of

Sisters in charge of wards. Then the Auxiliary receives 24 periods of instruction (in any language desired) in elementary nursing at the Civil Defence Training School; at the conclusion of this training the student is examined by the staff of the Nurses' Training School. If successful the Auxiliary is awarded a "B" Badge, to be worn on the Corps uniform, and is permitted to begin the second phase of the training.

629. During the second phase the Auxiliary is required to attend a further 12 to 16 four-hour sessions in more advanced duties at the General Hospital, followed by a second course of instruction; the examination for the "A" Badge concludes this phase of training.

630. The Auxiliary who has done 200 hours of training and successfully passed the two examinations is a trained Hospital Reservist, ready to take his or her place in ward or theatre as assistant to the regular nursing staff.

631. Nursing Auxiliaries attended Hospital training for 14,860 man-hours at the General Hospital during 1956.

APPENDICES

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APPENDIX I
FINANCIAL STATEMENT FOR THE YEAR 1956

(a) RECEIPTS

Hospital Fees, etc. \$1,196,409.45
Medical General and Health \$444,451.08
Total \$1,640,860.53

(b) PAYMENTS

	Ministry of Health	Medical General	Hospitals and Dispensaries	Health Branch	Social Hygiene Branch	Government Medical Store	Total
	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.	\$ c.
Personal Emoluments ..	69,259 00	1,414,769 08	12,550,186 80	1,798,868 29	367,279 85	310,102 66	16,510,465 68
Other Charges, Annually Recurrent	4,334 78	333,180 82	6,276,876 41	951,967 49	99,706 52	253,725 00	7,919,791 02
Other Charges, Special Expenditure	..	14,413 67	1,061,221 36	22,693 20	10,563 42	175,618 40	1,284,510 05
Development ..	..	32,154 85	..	88,325 74	..	..	120,480 59
P.W.D. Non-Recurrent (For Medical Development Estimates) ..	..	308,390 28	3,787,422 73	..	..	..	4,095,813 01
Total ..	73,593 78	2,102,908 70	23,675,707 30	2,861,854 72	477,549 79	739,446 06	29,931,060 35

APPENDIX II

IN-PATIENTS ALL HOSPITALS FOR THE YEAR 1956

The following table shows the hospitals maintained by the Medical Department, Singapore, the daily average number of patients in each, the number of patients admitted during the year, the total number of patients treated, the number of deaths and the death rate per hundred treated (the Quarantine Hospital and Leper Settlement are not included).

Hospitals	Average No. of patients	Admissions during the year	CASES TREATED DURING THE YEAR			Deaths	Mortality per cent
			Male	Female	Total		
General Hospital	980.63	31,446	21,470	10,854	32,324	2,382	7.37
T.T.S.H. (T.B. and General)	542.02	2,021	2,056	509	2,565	141	5.50
K.K.M. Hospital	296.00	32,203	..	32,472	32,472	51	.16
Police Headquarters, Thomson Road	6.70	477	480	..	480	..	..
H. M. Prison, Outram Road	120.73	1,667	1,763	..	1,763	1	.06
H. M. Prison, Changi	12.00	277	291	..	291	..	..
Woodbridge Hospital	2,043.00	1,738	2,176	1,516	3,692	74	2.00
St. Andrew's Orthopaedic Hospital	118.80	209	178	156	334	..	..
Social Hygiene Hospital	33.00	1,353	373	992	1,365	..	..
Middleton Hospital	116.00	3,831	2,490	1,437	3,927	76	1.94
Opium Treatment Centre, St. Johns Island.	13.19	443	443	..	443	1	.23
Total (including 205 transfers and 16 healthy persons admitted to hospital to accompany children or friends) .. .. .	..	75,665	31,720	47,936	79,656	2,726	3.42

N.B.:—Total cases treated in 1955: 71,380.

APPENDIX III
OUT-PATIENTS

Total Attendances at the Out-Patients Clinics during the year 1956, were distributed as follows:—

Hospitals	New Cases	Repetitions	Total Attendances
General Hospital — Out-patients	271,231	610,511	881,742
M.O. i/c, Officials	6,668	6,668	127,929
K.K.M. Hospital { Antenatal and Post-Natal	50,317	77,612	84,119
{ O.P.D. Women and Children	23,703	60,416	31,687
T.T.S. { General Out-patient	4,710	26,977	260,857
{ Rotary Chest Clinic	2,191	258,666	19,476
{ Hansen's Clinic	517	18,959	185,452
Social Hygiene Hospital	24,551	160,901	8,812
Police Training School, Thomson Road	2,723	6,089	22,606
" Dept. Families	3,745	18,861	89,349
School Clinics (North Canal Road, Paya Lebar and Telok Kurau Clinics)	39,012	50,337	21,828
School Chest Clinics	21,828	—*	
<i>Static, Floating and Travelling Dispensaries</i>			
Paya Lebar O.D.D.	15,100	37,982	53,082
Bukit Timah O.D.D.	6,362	13,867	20,229
Bukit Panjang O.D.D.	7,900	14,990	22,890
Holland Road O.D.D.	2,431	3,025	5,456
Thomson Road O.D.D.	4,706	10,577	15,283
Travelling Dispensaries	42,336	34,726	77,062
Floating Dispensary	2,698	3,452	6,150
Total	532,729	1,407,948	1,940,677

Excluding the Prisons, Maternity and Child Health Clinics,
* Separate figures not available.

APPENDIX IV

HOSPITALS, COLONY OF SINGAPORE, IN-PATIENTS

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956

According to the Intermediate List adapted for use in Singapore, of the 1948 (6th) International List of Diseases and Causes of Death

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
A 1	001-008	<i>I.—Infective and Parasitic Diseases</i>	520	2,804	203	3,324	514
A 2	010	Tuberculosis of respiratory system ..	10	138	58	148	26
A 3	011	Tuberculosis of meninges and central nervous system ..	..	15	4	15	1
A 4	(a) 012.0, 013.0 (b) 012, 013 except 012.0, 013.0	Tuberculosis of intestines, peritoneum and mesenteric glands .. Tuberculosis of bones and joints:— Tuberculosis of the vertebral column ..	..	224	4	346	97
A 5	(a) 014 (b) 015 (c) 016 (d) 017 (e) 018 (f) 019	Tuberculosis of other bones and joints Tuberculosis, all other forms:— Tuberculosis of skin and subcutaneous cellular tissue .. Tuberculosis of lymphatic system .. Tuberculosis of genito-urinary system Tuberculosis of adrenal glands .. Tuberculosis of other organs .. Disseminated tuberculosis ..	76	252	2	328	90
		<i>Carried forward ..</i>	737	3,606	292	4,343	742

The headings are taken from the Intermediate List of 150 Causes for Tabulation of Morbidity and Mortality as published in the 'Manual of the International Statistical Classification of Diseases, Injuries and Causes of Death' (Sixth Revision of the International Lists of Diseases and Causes of Death, 1948).

Reference should be made to the Detailed List of the Diseases published on pages 45 to 321 of Volume I of the above Manual whenever there is any doubt about the entry in the list.

* *i.e.*, the year previous to that for which the return is made.

† 'Total cases treated' will, of course, include those remaining in Hospital at the end of the previous year.

‡ The figures in this column to be carried on to the next year's Return.

APPENDIX IV—continued
 RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	737	3,606	292	4,343	742
		<i>I.—Infective and Parasitic Diseases</i> <i>—contd.</i>					
A 6	020	Congenital syphilis ..	1	85	9	86	..
A 7	021.0, 021.1	Early Syphilis:—	..	6	..	6	1
	021.2	Primary syphilis ..	..	15	..	15	1
	021.3	Secondary syphilis ..	..	30	..	30	..
		Early syphilis, relapse following treatment ..	..	..	..	..	..
	021.4	Early syphilis (unspecified stage) ..	..	45	1	48	..
A 8	024	Tabes dorsalis ..	3	13	2	19	..
A 9	025	General paralysis of insane ..	6	23	10	23	..
A 10		All other syphilis:—	..	53	4	53	..
	022	Aneurysm of aorta ..	..	33	..	37	4
	023	Other cardiovascular syphilis ..	..	264	..	266	..
	026	Other syphilis of central nervous system ..	4	68	..	69	1
	027	Other forms of late syphilis ..	2	6	..	7	..
	028	Latent syphilis ..	1	192	..	192	2
	029	Syphilis, unqualified ..	1	2	..	2	..
A 11		Gonococcal infections:—	..	14	..	15	2
	030	Acute or unspecified gonorrhoea ..	..	2	..	2	..
	031	Chronic gonococcal infection of genitourinary system ..	..	71	..	72	..
	032	Gonococcal infection of joint ..	1	..	..	..	..
	033	Gonococcal infection of eye ..	..	..	..	..	..
	034-035	Gonococcal infection of other sites ..	1	..	..	..	..
		<i>Carried forward</i> ..	757	4,528	318	5,285	753

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	757	4,528	318	5,285	753
		<i>1.—Infective and Parasitic Diseases</i> <i>—contd.</i>					
A 12	040	Typhoid fever	7	148	6	155	8
A 13		Paratyphoid fever and other Salmonella infections:—					
	041	Paratyphoid fever A, B or C	..	..	..	..	..
	042	Other Salmonella infections	..	..	..	..	..
A 14	043	Cholera	..	..	..	..	..
A 15	044	Brucellosis (undulant fever)	..	..	..	..	..
A 16	045	Dysentery, all forms:—	1	55	3	56	7
	046	Bacillary dysentery	7	228	10	235	3
	047-048	Amoebiasis	..	..	..	..	..
		Other protozoal and unspecified forms of dysentery	2	79	1	81	3
A 17	050	Scarlet fever	..	..	..	..	..
A 18	051	Streptococcal sore throat	..	2	..	2	..
A 19	052	Erysipelas	..	4	..	4	..
A 20	053	Septicæmia and pyæmia	1	31	20	32	1
A 21	055	Diphtheria	37	764	55	801	39
A 22	056	Whooping Cough	1	157	2	158	3
A 23	057	Meningococcal infections	..	4	2	4	..
A 24	058	Plague:—	..	..	..	..	..
	058.0	Bubonic	..	..	..	..	..
	058.1	Pneumonic	..	..	..	..	..
	058.2	Other Plague	..	..	..	..	..
A 25	060	Leprosy	3	69	..	72	9
		<i>Carried forward</i> ..	816	6,069	417	6,885	823

APPENDIX IV—continued
RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	†Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	816	6,069	417	6,885	823
		<i>I.—Infective and Parasitic Diseases</i> <i>—contd.</i>					
		Tetanus:—					
A 26	061	Tetanus of the new-born	1	15	9	16	1
(a)		Tetanus, other forms ..	2	66	25	68	2
(b)							
A 27	062	Anthrax ..	..	..	..	..	..
A 28	080	Acute Poliomyelitis ..	..	..	..	..	..
A 29	082	Acute infectious encephalitis ..	..	..	..	..	..
A 30	081, 083	Late effects of acute poliomyelitis and acute infectious encephalitis ..	..	..	..	..	..
			9	61	..	70	9
A 31	084	Small-pox ..	..	..	..	..	..
A 32	085	Measles ..	..	..	..	..	..
A 33	091	Yellow fever ..	..	..	..	..	..
A 34	092	Infectious hepatitis ..	..	..	..	..	..
A 35	094	Rabies ..	..	..	..	..	..
			2	334	..	336	..
A 36	100	Typhus and other rickettsial diseases:—	..	..	..	..	..
(a)		Louse-borne epidemic typhus ..	..	..	..	..	..
(b)		Flea-borne epidemic typhus (murine) ..	..	..	..	..	..
(c)		Tick-borne epidemic typhus ..	..	..	..	..	..
(d)		Mite-borne typhus ..	..	..	..	..	..
(e)		Other and unspecified typhus ..	..	..	..	..	..
	102-103 } 106-108 }		..	..	..	..	..
		<i>Carried forward</i> ..	861	7,148	476	8,009	867

APPENDIX IV—continued
 RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	861	7,148	476	8,009	867
		I.—Infective and Parasitic Diseases —contd.					
		Malaria:—					
A 37	(a) 110	Vivax malaria (benign tertian) ..	..	45	..	45	..
	(b) 111	Malariae malaria (quartan) ..	..	..	..	..	..
	(c) 112	Falciparum malaria (malignant tertian) ..	1	29	1	30	..
	(d) 114	Mixed malaria infections ..	..	2	..	2	..
	(e) 115	Blackwater fever ..	..	..	..	..	..
	(f) 113, 116-117	Other and unspecified forms of malaria ..	1	13	..	14	1
		Schistosomiasis:—					
A 38	(a) 123.0	Schistosomiasis vesical (S. hematobium) ..	..	..	..	..	..
	(b) 123.1	Schistosomiasis intestinal (S. Mansonii) ..	..	..	..	..	..
	(c) 123.2	Schistosomiasis Pulmonary (S. Japonicum) ..	..	..	..	..	..
	(d) 123.3	Other and unspecified Schistosomiasis ..	..	..	..	..	..
A 39	125	Hydatid disease ..	..	..	..	..	..
A 40	127	Filariasis ..	1	33	..	34	1
A 41	129	Ankylostomiasis ..	1	89	1	90	1
		Other diseases due to helminths:—					
A 42	(a) 124	Other trematode infestation ..	..	1	..	1	..
	(b) 126	Tape worm (infestation) and other cestode infestation ..	..	4	..	4	..
		<i>Carried forward</i> ..	865	7,364	478	8,229	870

APPENDIX IV—continued
RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
A 42		<i>Brought forward</i> ..	865	7,364	478	8,229	870
		<i>I.—Infective and Parasitic Diseases</i> <i>—contd.</i>					
		Trichiniasis ..	.. 1	.. 65	.. 1	.. 66	..
	128	Ascariasis ..	..	.. 23	..	.. 23	.. 1
	130.0	Other diseases due to helminths ..	..	..	..	..	..
	130.1-130.3						
A 43		All other diseases classified as infective and parasitic:—					
		Chancroid ..	..	4	..	4	1
	036	Lymphogranuloma Venereum ..	..	6	..	6	..
	037	Granuloma inguinale, venereal ..	..	..	..	..	..
	038	Other and unspecified venereal diseases ..	..	283	..	283	5
	039	Food poisoning (infection and intoxication) ..	..	..	..	..	..
	049	Tularæmia ..	..	21	..	21	1
	059	Gas Gangrene ..	..	..	..	..	..
	063	Glanders ..	..	3	..	3	..
	064.2	Melioidosis ..	..	1	..	1	..
	064.3	Other bacterial diseases ..	..	..	..	..	..
	046.0, 064.1 } 064.4 }	Vincent's infection ..	..	..	..	..	..
	070	Relapsing fever ..	..	..	..	..	..
	071	Leptospirosis icterohæmorrhagica (Weil's disease) ..	..	..	..	..	..
	072		1	28	1	29	2
		<i>Carried forward</i> ..	867	7,798	481	8,665	880

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	†Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	867	7,798	481	8,665	880
		I.—Infective and Parasitic Diseases —contd.					
A 43	073	Yaws ..	..	11	..	11	..
	086	Rubella (German measles) ..	..	115	..	115	1
	087	Chicken-pox ..	18	1,493	..	1,511	22
	088	Herpes Zoster ..	..	19	..	19	1
	089	Mumps ..	2	86	..	88	..
	090	Dengue ..	..	23	..	23	..
	093	Glandular fever ..	..	4	..	4	..
	095	Trachoma ..	3	72	..	75	2
	096.7	Sandfly fever ..	..	..	..	..	..
	120	Leishmaniasis ..	..	2	..	2	..
	121.0	Trypanosomiasis gambiensis ..	..	..	..	..	..
	121.0	Trypanosomiasis rhodesiensis ..	..	..	..	..	..
	121	Other and unspecified trypanosomiasis ..	..	..	..	..	..
	131	Dermatophytosis ..	..	1	..	1	..
	132	Actinomycosis ..	..	1	..	1	..
	133, 134	Other fungus infections ..	..	24	..	24	..
	135	Scabies ..	..	11	..	11	1
	054, 074	All other diseases classified as infective and parasitic ..	..	12	..	12	..
	096.1-096.6		..				
	096.8, 096.9		..				
	122		..				
	136-138		..				
		<i>Carried forward</i> ..	890	9,672	481	10,562	907

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	890	9,672	481	10,562	907
		II.—Neoplasms					
A 44	140-148	Malignant neoplasm of buccal cavity and pharynx ..	4	96	18	100	8
A 45	150	Malignant neoplasm of oesophagus ..	5	103	34	108	5
A 46	151	Malignant neoplasm of stomach ..	4	184	43	188	3
A 47		Malignant neoplasm of intestine except rectum:—					
(a)	152	Malignant neoplasm of small intestine, including duodenum ..	..	1	..	1	..
(b)	153	Malignant neoplasm of large intestine, except rectum ..	3	46	11	49	6
A 48	154	Malignant neoplasm of rectum ..	3	56	8	59	3
A 49	161	Malignant neoplasm of larynx ..	1	25	8	26	1
A 50	162-163	Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary ..	11	158	43	169	6
A 51	170	Malignant neoplasm of breast ..	4	77	8	81	2
A 52	171	Malignant neoplasm of cervix uteri ..	4	263	5	267	9
A 53	172-174	Malignant neoplasm of other and unspecified parts of uterus ..	..	22	1	22	..
A 54	177	Malignant neoplasm of prostate ..	..	17	3	17	..
A 55	190-191	Malignant neoplasm of skin ..	..	26	2	26	1
A 56	196-197	Malignant neoplasm of bone and connective tissue ..	..	11	..	11	..
		<i>Carried forward</i> ..	929	10,757	665	11,686	951

APPENDIX IV—continued
 RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	†Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	929	10,757	665	11,686	951
		II.—Neoplasms—contd.					
		Malignant neoplasm of all other and un- specified sites:—					
A 57	155-156	Malignant neoplasm of liver ..	2	96	42	98	5
	157	Malignant neoplasm of pancreas ..	..	17	10	17	..
	158	Malignant neoplasm of peritoneum ..	..	10	1	10	..
	159	Malignant neoplasm of unspecified di- gestive organs ..	..	3	..	3	..
	175-176	Malignant neoplasm of other and un- specified female genital organs ..	2	23	1	25	..
	178-179	Malignant neoplasm of other and un- specified male genital organs ..	1	8	..	9	..
	180-181	Malignant neoplasm of kidney, bladder and other urinary organs ..	..	26	6	26	5
	160	Malignant neoplasm of all other and unspecified sites ..	6	66	22	72	1
	164-165	Leukæmia and Aleukæmia ..	4	56	24	60	4
	192-195	Lymphosarcoma and other neoplasms of lymphatic and hematopoietic system:—	..	..	..	..	..
	198-199	Lymphosarcoma and reticulosarcoma	..	16	2	16	..
	204	Hodgkin's disease ..	..	11	4	11	..
A 58	200	<i>Carried forward</i> ..	944	11,089	777	12,033	966
A 59	201						

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	944	11,089	777	12,033	966
		II.— <i>Neoplasms—contd.</i>					
A 59	202-203 } 205	Other neoplasm of lymphatic and hæ- matopoietic system ..	..	4	2	4	..
A 60	210-211	Benign neoplasms and neoplasms of un- specified nature:— Benign neoplasm of buccal cavity, pha- rynix and digestive system ..	..	20	..	20	1
(b)	213-217	Benign neoplasm of female genital organs ..	5	293	3	298	8
(c)	218	Benign neoplasm of male genital organs ..	..	8	..	8	..
(d)	212 219-229 } 230	Benign neoplasm of other and un- specified organs and tissue ..	13	227	1	240	6
(e)		Neoplasm of unspecified nature of di- gestive organs ..	2	1	..	3	..
(f)	233-235	Neoplasm of unspecified nature of other female genital organs ..	..	7	..	7	..
(g)	231-232 236-239 } ..	Neoplasm of unspecified nature of other unspecified organs ..	4	83	10	87	8
		<i>Carried forward</i> ..	968	11,732	793	12,700	989

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	968	11,732	793	12,700	989
		III.— <i>Allergic, Endocrine System, Metabolic and Nutritional Diseases</i>					
		IV.— <i>Diseases of the Blood and Blood-Forming Organs</i>					
A 61	250, 251	Nontoxic goitre ..	..	103	..	103	3
A 62	252	Thyrototoxicosis with or without goitre ..	6	126	2	132	7
A 63	260	Diabetes mellitus ..	7	218	16	225	18
A 64		Avitaminosis and other deficiency states:—					
(a)	280	Beri-Beri ..	1	30	4	31	1
(b)	281	Pellagra ..	..	..	..	..	..
(c)	282	Scurvy ..	..	2	..	2	..
(d)	283-284	Rickets ..	..	7	..	7	..
(e)	285	Osteomalacia ..	..	..	..	..	..
(f)	286.0	Steatorrhea and Sprue ..	1	..	..	1	..
(g)	286.5	Malnutrition-unqualified ..	2	88	16	90	7
(h)	286.1-286.4 286.6	Other avitaminoses and nutritional deficiency states ..	..	16	1	16	..
		<i>Carried forward</i> ..	985	12,322	832	13,307	1,025

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	985	12,322	832	13,307	1,025
		IV.—Diseases of the Blood and Blood-Forming Organs—contd.					
		Anaemias:—					
A 65	290	Pernicious and other hyperchromic anaemias ..	1	3	..	4	..
	291	Iron deficiency anaemias (hypochromic)	..	84	3	84	1
	292-293	Other specified and unspecified anaemias ..	15	181	14	196	10
A 66		Allergic disorders; all other endocrine metabolic and blood diseases:—	10	609	3	619	13
	241	Asthma ..	..	..	..	..	..
	240	Angioneurotic oedema, urticaria and other allergic disorders ..	1	139	1	140	1
	242-245	Myxoedema and cretinism ..	..	10	1	10	..
	253	Other diseases of thyroid gland ..	..	7	1	7	..
	254	Disorders of pancreatic internal secretion other than diabetes mellitus ..	..	7	1	7	..
	270	Diseases of parathyroid gland ..	..	3	..	3	..
	271	Diseases of pituitary gland ..	..	1	..	1	..
	272	Diseases of thymus gland ..	..	..	..	..	..
	273	Diseases of adrenal gland ..	..	..	..	..	..
	274	Other diseases of endocrine glands ..	..	..	..	..	..
	275-277	Gout ..	1	2	..	2	..
	288	Other metabolic diseases ..	..	7	..	8	..
	287, 289	Polycythemia ..	..	18	..	18	..
	294	<i>Carried forward</i> ..	..	2	..	2	..
			1,013	13,395	856	14,408	1,050

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	1,013	13,395	856	14,408	1,050
		IV.— <i>Diseases of the Blood and Blood- Forming Organs—contd.</i>					
A 66	(n) 295	Haemophilia ..	1	15	..	16	2
	(o) 296	Purpura and other haemorrhagic con- ditions ..	2	39	3	41	1
	(p) 297	Agranulocytosis ..	..	..	..	..	..
	(q) 298	Diseases of spleen ..	5	10	..	15	2
	(r) 299	Other diseases of blood and blood- forming organs ..	..	5	..	5	..
		V.— <i>Mental, Psychoneurotic and Personality Disorders</i>					
A 67	(a) 300	Psychoses:—					
	(b) 301	Schizophrenic disorders (dementia praecox) ..	621	398	7	1,019	776
	(c) 302	Maniac-depressive reaction ..	624	898	7	1,522	508
	(d) 303	Involutional melancholia ..	20	44	2	64	37
	(e) 304	Paranoia and paranoid states ..	19	39	1	58	31
	(f) 305-309	Senile psychoses ..	41	54	21	95	98
		Other and unspecified psychoses ..	624	283	36	907	608
		<i>Carried forward</i> ..	2,970	15,180	933	18,150	3,113

APPENDIX IV—continued
RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
A 68		Brought forward ..	2,970	15,180	933	18,150	3,113
		V.— <i>Mental, Psychoneurotic and Personality Disorders—contd.</i>					
		Psychoneuroses and disorders of personality:—					
		Hysterical reaction ..	1	70	..	71	2
(a)	311	Neurotic-depressive reaction ..	..	21	..	21	..
(b)	314	Alcoholism ..	2	57	..	59	2
(c)	322	Other drug addiction ..	53	1,476	..	1,529	34
(d)	323						
(e)	310, 312-313 } 315-321, 324 } 326 }	Other psychoneuroses and disorders of personality ..	3	81	..	84	3
A 69	325	Mental deficiency ..	2	80	..	82	5
		VI.— <i>Diseases of the Nervous System and Sense Organs</i>					
		Vascular lesions affecting central nervous system:—					
		Cerebral hemorrhage ..	3	185	141	188	5
(a)	331	Cerebral embolism and thrombosis ..	2	151	19	153	7
(b)	332	Other vascular lesions affecting central nervous system ..	..	21	2	21	..
(c)	330 } 333-334 }						
A 70		Carried forward ..	3,036	17,322	1,095	20,358	3,171

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,036	17,322	1,095	20,358	3,171
		VI.— <i>Diseases of the Nervous System and Sense Organs—contd.</i>					
A 71	340	Non-meningococcal meningitis ..	11	124	47	135	17
A 72	345	Multiple sclerosis ..	..	..	..	..	..
A 73	353	Epilepsy ..	2	137	6	139	..
A 74		Inflammatory diseases of eye:—					
	370	Conjunctivitis and ophthalmia ..	2	213	..	215	2
	371-379	Other inflammatory diseases of eye ..	16	411	..	427	27
A 75	385	Cataract ..	18	506	..	524	23
A 76	387	Glaucoma ..	11	123	..	134	9
A 77		Otitis media and mastoiditis:—					
	390	Otitis externa ..	..	27	..	27	..
	291-393	Otitis media and mastoiditis ..	2	121	1	123	3
	394	Other inflammatory diseases of ear ..	..	9	..	9	..
A 78		All other diseases of the nervous system and sense organs:—					
	380-384	All other diseases and conditions of eye ..	31	364	1	395	31
	386, 388						
	389						
		<i>Carried forward</i> ..	3,129	19,357	1,150	22,486	3,283

APPENDIX IV—continued
RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,129	19,357	1,150	22,486	3,283
		<i>VI. Diseases of the Nervous System and Sense Organs—contd.</i>					
		Intracranial and intraspinal abscess ..	1	19	9	20	1
		Encephalitis, myelitis and encephalo- myelitis ..	3	167	34	170	9
		Paralysis agitans ..	2	14	1	16	3
		Other cerebral paralysis ..	31	53	6	84	31
		Motor neuron disease and muscular atrophy ..	..	5	2	5	..
		Other diseases of spinal cord ..	2	19	..	21	..
		Other and unspecified forms of neural- gia and neuritis ..	2	41	..	43	4
		Diseases of cranial nerves ..	..	3	..	3	1
		Diseases of peripheral autonomic ner- vous system ..	1	3	..	4	..
		All other diseases of the nervous system and sense organs ..	..	123	3	123	4
		<i>Carried forward</i> ..	3,171	19,804	1,205	22,975	3,336

A 78 (b) 342
(c) 343
(d) 350
(e) 352
(f) 356
(g) 357
(h) 366
(i) 367
(j) 369
(k) 341, 344
351, 354
355
360-365
368
395-398

APPENDIX IV—continued
 RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,171	19,804	1,205	22,975	3,336
		VII.— <i>Diseases of the Circulatory System</i>					
		Rheumatic fever:—					
A 79	400	Rheumatic fever without mention of heart involvement ..	5	87	1	92	8
	401	Rheumatic fever with heart involvement ..	..	46	2	46	..
	402	Chorea ..	1	9	..	10	2
		Chronic rheumatic heart disease:—					
A 80	410-413	Diseases of valves specified as rheumatic ..	3	155	23	158	1
	414	Other endocarditis specified as rheumatic ..	2	1	1	3	..
	415	Other myocarditis specified as rheumatic ..	1	..	1	1	..
	416	Other heart disease specified as rheumatic ..	..	27	3	27	3
A 81		Arteriosclerotic and degenerative heart disease:—					
	420	Arteriosclerotic heart disease, including coronary disease ..	16	228	65	244	11
	421	Chronic endocarditis not specified as rheumatic ..	10	187	25	197	13
		<i>Carried forward</i> ..	3,209	20,544	1,326	23,753	3,374

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,209	20,544	1,326	23,753	3,374
		VII.—Diseases of the Circulatory System <i>—contd.</i>					
A 81	422	Other myocardial degeneration ..	..	17	2	17	1
A 82	430 431	Other diseases of heart:— Acute and subacute endocarditis ..	..	23	6	23	..
		Acute myocarditis not specified as rheu- matic .. .. .	..	8	5	8	..
	432	Pericarditis not specified as rheumatic	1	11	1	12	..
	433	Functional disease of heart ..	1	6	..	7	..
	434	Other and unspecified diseases of heart	7	123	31	130	4
A 83	440-443	Hypertension with heart disease ..	9	313	49	322	12
A 84	444-447	Hypertension without mention of heart	9	325	42	334	15
A 85	450 451	Diseases of arteries:— General arteriosclerosis .. .. .	..	7	2	7	..
		Aortic aneurysm specified as non-syphi- litic and dissecting aneurysm ..	..	16	6	16	..
	452	Other aneurysm, except of heart and aorta	1	8	..	9	..
	453	Peripheral vascular disease ..	3	34	..	37	3
	454	Arterial embolism and thrombosis ..	..	5	..	5	1
	455	Gangrene of unspecified cause ..	3	21	1	24	1
		<i>Carried forward</i> ..	3,243	21,461	1,471	24,704	3,411

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,243	21,461	1,471	24,704	3,411
		VII.— <i>Diseases of the Circulatory System</i> —contd.					
		Other diseases of arteries ..	2	..	1	2	..
A 85	456	Other diseases of circulatory system:—				56	1
A 86	460, 462	Varicose veins ..	..	56	..	475	7
	461	Hæmorrhoids ..	6	469	..	28	1
	463-464	Phlebitis and thrombophlebitis ..	1	27	..	2	..
	465	Pulmonary embolism and infarction ..	1	1	1	..	..
	466	Other venous embolism and throm- bosis ..	1	12	1	13	..
	467	Other diseases of circulatory system ..	..	13	2	13	..
	468	Adenitis, Lymphadenitis, and other diseases of lymph nodes and lymph channels ..	..	81	..	82	3
		VIII.— <i>Diseases of the Respiratory System</i>					
		Acute upper respiratory infections:—	1	50	..	51	1
A 87	470	Acute nasopharyngitis (common cold)	..	..	..	..	..
		<i>Carried forward</i> ..	3,256	22,170	1,476	25,426	3,424

APPENDIX IV—continued
RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,256	22,170	1,476	25,426	3,424
		VIII.— <i>Diseases of the Respiratory System</i> — <i>contd.</i>					
A 87	(b) 471 (c) 472 (d) 473 (e) 474 (f) 475	Acute sinusitis .. Acute pharyngitis .. Acute tonsillitis .. Acute laryngitis and tracheitis .. Acute upper respiratory infection of multiple or unspecified sites ..	1 6 10	18 594 449 30	.. 1 .. 3	19 600 459 30	.. 4 8 1
A 88	480-483	Influenza ..	1	2	..	2	..
A 89	490	Lobar Pneumonia ..	7	72	..	73	..
A 90	491	Broncho-pneumonia ..	8	465	58	472	9
A 91	492-493	Primary atypical, other and unspecified pneumonia ..	8	1,008	214	1,016	26
A 92	500	Acute bronchitis ..	3 4	61 167	9 3	64 171	4 4
A 93		Bronchitis, chronic and unqualified:—					
	(a) 501	Bronchitis unqualified ..	..	272	6	272	1
	(b) 502	Chronic bronchitis ..	4	38	6	42	1
A 94	510	Hypertrophy of tonsils and adenoids ..	..	553	..	553	8
A 95		Empyema and Abscess of lung:—					
	(a) 518	Empyema ..	5	69	6	74	7
	(b) 521	Abscess of lung ..	7	70	10	77	13
A 96	519	Pleurisy ..	19	100	2	119	8
		<i>Carried forward</i> ..	3,331	26,138	1,794	29,469	3,518

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,331	26,138	1,794	29,469	3,518
		VIII.— <i>Diseases of the Respiratory System</i> —contd.					
		All other respiratory diseases:—					
A 97	(a) 517	Other diseases of upper respiratory tract ..	3	26	1	29	1
	(b) 520	Spontaneous pneumothorax ..	..	45	2	45	5
	(c) 522	Pulmonary congestion and hypostasis ..	..	1	1	1	..
	(d) 525	Other chronic interstitial pneumonia ..	..	1	..	1	..
	(e) 523	Pneumoconiosis ..	7	243	3	250	7
	(f) 526	Bronchiectasis ..	3	401	8	404	10
	(g) 511-516 524 527	All other respiratory diseases ..	..	..	..	..	..
		IX.— <i>Diseases of the Digestive System</i>					
		Diseases of teeth and supporting structures:—					
A 98	(a) 530	Dental caries ..	..	5	..	5	..
	(b) 532.0	Gingivitis ..	..	1	..	1	..
	(c) 531.1, 532.2	Pyorrhœa ..	..	3	..	3	..
		<i>Carried forward</i> ..	3,344	26,864	1,809	30,208	3,541

APPENDIX IV—continued
RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,344	26,864	1,809	30,208	3,541
		<i>IX.—Diseases of the Digestive System —contd.</i>					
		Other diseases of teeth and supporting structures ..	2	61	..	63	1
A 98 (d)	531, 533-535	Ulcer of stomach ..	14	592	16	606	23
A 99	540	Ulcer of duodenum ..	3	187	..	190	6
A 100	541	Gastritis and duodenitis ..	2	109	..	111	2
A 101	543	Appendicitis ..	25	1,481	13	1,506	28
A 102	550-553						
		Intestinal obstruction and hernia:—					
A 103 (a)	560	Hernia of abdominal cavity without mention of obstruction ..	1	694	..	695	7
(b)	561	Hernia of abdominal cavity with obstruction ..	6	119	2	125	..
(c)	570.0	Intussusception ..	2	45	11	47	..
(d)	570.3	Volvulus ..	2	4	1	6	..
(e)	570.1, 570.2 } 570.4, 570.5 }	Other intestinal obstruction ..	2	59	13	61	2
A 104 (a)	571.0	Gastro-enteritis and colitis, except diarrhoea of the new born:— Gastro-enteritis and colitis, ages between four weeks and two years..	8	848	100	856	8
		<i>Carried forward</i> ..	3,411	31,063	1,965	34,474	3,618

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,411	31,063	1,965	34,474	3,618
		IX.—Diseases of the Digestive System <i>—contd.</i>					
A 104	(b) 571.1	Gastro-enteritis and colitis, ages two years and over ..	3	360	33	363	6
	(c) 572	Chronic enteritis and ulcerative colitis	..	28	2	28	..
A 105	(a) 581.0	Cirrhosis of liver:—					
	(b) 581.1	Cirrhosis of liver without mention of alcoholism ..	10	216	44	226	4
		Cirrhosis of liver with alcoholism ..	..	27	4	27	..
A 106	(a) 584	Cholelithiasis and Cholecystitis:—	..	99	11	99	1
	(b) 585	Cholelithiasis ..	..	205	3	214	13
		Cholecystitis without mention of calculi	..				
A 107	(a) 536	Other diseases of Digestive System:—	..	12	..	12	..
	(b) 537, 538	Stomatitis ..	..	36	..	36	..
	(c) 539.0	Other diseases of buccal cavity ..	..	7	..	8	3
		Functional disorders of œsophagus ..	1				
	(d) 539.1	Stricture or obstruction of œsophagus	4	13	1	17	2
	(e) 544	Disorders of function of stomach ..	..	14	..	14	..
	(f) 542, 545	Other diseases of stomach and duode- num ..	7	38	1	45	1
		<i>Carried forward</i> ..	3,445	32,118	2,064	35,563	3,648

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,445	32,118	2,064	35,563	3,648
		IX.—Diseases of the Digestive System <i>—contd.</i>					
A 107	573.0 573 except 573.0	Constipation .. .. .	..	31	..	31	..
	574	Other functional disorders of intestines ..	..	14	..	14	..
	575	Anal fissure and fistula	2	108	..	110	..
	576	Abscess of anal and rectal regions	3	143	1	146	2
	577, 578	Peritonitis	3	40	23	43	1
		Other diseases of intestines and peri- toneum	3	50	3	53	3
	580	Acute yellow atrophy of liver	1	6	5	7	..
	582, 583	Other diseases of liver	4	44	21	48	2
	586	Other diseases of gall-bladder and biliary ducts	1	33	5	34	3
	587	Diseases of pancreas .. .. .	..	26	3	26	..
		X.—Diseases of the Genito-Urinary System					
A 108	590	Acute nephritis	11	292	22	303	13
A 109	591	Chronic, other and unspecified nephri- tis:— Nephritis with œdema, including nep- hrosis	14	186	11	200	10
		<i>Carried forward</i> ..	3,487	33,091	2,158	36,578	3,682

APPENDIX IV—continued
RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,487	33,091	2,158	36,578	3,682
		X.— <i>Diseases of the Genito-Urinary System</i> —contd.					
A 109	592	Chronic nephritis ..	7	122	36	129	15
	593	Nephritis not specified as acute or chronic ..	2	4	2	6	..
	594	Other renal sclerosis ..	..	5	..	5	..
A 110	600	Infections of kidney ..	2	191	5	193	8
A 111	602	Calculi of urinary system:—	1	153	4	154	2
	604	Calculi of kidney and ureter ..	..	46	1	46	2
	610	Calculi of other parts of urinary system ..	3	76	3	79	3
A 113	630, 621	Hyperplasia of prostate ..	..	69	..	69	2
		Diseases of breast ..	..	..	..	..	..
A 114	603	Other diseases of genito-urinary system:—	1	54	..	55	..
	605	Other diseases of kidney and ureter ..	3	65	2	68	2
	606	Cystitis ..	1	32	1	33	1
	608	Other diseases of bladder ..	1	37	1	38	..
	609	Stricture of urethra ..	2	21	..	23	1
	612	Other diseases of urethra ..	..	3	..	3	..
	613	Other diseases of prostate ..	2	160	..	162	6
	614	Hydrocele ..	1	53	..	54	3
	611	Orchitis and epididymitis ..	3	227	..	230	4
	615-617	Other diseases of male genital organs ..	..	55	..	55	1
	622-624	Acute salpingitis and oophoritis ..	..	..	..	..	..
		<i>Carried forward</i> ..	3,516	34,464	2,213	37,980	3,732

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,516	34,464	2,213	37,980	3,732
		<i>X.—Diseases of the Genito-Urinary System</i> <i>—contd.</i>					
A 114	(k) 625	Other diseases of ovary and Fallopian tube	1	139	..	140	3
	(l) 626	Diseases of parametrium and pelviperitoneum (female) .. .. .	..	38	..	38	3
	(m) 630	Infective disease of uterus, vagina and vulva .. .. .	..	51	..	51	..
	(n) 631-633	Other diseases of uterus	6	94	..	100	3
	(o) 634	Disorders of menstruation .. .. .	..	128	..	128	..
	(p) 635-637	Other diseases of female genital organs	1	203	..	204	1
	(q) 601, 607	All other diseases of the genito-urinary system .. .. .	..	82	3	82	..
		<i>XI.—Deliveries and Complications of Pregnancy, Childbirth and the Puerperium</i>					
A 115	(a) 640	Sepsis of pregnancy, childbirth and the puerperium:—	..	40	..	40	..
	(b) 641	Pyelitis and pyelonephritis of pregnancy	..	10	..	10	..
	(c) 681	Other infections of genito-urinary tract during pregnancy	5	201	..	206	..
		Sepsis of childbirth and the puerperium .. .. .	..	..	..	..	..
		<i>Carried forward</i> ..	3,529	35,450	2,216	38,979	3,742

APPENDIX IV—continued
RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	†Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,529	35,450	2,216	38,979	3,742
		XI.— <i>Deliveries and Complications of Pregnancy, Childbirth and the Puerperium</i> —contd.					
A 115	682 684	Puerperal phlebitis and thrombosis .. Puerperal pulmonary embolism ..	.. ..	.. 2	.. ..	2	....
A 116	642.2 642.3 642.4 642.5	Toxaemias of pregnancy and the puerperium:— Pre-eclampsia of pregnancy .. Eclampsia of pregnancy .. Hyperemesis gravidarum .. Acute yellow atrophy of liver of pregnancy ..	16 1 1 ..	1,298 58 60 1	5 9	1,314 59 61 1	43 2
	642.5 652	Other toxæmias of pregnancy .. Abortion with toxæmia, without mention of sepsis ..	.. ..	3 ..	.. ..	3	....
	685	Puerperal eclampsia ..	..	.. 21	..	21	..
	686	Other forms of puerperal toxæmia ..	..	7	..	7	..
A 117	643 644	Hæmorrhage of pregnancy and childbirth:— Placenta prævia .. Other hæmorrhage of pregnancy ..	.. .. 4	137 409	.. ..	137 413	3 12
		<i>Carried forward</i> ..	3,551	37,446	2,230	40,997	3,802

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,551	37,446	2,230	40,997	3,802
		XI.— <i>Deliveries and Complications of Pregnancy, Childbirth and the Puerperium</i> — <i>contd.</i>					
A 117	(c) 670	Delivery complicated by placenta præ- via or antepartum hæmorrhage ..	4	10	..	14	..
	(d) 671	Delivery complicated by retained pla- centa ..	5	434	3	439	5
	(e) 672	Delivery complicated by other post- partum hæmorrhage ..	4	679	2	683	15
A 118	650	Abortion without mention of sepsis or toxæmia ..	..	1,924	..	1,924	..
A 119	651	Abortion with sepsis ..	..	111	..	111	..
A 120		Other complications of pregnancy, child- birth and the puerperium:—					
	(a) 645	Ectopic pregnancy ..	1	141	1	142	9
	(b) 646	Anæmia of pregnancy ..	8	182	..	190	..
	(c) 683	Pyrexia of unknown origin during the puerperium ..	..	45	1	45	..
	(d) 688,1	Puerperal psychoses ..	..	2	..	2	..
	(e) 689	Mastitis and other disorders of lacta- tion ..	..	14	..	14	..
		<i>Carried forward</i> ..	3,573	40,988	2,237	44,561	3,831

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
A 120 (f)	647-649 673-680 687 688.0 688.2-688.3	Brought forward .. XI.— <i>Deliveries and Complications of Preg- nancy, Childbirth and the Puerperium</i> —contd. Other complications of pregnancy, childbirth and the puerperium .. Delivery without complications .. XII.— <i>Diseases of the Skin and Cellular Tissue</i> XIII.— <i>Diseases of the Bones and Organs of Movement</i> Infections of skin and subcutaneous tissue:— Boil and carbuncle Cellulitis and abscess Other infections of skin and subcuta- neous tissue	3,573	40,988	2,237	44,561	3,831
(g)	660		141	14,777	..	14,918	167
A 121	(a) 690 (b) 691-693 (c) 694-698		..	68	..	68	1
			14	809	5	823	25
			9	569	..	578	22
		Carried forward ..	3,795	67,620	2,264	71,415	4,092

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,795	67,620	2,264	71,415	4,092
		XIII.— <i>Diseases of the Bones and Organs of Movement—contd.</i>					
		Arthritis and spondylitis:—					
A 122	720	Acute arthritis due to pyogenic organisms ..	1	16	1	17	..
	721	Acute nonpyogenic arthritis ..	..	8	..	8	..
	722	Rheumatoid arthritis and allied conditions ..	8	42	1	50	4
	723-725	Arthritis specified and unspecified ..	7	106	1	113	6
A 123		Muscular rheumatism and rheumatism, unspecified:—					
	726	Muscular rheumatism ..	..	26	..	26	..
	727	Rheumatism unspecified ..	..	6	..	6	1
	730	Osteomyelitis and periostitis ..	4	116	..	120	2
A 124		Ankylosis and acquired musculoskeletal deformities:—					
	737	Ankylosis of joint ..	1	7	..	8	1
	745-749	Other acquired musculoskeletal deformities ..	..	24	..	24	3
A 126		All other diseases of skin and musculo-skeletal system:—					
	715	Chronic ulcer of skin (including tropical ulcer) ..	3	66	1	69	3
		<i>Carried forward</i> ..	3,819	68,037	2,268	71,856	4,112

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,819	68,037	2,268	71,856	4,112
		XIII.— <i>Diseases of the Bones and Organs of Movement—contd.</i>					
A 126	(b) } 700-714 716	All other diseases of skin and subcutaneous tissue ..	7	214	7	221	11
	(c) } 731-736 738-744	All other diseases of musculoskeletal system ..	2	167	..	169	9
		XIV.— <i>Congenital Malformations</i>					
A 127	751	Spina bifida and meningocele ..	..	15	1	15	1
A 128	754	Congenital malformation of circulatory system ..	4	205	47	209	2
A 129	(a) } 750 (b) } 752 (c) } 753 (d) } 755	All other congenital malformations:— Monstrosity .. Congenital hydrocephalus .. Other congenital malformations of nervous system and sense organs .. Cleft palate and harelip ..	.. .. .. 2 157	2 16 26 157	2 6 .. 1	2 16 26 159	.. 1 3 ..
		<i>Carried forward</i> ..	3,834	68,839	2,332	72,673	4,139

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,834	68,839	2,332	72,673	4,139
		XIV.— <i>Congenital Malformations—contd.</i>					
A 129 (e)	756.0	Congenital hypertrophic pyloric stenosis ..	..	12	..	12	..
(f)	756.1	Imperforate anus ..	..	18	2	18	..
(g)	756.2	Other congenital malformations of digestive system ..	..	39	7	39	..
(h)	757	Congenital malformations of genitourinary system ..	3	39	1	42	..
(i)	758	Congenital malformations of bone and joint ..	1	16	..	17	1
(j)	759	Other and unspecified congenital malformations, not elsewhere classified ..	1	27	3	28	1
		XV.— <i>Certain Diseases of Early Infancy</i>					
A 130 (a)	760	Birth injuries:— Intracranial and spinal injury at birth ..	..	7	7	7	..
(b)	761	Other birth injury ..	..	6	3	6	..
		<i>Carried forward</i> ..	3,839	69,003	2,355	72,842	4,141

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,839	69,003	2,355	72,842	4,141
		XV.—Certain Diseases of Early Infancy —contd.					
A 131	762	Post-natal asphyxia and atelectasis ..	..	15	9	15	..
A 132	763	Infections of the newborn:—	..	94	44	94	3
	764	Pneumonia of newborn ..	..	176	36	179	3
	765	Diarrhoea of newborn ..	3	7	..	7	..
	766	Ophthalmia neonatorum ..	..	8	1	8	..
	767	Pemphigus neonatorum ..	..	10	2	10	..
	768	Umbilical sepsis ..	..	1	1	1	..
	770	Other sepsis of newborn ..	..	24	13	24	..
A 133	769	Hæmolytic disease of newborn ..	..	60	33	61	..
A 134	771, 772	All other defined diseases of early in- fancy ..	1				..
		Ill-defined diseases peculiar to early in- fancy, and immaturity unqualified:—					
	773	Ill-defined diseases peculiar to early in- fancy ..	1	4	1	5	..
A 135	774-776	Immaturity and immaturity unqualified ..	2	22	10	24	3
		<i>Carried forward</i> ..	3,846	69,424	2,505	73,270	4,150

APPENDIX IV—continued
RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,846	69,424	2,505	73,270	4,150
		<i>XVI.—Symptoms, Senility and Ill-Defined Conditions</i>					
A 136	794	Senility without mention of psychoses ..	4	17	1	21	1
A 137	780-789 except 788.8	Ill-defined and unknown causes of morbidity and mortality:— Symptoms referable to systems or organs	21	784	14	805	35
(a)		Pyrexia of unknown origin ..	6	340	..	346	9
(b)	788.8	Observation, without need for further medical care	6	628	..	634	10
(c)	793	Malingering .. .. .	..	25	..	25	..
(d)	795.1	Sudden death (cause unknown) ..	..	..	..	..	..
(e)	795.2	Found dead (cause unknown) ..	..	..	..	..	..
(f)	795.3	Other ill-defined and unknown causes of morbidity and mortality ..	..	109	2	109	1
(g)	790-792 795.0, 795.4 795.5		..				
		<i>Carried forward</i> ..	3,883	71,327	2,522	75,210	4,206

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,883	71,327	2,522	75,210	4,206
		XVII.— <i>Accidents, Poisonings and Violence</i>					
		‘E’ Code: <i>Alternative Classification of Accidents, Poisonings and Violence (External Causes)</i>					
AE 138	E810-E835	Motor vehicle accidents ..	21	1,017	56	1,038	31
AE 139	E800-E802 E850-E858	Other Transport Accidents:— Railway accidents .. Water transport accidents ..	.. ..	.. 1	.. ..	.. 1	....
	E860-E866	Aircraft accidents ..	..	..	..	..	..
	E840-E845	Other road vehicle accidents ..	..	44	..	44	..
AE 140	E870 E874 E878 E883	Accidental poisoning:— Accidental poisoning by morphia and other opium derivatives .. Accidental poisoning by other analgesic and soporific drugs .. Accidental poisoning by other and unspecified drugs .. Accidental poisoning by corrosive aromatics, acids and caustic alkalis ..	.. .. .. 1 ..	.. 5 21 32 99	.. .. 1 .. 13	.. 5 21 33 99	.. .. .. .. 1
		<i>Carried forward</i> ..	3,905	72,546	2,592	76,451	4,238

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward ..</i>	3,905	72,546	2,592	76,451	4,238
		XVII.—Accidents, Poisonings and Violence —contd.					
		'E' Code: Alternative Classification of Accidents, Poisonings and Violence (External Causes)—contd.					
AE 140 (e)	E884	Accidental poisoning by mercury and its compounds ..	..	..	..	..	..
(f)	E885	Accidental poisoning by lead and its compounds ..	..	12	..	12	..
(g)	E886	Accidental poisoning by arsenic and antimony and their compounds ..	..	1	..	1	..
(h)	E888	Accidental poisoning by other and un- specified solid or liquid substances ..	..	107	2	107	..
(i)	E890-E895	Accidental poisoning by gases and vapours ..	..	1	..	1	..
(j)	E871-E873 E875-E877 E879-E882 E887	Other accidental poisoning ..	..	8	..	8	..
AE 141	E900-E904	Accidental falls ..	48	835	25	883	31
AE 142	E912	Accident caused by machinery ..	1	19	..	20	..
AE 143	E916	Accident caused by fire and explosion of combustible material ..	7	121	6	128	..
AE 144	E917-E918	Accident caused by hot substance, cor- rosive liquid, steam and radiation ..	10	322	6	332	3
		<i>Carried forward ..</i>	3,971	73,972	2,631	77,943	4,272

APPENDIX IV—continued

RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,971	73,972	2,631	77,943	4,272
		XVII.— <i>Accidents, Poisonings and Violence</i> —contd.					
		'E' Code: <i>Alternative Classification of</i> <i>Accidents, Poisonings and Violence</i> <i>(External Causes)</i> —contd.					
AE 145	E919	Accident caused by firearms	..	8	..	8	..
AE 146	E929	Accidental drowning and submersion	..	22	..	22	..
AE 147	E920	All other accidental causes:—	1	8	..	9	..
(a)	E923	Foreign body entering eye and adnexa	1	59	..	60	..
(b)	E927	Foreign body entering other orifice	..	27	..	27	..
(c)	E928	Accidents caused by bites and stings of venomous animals and insects	..	8	..	8	..
(d)	E913	Other accidents caused by animals	..	86	..	90	..
(e)	E913	Accidents caused by cutting or piercing instruments	4	7	1	7	..
(f)	E914	Accidents caused by electric current	..	1	..	1	..
(g)	E924, E925	Accidental mechanical suffocation	..	..	..	..	..
(h)	E926	Lack of care of infants under one year of age	..	..	..	..	..
(i)	E931	Excessive heat	..	..	..	..	..
(j)	E932	Excessive cold	..	..	..	..	..
		<i>Carried forward</i> ..	3,977	74,198	2,632	78,175	4,272

APPENDIX IV—continued
RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,977	74,198	2,632	78,175	4,272
		XVII.— <i>Accidents, Poisonings and Violence</i> —contd.					
		'E' Code: <i>Alternative Classification of Accidents, Poisonings and Violence (External Causes)</i> —contd.					
AE 147	E933	Hunger, thirst and exposure ..	..	1	..	1	..
	E934	Cataclysm ..	..	..	..	..	..
	E935	Lightning ..	..	2	..	2	..
	E936	Other and unspecified accidents ..	..	8	1	8	..
	E940, E941	Vaccinia including post-vaccinal encephalitis ..	..	..	..	..	..
	E942	Other complications of small-pox vaccination ..	..	..	..	..	..
	E954	Anæsthetic accidents ..	..	1	..	1	..
	E943-E946 E950-E953 E955-E959	Accidents due to medical or surgical intervention ..	..	11	..	11	..
	E910, E911 E915 E921-E922 E930 E960-E962	All other accidental causes ..	12	613	57	625	23
		<i>Carried forward</i> ..	3,989	74,834	2,690	78,823	4,295

APPENDIX IV—continued
 RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,989	74,834	2,690	78,823	4,295
		XVII.— <i>Accidents, Poisonings and Violence</i> —contd.					
		'E' Code: <i>Alternative Classification of Accidents, Poisonings and Violence (External Causes)</i> —contd.					
AE 148		Suicide and self-inflicted injury:—					
(a)	E970	Suicide and self-inflicted injury by analgesic and soporific substances ..	..	6	..	6	..
(b)	E971	Suicide and self-inflicted injury by other solid and liquid substances ..	1	82	22	83	3
(c)	E972	Suicide and self-inflicted injury by gases in domestic use ..	..	1	..	1	..
(d)	E973	Suicide and self-inflicted injury by other gases ..	..	..	..	..	..
(e)	E974	Suicide and self-inflicted injury by hanging or strangulation ..	..	4	1	4	..
(f)	E975	Suicide and self-inflicted injury by submersion (drowning) ..	..	7	..	7	..
(g)	E976	Suicide and self-inflicted injury by firearms and explosives ..	..	1	..	1	..
(h)	E977	Suicide and self-inflicted injury by cutting or piercing instruments ..	..	13	2	13	..
		<i>Carried forward</i> ..	3,990	74,948	2,715	78,938	4,298

APPENDIX IV—continued
RETURN OF DISEASES AND DEATHS FOR THE YEAR 1956—continued

Intermediate List Number	Detailed List Numbers	Cause Groups (Diseases)	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
				Admissions	Deaths		
		<i>Brought forward</i> ..	3,990	74,948	2,715	78,938	4,298
		XVII.—Accidents, Poisonings and Violence —contd.					
		*E' Code: Alternative Classification of Accidents, Poisonings and Violence (External Causes)—contd.					
AE 148	(i) E978	Suicide and self-inflicted injury by jumping from high places ..	..	2	1	2	..
	(j) E963, E979	Suicide and self-inflicted injury by other and unspecified means ..	..	7	..	7	..
AE 149	(a) E980	Homicide and injury purposely inflicted by other persons (not in war):— Non-accidental poisoning by another person ..	..	1	..	1	..
	(b) E981	Assault by firearms and explosives ..	..	43	6	43	4
	(c) E982	Assault by cutting and piercing instru- ments ..	..	168	2	168	..
	(d) E964, E983	Assault by other means ..	..	273	2	274	4
	(e) E984	Injury by intervention of police ..	..	..	..	..	..
	(f) E985	Execution (legal) ..	..	..	..	..	..
AE 150	E990-E999 } E965 }	Injury resulting from operations of war	..	2	..	2	..
		Grand Total (Excluding 205 Transfers and 16 Healthy persons) ..	3,991	75,444	2,726	79,435	4,306

APPENDIX IV—continued
IN-PATIENTS BY RACIAL GROUPS 1956

Racial Group	*Remain- ing at end of 1955	YEARLY TOTAL		†Total cases treated	‡Remain- ing at end of 1956
		Admissions	Deaths		
Europeans	35	1,239	13	1,274	38
Eurasians	53	1,009	23	1,062	32
Chinese	3,227	56,821	2,246	60,048	3,543
Indians and Pakistanis	391	11,336	267	11,727	404
Malays	261	3,828	139	4,089	269
Javanese	} 24	1,211	38	1,235	20
Others					
Total	3,991	75,444	2,726	79,435	4,306
Healthy persons admitted to hospital to accompany children or friends		16		16	
Transfers to other Hospitals from General Hospital		205		205	

APPENDIX V
SINGAPORE (excluding Christmas and Cocos-keeling Islands)

DEATHS BY CAUSE, 1951-56

According to the Intermediate List, adapted for use in Singapore, of the Sixth Revision (1948) of the International List of Diseases and causes of Death

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		I.—INFECTIOUS AND PARASITIC DISEASES						
A 1	001-008	Tuberculosis of respiratory system	673	827	829	811	962	1,052
A 2	010	Tuberculosis of meninges and central nervous system	67	106	91	129	153	169
A 3	011	Tuberculosis of intestines, peritoneum and mesenteric glands	5	9	8	6	4	18
A 4	012.0, 013.0 012, 013 except 012.0, 013.0	Tuberculosis of bones and joints:— Tuberculosis of the vertebral column Tuberculosis of other bones and joints	4 1	7 1	6 1	6 —	8 2	7 2
A 5	014 015 016 017 018 019	Tuberculosis, all other forms:— Tuberculosis of skin and sub-cutaneous cellular tissue Tuberculosis of lymphatic system Tuberculosis of genito-urinary system Tuberculosis of adrenal glands Tuberculosis of other organs Disseminated tuberculosis	— 1 2 — 2 29	1 — 1 — 1 36	— — 1 — — 28	1 1 1 — 1 50	1 3 — — 20 52	2 — — — — 49
A 6	020	Congenital syphilis	12	6	15	27	12	15
A 7	021.0, 021.1 021.2 021.3 021.4	Early Syphilis: — Primary syphilis Secondary syphilis Early syphilis, relapse following treatment Early syphilis (unspecified stage)	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —	— — — — —
		Carried forward	796	995	979	1,033	1,217	1,338

—means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	796	995	979	1,033	1,217	1,338
		I.—INFECTIOUS AND PARASITIC DISEASES—contd.						
A 8	024	Tabes dorsalis	3	3	4	9	2	5
A 9	025	General paralysis of insane	7	46	45	28	28	10
A 10	022	All other syphilis:—	23	14	27	20	27	18
	023	Aneurysm of aorta	11	16	28	13	—	—
	026	Other cardiovascular syphilis	1	1	4	4	16	—
	027	Other syphilis of central nervous system	—	1	1	1	—	—
	028	Other forms of late syphilis	—	1	—	—	2	—
	029	Latent Syphilis	4	2	1	1	10	—
		Syphilis, unqualified	—	—	—	—	—	—
A 11		Gonococcal infections:—	—	—	—	—	—	—
	030	Acute or unspecified gonorrhoea	—	—	—	—	—	—
	031	Chronic gonococcal infection of genito-urinary system	—	—	—	—	—	—
	032	Gonococcal infection of joint	—	—	—	—	—	—
	033	Gonococcal infection of eye	—	—	—	—	—	—
	034-035	Gonococcal infection of other sites	—	1	—	—	—	—
A 12	040	Typhoid fever	8	15	15	12	13	19
A 13	041	Paratyphoid fever and other Salmonella infections:—	—	—	—	—	—	—
	042	Paratyphoid fever A, B, or C	—	—	—	—	—	—
	043	Other Salmonella infections	—	—	—	—	—	—
A 14	043	Cholera	—	—	—	—	—	—
A 15	044	Brucellosis (undulant fever)	—	—	—	—	—	—
A 16	045	Dysentery, all forms:—	4	3	17	7	5	10
	046	Bacillary dysentery	14	11	15	19	13	15
	047-048	Amoebiasis	5	13	15	18	29	17
		Other protozoal and unspecified forms of dysentery	—	—	—	—	—	—
		<i>Carried forward</i> ..	876	1,122	1,151	1,165	1,362	1,432

— means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	876	1,122	1,151	1,165	1,362	1,432
		I.—INFECTIOUS AND PARASITIC DISEASES—contd.						
A 17	050	Scarlet fever	1	—	—	1	—	—
A 18	051	Streptococcal sore throat	—	—	—	—	—	—
A 19	052	Erysipelas	—	—	—	—	1	—
A 20	053	Septicæmia and pyæmia	17	15	11	32	22	16
A 21	055	Diphtheria	66	49	39	59	86	101
A 22	056	Whooping Cough	15	1	1	2	4	—
A 23	057	Meningococcal infections	2	2	2	1	3	2
A 24		Plague:—						
(a)	058.0	Bubonic Plague	—	—	—	—	—	—
(b)	058.1	Pneumonic Plague	—	—	—	—	—	—
(c)	058.2	Other Plague	—	—	—	—	—	—
A 25	060	Leprosy	1	5	6	3	7	2
A 26	061	Tetanus:—						
(a)		Tetanus of the new-born	11	10	16	17	15	16
(b)		Tetanus, other forms	21	20	2	6	20	22
A 27	062	Anthrax	—	—	—	—	—	—
A 28	080	Acute Poliomyelitis	2	6	4	4	7	9
A 29	082	Acute infectious encephalitis	5	1	15	2	2	—
A 30	081, 083	Late effects of acute poliomyelitis and acute infectious encephalitis	1	1	—	1	3	—
A 31	084	Small-pox	—	—	—	—	—	—
		<i>Carried forward</i> ..	1,018	1,232	1,247	1,293	1,532	1,600

— means nil.

APPENDIX V—continued

RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	1,018	1,232	1,247	1,293	1,532	1,600
		<i>Carried forward</i> ..						
		I.—INFECTIOUS AND PARASITIC DISEASES—contd.						
A 32	085	Measles	19	23	17	13	11	26
A 33	091	Yellow fever	—	—	—	—	—	—
A 34	092	Infectious hepatitis	12	12	11	9	7	—
A 35	094	Rabies	—	—	—	—	—	—
A 36		Typhus and other rickettsial diseases:—						
	100	Louse-borne epidemic typhus	—	—	—	—	—	—
	101	Flea-borne epidemic typhus (murine)	—	—	—	—	—	—
	104	Tick-borne epidemic typhus	—	—	—	—	—	—
	105	Mite-borne typhus	—	—	1	—	—	—
	102-103 106-108	Other and unspecified typhus	—	—	—	—	—	—
		Malaria:—						
	110	Vivax malaria (benign tertian)	—	—	1	1	—	—
	111	Malariae malaria (quartan)	—	—	—	—	—	—
	112	Falciparum malaria (malignant tertian)	2	1	5	3	3	8
	114	Mixed malarial infections	—	—	—	—	—	—
	115	Blackwater fever	—	—	—	—	—	—
	113 116-117	Other and unspecified forms of malaria	8	21	17	38	43	62
		Schistosomiasis:—						
	123.0	Schistosomiasis vesical (S. haematobium)	—	—	—	—	—	—
	123.1	Schistosomiasis intestinal (S. mansoni)	—	—	—	—	—	—
	123.2	Schistosomiasis Pulmonary (S. japonicum)	—	—	—	—	—	—
	123.3	Other and unspecified Schistosomiasis	—	—	—	—	—	—
A 38	125	Hydatid disease	—	—	—	—	—	—
	127	Filariasis	—	—	—	—	—	4
A 39	129	Ankylostomiasis	3	2	1	2	4	3
A 40								
A 41								
		<i>Carried forward</i> ..	1,062	1,291	1,300	1,359	1,600	1,703

— means nil

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	1,062	1,291	1,300	1,359	1,600	1,703
A 42		I.—INFECTIOUS AND PARASITIC DISEASES—contd.						
(a)	124	Other diseases due to helminths:—						
(b)	126	Other trematode infestation ..						
(c)	128	Tape worm (infestation) and other cestode infestation ..				2		
(d)	130.0	Trichiniasis ..	7	11	15	30	16	22
(e)	130.1-130.3	Ascariasis ..	3		1	3	1	
		Other diseases due to helminths ..						
A 43		All other diseases classified as infective and parasitic:—						
(a)	036	Chancroid ..						
(b)	037	Lymphogranuloma venereum ..						
(c)	038	Granuloma inguinale, venereal ..					1	
(d)	039	Other and unspecified venereal diseases ..						1
(e)	049	Food poisoning (infection and intoxication) ..						
(f)	059	Tularemia ..						
(g)	063	Gas Gangrene ..						
(h)	064.2	Glanders ..						
(i)	064.3	Meliodosis ..						
(j)	064.0, 064.1, 064.4	Other bacterial diseases ..						
(k)	070	Vincent's infection ..						6
(l)	071	Relapsing fever ..						
(m)	072	Leptospirosis icterohaemorrhagica (Weil's disease) ..				2	4	
(n)	073	Yaws ..						
(o)	086	Rubella (German measles) ..						
(p)	087	Chicken-pox ..						1
(q)	088	Herpes Zoster ..						
(r)	089	Mumps ..						
(s)	090	Dengue ..						
(t)	093	Glandular fever ..						
(u)	095	Trachoma ..						
(v)	120	Leishmaniasis ..						
		<i>Carried forward</i> ..	1,072	1,302	1,316	1,397	1,622	1,733

— means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
A 43	121 131 132 133,134 135 054,074 096,122 136-138	<i>Brought forward</i> .. I.—INFECTIOUS AND PARASITIC DISEASES—conid. Trypanosomiasis Dermatophytosis Actinomycosis Other fungus infections Scabies All other diseases classified as infective and parasitic	1,072	1,302	1,316	1,397	1,622	1,733
		SUB-TOTAL I ..	1,074	1,315	1,323	1,403	1,623	1,737
A 44	140-148	II.—NEOPLASMS Malignant neoplasm of buccal cavity and pharynx	51	50	33	38	12	7
A 45	150	Malignant neoplasm of oesophagus	52	50	50	37	27	
A 46	151	Malignant neoplasm of stomach	144	143	109	124	95	86
A 47	152 153	Malignant neoplasm of intestine except rectum:— Malignant neoplasm of small intestine, including duodenum Malignant neoplasm of large intestine, except rectum	1 24	1 18	— 16	— 22	4 3	— —
A 48	154	Malignant neoplasm of rectum	26	14	21	11	9	—
A 49	161	Malignant neoplasm of larynx	11	9	14	9	3	—
A 50	162-163	Malignant neoplasm of trachea, and of bronchus and lung not as secondary	72	72	59	55	28	18
A 51	170	Malignant neoplasm of breast	33	32	25	23	29	15
		Sub-Total II Carried forward ..	414	389	327	319	210	126
		Carried forward ..	1,488	1,704	1,650	1,722	1,833	1,863

— means nil.

APPENDIX V—continued
 RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	1,488	1,704	1,650	1,722	1,833	1,863
		Sub-Total II <i>Brought forward</i> ..	414	389	327	319	210	126
		II.—NEOPLASMS—contd.						
A 52	171	Malignant neoplasm of cervix uteri ..	25	33	34	29	43	32
A 53	172-174	Malignant neoplasm of other and unspecified parts of uterus ..	25	24	27	28	7	—
A 54	177	Malignant neoplasm of prostate ..	6	2	2	3	4	—
A 55	190-191	Malignant neoplasm of skin ..	15	12	20	8	10	8
A 56	196-197	Malignant neoplasm of bone and connective tissue ..	5	6	9	4	5	—
A 57	155-156	Malignant neoplasm of all other and unspecified sites:—						
(a)	157	Malignant neoplasm of liver ..	84	74	77	75	62	52
(b)	158	Malignant neoplasm of pancreas ..	14	4	4	6	2	—
(c)	159	Malignant neoplasm of peritoneum ..	4	1	4	6	10	—
(d)	159	Malignant neoplasm of unspecified digestive organs ..	—	—	—	—	2	91
(e)	175-176	Malignant neoplasm of other and unspecified female genital organs	3	13	7	10	1	—
(f)	178-179	Malignant neoplasm of other and unspecified male genital organs	1	2	3	1	3	—
(g)	180-181	Malignant neoplasm of kidney, bladder and other urinary organs	10	8	17	11	17	—
(h)	160							
	164-165	Malignant neoplasm of all other and unspecified sites ..	48	52	41	41	46	23
	192-195							
	198-199							
A 58	204	Leukæmia and Aleukæmia ..	31	27	23	23	23	11
A 59	200	Lymphosarcoma and other neoplasms of lymphatic and hæmato- poietic system:—						
(a)	200	Lymphosarcoma and reticulosarcoma ..	5	3	4	7	9	—
(b)	201	Hodgkin's disease ..	6	3	4	4	2	3
		Sub-Total II <i>Carried forward</i> ..	696	653	603	575	456	349
		<i>Carried forward</i> ..	1,770	1,968	1,926	1,978	2,079	2,086

— means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	1,770	1,968	1,926	1,978	2,079	2,086
		Sub-Total II <i>Brought forward</i> ..	696	653	603	575	456	349
		II.—NEOPLASMS—contd.						
A 59	202-203 205	Other neoplasm of lymphatic and haematopoietic system ..	1	2	2	1	19	—
A 60	210-211 213-217 218 212 219-229	Benign neoplasms and neoplasms of unspecified nature:— Benign neoplasm of buccal cavity, pharynx and digestive system .. Benign neoplasm of female genital organs .. Benign neoplasm of male genital organs .. Benign neoplasm of other and unspecified organs and tissue ..	— — — 8	2 2 — 19	1 1 — 13	4 — — 27	1 3 — 7	— 2 — 2
	230 233-235 231-232 236-239	Neoplasm of unspecified nature of digestive organs .. Neoplasm of unspecified nature of other female genital organs .. Neoplasm of unspecified nature of other unspecified organs ..	2 — 21	— — 4	1 1 5	— — 14	— 2 21	— 6 11
		SUB-TOTAL II ..	728	682	627	621	509	370
		III.—ALLERGIC ENDOCRINE SYSTEM, METABOLIC AND NUTRITIONAL DISEASES						
		IV.—DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS						
A 61	250-251	Nontoxic goitre	1	—	—	—	1	1
A 62	252	Thyrototoxicosis with or without goitre	6	7	5	6	1	1
A 63	260	Diabetes mellitus	69	73	54	65	51	46
		Aggregate of Sub-Totals III and IV <i>Carried forward</i> ..	76	80	59	71	53	48
		<i>Carried forward</i> ..	1,878	2,077	2,009	2,095	2,185	2,155

— means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
A 64		Brought forward ..	1,878	2,077	2,009	2,095	2,185	2,155
		Aggregate of Sub-Totals III and IV Brought forward ..	76	80	59	71	53	48
		III.—ALLERGIC ENDOCRINE SYSTEM, METABOLIC AND NUTRITIONAL DISEASES—contd.						
		IV.—DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS—contd.						
		Avitaminoses and other deficiency states:—						
	(a)	Beri-beri	99	93	100	129	257	256
	(b)	Pellagra	—	—	—	—	—	—
	(c)	Scurvy	—	—	—	—	—	—
	(d)	Rickets	1	1	2	1	1	—
	(e)	Osteomalacia	—	—	—	—	—	—
	(f)	Steatorrhea and sprue	—	—	—	—	—	—
	(g)	Malnutrition, unqualified	48	32	31	31	30	1
	(h)	Other avitaminoses and nutritional deficiency states	9	16	34	41	45	1
A 65		Anæmias:—						
	(a)	Pernicious and other hyperchromic anæmias	—	2	1	5	1	2
	(b)	Iron deficiency anæmias (hypochromic)	—	—	—	—	—	—
	(c)	Other specified and unspecified anæmias	58	48	24	26	44	66
A 66		Allergic disorders; all other endocrine, metabolic and blood diseases:—						
	(a)	Asthma	141	155	156	164	136	160
	(b)	Angioneurotic œdema, urticaria and other allergic disorders	2	—	—	—	—	—
	(c)	Myxœdema and cretinism	1	1	—	—	—	—
	(d)	Other diseases of thyroid gland	—	—	—	—	—	—
	(e)	Disorders of pancreatic internal secretion other than diabetes mellitus	—	—	—	—	—	—
	(f)	Diseases of parathyroid gland	—	—	—	—	2	—
	(g)	Diseases of pituitary gland	—	—	—	—	—	1
		Aggregate of Sub-Totals III and IV Carried forward ..	436	428	408	469	570	535
		Carried forward ..	2,238	2,425	2,358	2,493	2,702	2,642

— means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	2,238	2,425	2,358	2,493	2,702	2,642
		<i>Aggregate of Sub-Totals III and IV Brought forward</i> ..	436	428	408	469	570	535
		III.—ALLERGIC ENDOCRINE SYSTEM, METABOLIC AND NUTRITIONAL DISEASES— <i>contd.</i>						
		IV.—DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS— <i>contd.</i>						
A 66	273	Diseases of thymus gland ..	—	—	1	—	—	—
(h)	274	Disease of adrenal gland ..	1	—	—	—	—	—
(i)	275-277	Other diseases of endocrine glands ..	—	—	—	—	1	—
(j)	288	Gout ..	—	—	—	—	—	—
(k)	287, 289	Other metabolic diseases ..	1	3	—	2	—	2
(l)								
(m)	294	Polycythemia ..	—	—	—	—	—	—
(n)	295	Hæmophilia ..	—	—	—	—	—	2
(o)	296	Purpura and other hæmorrhagic conditions ..	3	6	8	—	3	7
(p)	297	Agranulocytosis ..	—	—	—	—	—	—
(q)	298	Diseases of spleen ..	—	1	—	—	1	3
(r)	299	Other diseases of blood and blood-forming organs ..	—	—	—	1	10	—
		AGGREGATE OF SUB-TOTALS III AND IV ..	441	438	417	482	585	549
		V.—MENTAL, PSYCHONEUROTIC AND PERSONALITY DISORDERS						
		Psychoses:—						
A 67	300	Schizophrenic disorders (dementia præcox) ..	1	2	6	5	1	—
(a)	301	Maniac-depressive reaction ..	2	1	7	1	3	—
(b)	302	Involutional melancholia ..	—	—	—	—	—	—
(c)	303	Paranoia and paranoid states ..	—	—	—	—	—	—
(d)	304	Senile psychoses ..	—	5	5	1	1	—
(e)								
(f)	305-309	Other and unspecified psychoses ..	1	—	3	7	3	8
		Sub-Total V Carried forward ..	5	13	21	14	8	8
		Carried forward ..	2,248	2,448	2,388	2,520	2,725	2,664

— means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
A 68		<i>Brought forward</i> ..	2,248	2,448	2,388	2,520	2,725	2,664
(a)		Sub-Total V <i>Brought forward</i> ..	5	13	21	14	8	8
(b)		V.—MENTAL, PSYCHONEUROTIC AND PERSONALITY DISORDERS—contd.						
(c)		Psychoneurosis and disorders of personality:—						
(d)	311	Hysterical reaction ..	1	—	—	—	—	—
(e)	314	Neurotic-depressive reaction ..	—	—	—	—	—	—
	322	Alcoholism ..	—	—	1	—	—	—
	323	Other drug addiction ..	—	—	—	—	1	11
	310, 312-313	Other psychoneurosis and disorders of personality ..	—	—	—	—	—	—
	315-321, 324	Mental deficiency ..	1	—	—	—	—	—
	326							
A 69	325		7	13	22	14	9	19
		SUB-TOTAL V ..						
A 70		VI.—DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS						
		Vascular lesions affecting central nervous system:—						
(a)	331	Cerebral hæmorrhage ..	335	301	257	185	190	147
(b)	332	Cerebral embolism and thrombosis ..	88	72	67	28	39	—
(c)	330	Other vascular lesions affecting central nervous system ..	18	5	14	19	2	—
	333-334							
A 71	340	Non-meningococcal meningitis ..	72	60	53	43	39	49
		Sub-Total VI <i>Carried forward</i> ..	513	438	391	275	270	196
		<i>Carried forward</i> ..	2,763	2,886	2,780	2,795	2,996	2,871

— means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	2,763	2,886	2,780	2,795	2,996	2,871
		Sub-Total VI <i>Brought forward</i> ..	513	438	391	275	270	196
		VI.—DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS—contd.						
A 72	345	Multiple sclerosis	—	—	—	—	—	—
A 73	353	Epilepsy	9	3	16	4	6	5
A 74	370	Inflammatory diseases of eye:—	—	—	—	—	—	—
(a)	371-379	Conjunctivitis and ophthalmia	—	—	—	—	—	—
(b)		Other inflammatory diseases of eye	—	—	—	—	—	—
A 75	385	Cataract	—	—	—	—	—	—
A 76	387	Glaucoma	—	—	—	—	1	—
A 77	390	Otitis media and mastoiditis:—	—	—	—	—	—	—
(a)	391-393	Otitis externa	—	—	—	—	—	11
(b)		Otitis media and mastoiditis	8	22	16	25	17	—
(c)	394	Other inflammatory diseases of ear	—	—	—	—	—	1
A 78	380-384	All other diseases of the nervous system and sense organs:—	—	—	—	—	—	—
(a)	386, 388	All other diseases and conditions of eye	—	—	—	—	—	1
(b)	389	Intracranial and intraspinal abscess	6	6	6	5	—	—
(c)	342	Encephalitis, myelitis and encephalomyelitis	42	54	43	47	39	29
(d)	343	Paralysis agitans	4	1	2	3	2	6
(e)	350	Other cerebral paralysis	94	101	104	77	—	—
(f)	352	Motor neurone disease and muscular atrophy	1	—	—	—	—	—
(g)	356	Other diseases of spinal cord	—	—	—	—	—	—
(h)	357	Other and unspecified forms of neuralgia and neuritis	—	—	—	—	—	—
(i)	366	Other diseases of cranial nerves	—	—	—	—	—	—
(j)	367	Diseases of peripheral autonomic nervous system	—	—	—	—	—	—
		Sub-Total VI <i>Carried forward</i> ..	677	627	579	441	338	252
		<i>Carried forward</i> ..	2,927	3,075	2,968	2,961	3,064	2,927

— means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
A 78	(k) 341, 344 351, 354 355 360-365 368 395-398	Brought forward ..	2,927	3,075	2,968	2,961	3,064	2,927
		Sub-Total VI Brought forward ..	677	627	579	441	338	252
		VI.—DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS—contd.						
		All other diseases of the nervous system and sense organs ..	11	6	7	16	19	22
		SUB-TOTAL VI ..	688	633	586	457	357	274
		VII.—DISEASES OF THE CIRCULATORY SYSTEM						
A 79	(a) (b) (c)	Rheumatic fever:—						
		Rheumatic fever without mention of heart involvement ..	1	1	2	5	1	
		Rheumatic fever with heart involvement ..	3	1	6	16	41	
A 80	(a) (b) (c) (d)	Chorea ..	—	—	—	2	—	—
		Chronic rheumatic heart disease:—						
		Diseases of valves specified as rheumatic ..	68	53	68	55	47	102
		Other endocarditis specified as rheumatic ..	32	32	7	21	17	—
		Other myocarditis specified as rheumatic ..	1	1	1	—	—	—
A 81	(a) (b) (c)	Other heart disease specified as rheumatic ..	25	40	26	6	13	—
		Arteriosclerotic and degenerative heart disease:—						
		Arteriosclerotic heart disease including coronary disease ..	215	189	159	140	107	120
		Chronic endocarditis not specified as rheumatic ..	39	44	53	30	30	—
		Other myocardial degeneration ..	89	64	52	43	45	—
		Sub-Total VII Carried forward ..	473	425	374	336	280	264
		Carried forward ..	3,411	3,506	3,349	3,313	3,363	3,213

—means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
A 82		<i>Brought forward</i> Sub-Total VII <i>Brought forward</i> VII.—DISEASES OF THE CIRCULATORY SYSTEM—continued	3,411	3,506	3,349	3,313	3,363	3,213
			473	425	374	336	280	264
		Other diseases of heart:—						
	430	Acute and subacute endocarditis	24	16	10	9	9	12
	431	Acute myocarditis not specified as rheumatic	1	4	4	8	5	47
	432	Pericarditis not specified as rheumatic	1	—	—	2	6	4
	433	Functional disease of heart	6	7	10	13	—	—
	434	Other and unspecified diseases of heart	179	229	196	179	382	343
		Hypertension with heart disease	54	50	86	113	112	180
A 83	440-443	Hypertension without mention of heart	134	130	75	63	79	—
A 84	444-447	Disease of arteries:—						
	450	General arteriosclerosis	15	21	8	24	32	32
	451	Aortic aneurysm specified as non-syphilitic and dissecting aneurysm	1	1	2	4	11	—
	452	Other aneurysm, except of heart and aorta	—	3	4	7	8	—
	453	Peripheral vascular disease	—	1	—	—	—	—
	454	Arterial embolism and thrombosis	—	—	—	—	—	—
	455	Gangrene of unspecified cause	4	3	6	—	1	3
	456	Other diseases of arteries	1	—	1	2	4	2
A 86		Other diseases of circulatory system:—						
	460, 462	Varicose veins	1	5	3	—	—	3
	461	Hæmorrhoids	—	—	1	—	—	—
	463-464	Phlebitis and thrombophlebitis	—	1	1	—	—	—
	465	Pulmonary embolism and infarction	4	2	3	—	1	—
	466	Other venous embolism and thrombosis	1	—	—	5	2	—
	467	Other diseases of circulatory system	3	—	—	—	4	1
	468	Adenitis, Lymphadenitis, and other diseases of lymph nodes and lymph channels	—	—	1	—	—	—
		SUB-TOTAL VII	902	898	786	781	945	891
		<i>Carried forward</i>	3,840	3,979	3,761	3,758	4,028	3,840

—means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	3,840	3,979	3,761	3,758	4,028	3,840
		VIII.—DISEASES OF THE RESPIRATORY SYSTEM						
A 87	470	Acute upper respiratory infections:—						
	471	Acute nasopharyngitis (common cold)	1	2	2	1	—	—
	472	Acute sinusitis ..	—	1	—	—	—	—
	473	Acute pharyngitis ..	3	9	9	7	6	—
	474	Acute tonsillitis ..	1	9	2	3	1	—
		Acute laryngitis and tracheitis ..	1	3	3	4	5	3
(f)	475	Acute upper respiratory infection of multiple or unspecified sites ..	—	—	10	—	—	2
A 88	480-483	Influenza ..	37	25	30	39	22	22
A 89	490	Lobar Pneumonia ..	163	176	119	169	164	134
A 90	491	Broncho-pneumonia ..	610	667	732	909	925	1,059
A 91	492-493	Primary atypical, other and unspecified pneumonia ..	248	187	215	259	344	292
A 92	500	Acute bronchitis ..	20	13	36	25	35	40
A 93	501	Bronchitis, chronic and unqualified:—						
	502	Bronchitis unqualified ..	16	19	22	5	11	32
		Chronic bronchitis ..	97	109	151	161	159	172
A 94	510	Hypertrophy of tonsils and adenoids ..	—	—	—	—	—	—
A 95	518	Empyema and Abscess of lung:—						
		Empyema ..	9	14	8	18	9	7
	521	Abscess of lung ..	14	7	11	10	12	13
		Sub-Total VIII <i>Carried forward</i> ..	1,220	1,241	1,350	1,610	1,693	1,776
		<i>Carried forward</i> ..	5,060	5,220	5,111	5,368	5,721	5,616

—means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	5,060	5,220	5,111	5,368	5,721	5,616
		Sub-Total VIII <i>Brought forward</i> ..	1,220	1,241	1,350	1,610	1,693	1,776
		VIII.—DISEASES OF THE RESPIRATORY SYSTEM—continued						
A 96	519	Pleurisy	4	6	4	3	5	6
A 97		All other respiratory diseases:—						
(a)	517	Other diseases of upper respiratory tract ..	3	6	7	1	3	—
(b)	520	Spontaneous pneumothorax	2	3	1	1	—	—
(c)	522	Pulmonary congestion and hypostasis ..	15	14	5	8	—	2
(d)	525	Other chronic interstitial pneumonia ..	3	4	5	2	3	1
(e)	523	Pneumoconiosis	—	—	—	—	—	—
(f)	526	Bronchiectasis	21	27	22	25	10	21
(g)	511-516 524 527	All other respiratory diseases	18	10	15	32	90	178
		SUB-TOTAL VIII ..	1,286	1,311	1,409	1,682	1,806	1,984
		IX.—DISEASES OF THE DIGESTIVE SYSTEM						
		Diseases of teeth and supporting structures:—						
A 98		Dental caries	—	—	—	—	—	—
(a)	530	Abscesses and other inflammatory diseases of supporting structures	—	—	—	—	—	—
(b)	531, 532	of teeth	—	—	—	—	—	—
(c)	533-535	Other diseases of teeth and supporting structures	—	—	—	—	1	—
A 99	540	Ulcer of stomach	67	72	69	66	89	62
		Sub-Total IX <i>Carried forward</i> ..	67	72	69	66	90	62
		<i>Carried forward</i> ..	5,193	5,362	5,239	5,506	5,924	5,886

—means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i>	5,193	5,362	5,239	5,506	5,924	5,886
		Sub-Total IX Brought forward	67	72	69	66	90	62
		IX.—DISEASES OF THE DIGESTIVE SYSTEM—Continued						
A 100	541	Ulcer of duodenum	6	29	16	10	9	21
A 101	543	Gastritis and duodenitis	7	38	31	10	13	12
A 102	550-553	Appendicitis	23	17	23	20	12	21
A 103	(a) (b) (c) (d) (e)	Intestinal obstruction and hernia:— Hernia of abdominal cavity without mention of obstruction Hernia of abdominal cavity with obstruction Intussusception Volvulus	2 6 7 2	6 10 3 1	1 10 12 4	7 10 7 1	5 16 11 24	4 14 — —
	570.1, 570.2 570.4, 570.5	Other intestinal obstruction without mention of hernia	19	18	27	19	9	44
A 104	(a) (b) (c)	Gastro-enteritis and colitis, except diarrhoea of the newborn:— Gastro-enteritis and colitis, ages between 4 weeks and 2 years Gastro-enteritis and colitis, ages 2 years and over Chronic enteritis and ulcerative colitis	456 142 5	531 137 4	662 173 14	743 193 12	746 246 —	944 179 —
A 105	(a) (b)	Cirrhosis of liver:— Cirrhosis of liver without mention of alcoholism Cirrhosis of liver with alcoholism	116 1	77 —	92 —	78 —	37 42	88 —
A 106	(a) (b)	Cholelithiasis and Cholecystitis:— Cholelithiasis Cholecystitis without mention of calculi	5 16	6 15	17 5	9 7	1 7	5 10
		Sub-Total IX Carried forward	880	964	1,156	1,192	1,268	1,404
		<i>Carried forward</i>	6,006	6,254	6,326	6,632	7,102	7,228

—means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951	
A 107		<i>Brought forward</i> ..	6,006	6,254	6,326	6,632	7,102	7,228	
		Sub-Total IX <i>Brought forward</i> ..	880	964	1,156	1,192	1,268	1,404	
		IX.—DISEASES OF THE DIGESTIVE SYSTEM— <i>contd.</i>							
				Other diseases of Digestive System:—					
			536	Stomatitis ..	1	2	3	1	—
			537, 538	Other diseases of buccal cavity ..	—	—	—	2	2
			539.0	Functional disorders of œsophagus ..	—	—	—	1	—
			539.1	Other diseases of œsophagus ..	2	1	—	1	18
			544	Disorders of function of stomach ..	1	3	—	2	—
			542, 545	Other diseases of stomach and duodenum ..	14	14	12	15	63
			583.0	Constipation ..	—	—	—	25	—
			573 except 573.0	Other functional disorders of intestines ..	—	1	—	—	—
			574	Anal fissure and fistula ..	—	—	—	1	—
			575	Abscess of anal and rectal regions ..	—	—	—	—	—
			576	Peritonitis ..	26	24	15	—	16
			577, 578	Other diseases of intestines and peritoneum ..	1	2	3	4	3
			580	Acute yellow atrophy of liver ..	12	22	13	14	8
			582, 583	Other diseases of liver ..	21	21	25	24	22
			586	Other diseases of gall-bladder and biliary ducts ..	3	3	3	3	5
			587	Diseases of pancreas ..	7	9	3	1	6
		SUB-TOTAL IX ..	968	1,066	1,239	1,280	1,395	1,550	
A 108		X.—DISEASES OF THE GENITO-URINARY SYSTEM							
				Acute nephritis ..	10	16	19	28	33
				Sub-Total X <i>Carried forward</i> ..	10	16	23	28	33
				<i>Carried forward</i> ..	6,104	6,372	6,432	7,257	7,407

—means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	6,104	6,372	6,432	6,739	7,257	7,407
		Sub-Total X <i>Brought forward</i> ..	10	16	23	19	28	33
		X.—DISEASES OF THE GENITO-URINARY SYSTEM—cont'd.						
A 109	591	Chronic, other and unspecified nephritis:—		6	6	6	2	—
	592	Nephritis with edema, including nephrosis	15	125	168	176	188	167
	593	Chronic nephritis ..	117	98	68	53	110	87
	594	Nephritis not specified as acute or chronic	96	—	—	—	1	—
A 110	600	Other renal sclerosis ..	—	47	19	15	—	16
A 111	602	Infections of kidney ..	36	—	—	—	—	—
	604	Calculi of urinary system:—	4	6	2	2	3	1
	610	Calculi of kidney and ureter ..	—	—	—	1	6	2
	620-621	Calculi of other parts of urinary system ..	—	—	—	—	—	—
A 112	610	Hyperplasia of prostate ..	3	5	6	3	—	—
A 113	620-621	Diseases of breast ..	—	—	—	—	—	—
A 114	603	Other diseases of genito-urinary system:—	3	1	1	—	6	—
	605	Other diseases of kidney and ureter ..	2	3	5	—	4	—
	606	Cystitis ..	1	4	1	2	2	1
	608	Stricture of urethra ..	—	1	3	2	—	1
	607, 609	Other diseases of urethra ..	—	—	—	1	—	1
	612	Other diseases of prostate ..	—	—	—	3	2	6
	613	Hydrocele ..	—	—	—	—	—	—
	614	Orchitis and epididymitis ..	—	—	—	—	1	—
	611	Other diseases of male genital organs ..	2	2	2	—	—	1
	615-617	Salpingitis and oophoritis ..	1	—	4	1	1	—
	622-624		—	—	—	—	—	—
		Sub-Total X <i>Carried forward</i> ..	291	316	309	286	354	322
		<i>Carried forward</i> ..	6,385	6,672	6,718	7,006	7,583	7,696

—means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
A 114		<i>Brought forward</i> ..	6,385	6,672	6,718	7,006	7,583	7,696
		Sub-Total X <i>Brought forward</i> ..	291	316	309	286	354	322
		X.—DISEASES OF THE GENITO-URINARY SYSTEM—contd.						
		Other diseases of ovary and Fallopian tube ..	—	—	—	—	—	5
	(k)	Diseases of parametrium and pelvic peritoneum (female) ..	—	1	2	—	—	—
	(l)	Infective disease of uterus, vagina and vulva ..	—	5	1	—	—	—
	(m)	Other diseases of uterus ..	1	—	2	1	—	2
	(n)	Disorders of menstruation ..	—	—	—	—	3	—
	(o)	Other diseases of female genital organs ..	1	—	—	—	—	2
	(p)	All other diseases of the genito-urinary system ..	—	1	—	—	1	—
(q)			1	—	—	3	—	
		SUB-TOTAL X ..	294	323	314	288	361	331
A 115		XI.—DELIVERIES AND COMPLICATIONS OF PREGNANCY, CHILD BIRTH AND THE PUERPERIUM						
		Sepsis of pregnancy, childbirth and the puerperium:—						
	(a)	Pyelitis and pyelonephritis of pregnancy ..	—	—	—	—	—	—
	(b)	Other infections of genito-urinary tract during pregnancy ..	—	—	1	—	—	—
	(c)	Sepsis of childbirth and the puerperium ..	1	4	8	4	2	—
	(d)	Puerperal phlebitis and thrombosis ..	—	—	—	—	—	—
	(e)	Puerperal pulmonary embolism ..	—	—	—	1	—	—
		Toxæmia of pregnancy and the puerperium:—						
	(a)	Pre-eclampsia of pregnancy ..	—	3	4	—	3	—
	(b)	Eclampsia of pregnancy ..	5	4	8	7	13	8
	Sub-Total XI <i>Carried forward</i> ..	6	11	21	12	18	8	
	<i>Carried forward</i> ..	6,394	6,690	6,744	7,020	7,608	7,713	

—means nil.

APPENDIX V—continued
 RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
A 116		<i>Brought forward</i> ..	6,394	6,690	6,744	7,020	7,608	7,713
		Sub-Total XI <i>Brought forward</i> ..	6	11	21	12	18	8
		XI.—DELIVERIES AND COMPLICATIONS OF PREGNANCY, CHILD BIRTH AND THE PUERPERIUM—contd.						
		Hyperemesis gravidarum ..	—	—	1	1	—	—
	642.4	Acute yellow atrophy of liver of pregnancy ..	—	—	—	—	—	—
	642.5	Other toxæmias of pregnancy ..	6	6	11	10	14	15
		Abortion with toxæmia, without mention of sepsis ..	—	—	—	—	—	—
	652	Puerperal eclampsia ..	1	—	—	1	2	13
	685	Other forms of puerperal toxæmia ..	—	—	—	2	5	—
	642.0, 642.1	Hæmorrhage of pregnancy and childbirth:—	—	—	—	—	—	—
	643	Placenta prævia ..	—	—	1	1	5	1
	644	Other hæmorrhage of pregnancy ..	—	—	—	4	5	4
	670	Delivery complicated by placenta prævia or antepartum hæmorrhage ..	1	5	4	—	2	—
		age ..	3	3	6	3	1	—
	671	Delivery complicated by retained placenta ..	12	12	17	18	17	—
	672	Delivery complicated by other postpartum hæmorrhage ..	—	—	—	—	—	—
		Abortion without mention of sepsis or toxæmia ..	—	4	—	1	1	3
A 118	650	Abortion with sepsis ..	1	1	—	2	1	1
A 119	651	Other complications of pregnancy, childbirth and the puerperium:—	—	—	—	—	—	—
		Ectopic pregnancy ..	2	2	2	5	1	5
	645	Anæmia of pregnancy ..	—	1	1	—	—	—
	646	Delivery without complications ..	2	1	2	1	1	—
	660	Pyrexia of unknown origin during the puerperium ..	—	—	—	—	—	—
	683	Mastitis and other disorders of lactation ..	3	—	2	1	—	1
	689	Other complications of pregnancy, childbirth and the puerperium ..	—	—	—	—	—	—
	647-649		8	6	20	6	14	29
	673-680		—	—	—	—	—	—
	687, 688		—	—	—	—	—	—
		SUB-TOTAL XI ..	45	52	88	68	87	80
		<i>Carried forward</i> ..	6,433	6,731	6,811	7,076	7,677	7,785

—means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	6,433	6,731	6,811	7,076	7,677	7,785
		XII.—DISEASES OF THE SKIN AND CELLULAR TISSUE						
		XIII.—DISEASES OF THE BONES AND ORGANS OF MOVEMENT						
		Infections of skin and subcutaneous tissue:—						
A 121	690	Boil and carbuncle	1	3	3	3	5	—
	691-693	Cellulitis and abscess	9	11	21	29	24	41
	694-698	Other infections of skin and subcutaneous tissue	—	—	—	3	5	25
A 122	720	Arthritis and spondylitis:—	1	—	1	—	—	—
	721	Acute arthritis due to pyogenic organisms	—	—	—	—	—	—
	722	Acute nonpyogenic arthritis	2	5	1	1	—	—
	723-725	Rheumatoid arthritis and allied conditions	3	2	—	—	1	3
		Arthritis specified and unspecified	—	—	—	—	—	—
A 123	726	Muscular rheumatism and rheumatism, unspecified:—	—	1	1	1	—	—
	727	Rheumatism unspecified	1	—	—	—	—	—
A 124	730	Osteomyelitis and periostitis	—	2	1	3	5	—
A 125	737	Ankylosis and acquired musculoskeletal deformities:—	—	—	—	—	—	—
	745-749	Ankylosis of joint	—	—	—	—	—	—
		Other acquired musculoskeletal deformities	—	—	—	—	—	—
A 126	715	All other diseases of skin and musculoskeletal system:—	2	2	2	1	1	—
	700-714	Chronic ulcer of skin (including tropical ulcer)	6	9	8	10	6	—
	716	All other diseases of skin and subcutaneous tissue	—	—	—	—	—	—
	731-736	All other diseases of musculoskeletal system	—	1	—	3	2	3
	738-744		—	—	—	—	—	—
		Aggregate of Sub-Totals XII and XIII ..	25	36	38	54	49	72
		<i>Carried forward</i> ..	6,458	6,767	6,849	7,130	7,726	7,857

—means nil.

APPENDIX V—continued
 RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter-mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	6,458	6,767	6,849	7,130	7,726	7,857
		XIV.—CONGENITAL MALFORMATIONS						
A 127	751	Spina bifida and meningocele ..	9	7	13	6	5	2
A 128	754	Congenital malformations of circulatory system ..	83	55	75	41	18	46
A 129	750	All other congenital malformations:—	16	5	13	8	6	—
	752	Monstrosity ..	14	6	6	5	7	7
	753	Congenital hydrocephalus ..	1	3	1	1	4	—
		Other congenital malformations of nervous system and sense organs ..	2	3	3	1	—	—
	755	Cleft palate and harelip ..	—	1	4	5	—	2
	756.0	Congenital hypertrophic pyloric stenosis ..	3	8	4	12	1	6
	756.1	Imperforate anus ..	25	17	17	16	16	—
	756.2	Other congenital malformations of digestive system ..	2	2	3	5	4	—
	757	Congenital malformations of genito-urinary system ..	—	—	—	—	1	—
	758	Congenital malformations of bone and joint ..	9	9	4	9	14	20
	759	Other and unspecified congenital malformations, not elsewhere classified ..	164	115	143	109	79	83
		SUB-TOTAL XIV ..						
		XV.—CERTAIN DISEASES OF EARLY INFANCY						
A 130	760	Birth injuries:—	121	34	51	84	45	—
	761	Intracranial and spinal injury at birth ..	2	5	2	5	—	3
		Other birth injury ..	127	109	135	127	65	57
A 131	762	Postnatal asphyxia and atelectasis ..	250	148	188	216	110	60
		Sub-Total XV Carried forward ..	6,872	7,030	7,180	7,455	7,915	8,000
		Carried forward ..						

— means nil.

APPENDIX V—continued
 RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	6,872	7,030	7,180	7,455	7,915	8,000
		Sub-Total XV <i>Brought forward</i> ..	250	148	188	216	110	60
		XV.—CERTAIN DISEASES OF EARLY INFANCY—continued.						
		Infections of the newborn:—						
A 132	763	Pneumonia of newborn ..	102	78	99	184	172	—
(b)	764	Diarrhoea of newborn ..	76	114	123	251	257	—
(c)	765	Ophthalmia neonatorum ..	—	—	—	4	—	—
(d)	766	Pemphigus neonatorum ..	—	—	—	—	3	—
(e)	767	Umbilical sepsis ..	1	3	3	2	3	68
(f)	768	Other sepsis of newborn ..	—	1	—	3	11	—
A 133	770	Hemolytic disease of newborn ..	93	109	50	146	45	77
A 134	769 771-772	All other defined diseases of early infancy ..	11	14	22	35	78	12
A 135	773	Ill-defined diseases peculiar to early infancy, and immaturity unqualified:—						
(a)		Ill-defined diseases peculiar to early infancy ..	38	30	47	89	126	106
(b)	774-776	Immaturity and immaturity unqualified ..	404	558	637	514	449	454
		SUB-TOTAL XV ..	975	1,055	1,169	1,444	1,254	777
		XVI.—SYMPTOMS, SENILITY AND ILL-DEFINED CONDITIONS						
A 136	794	Senility without mention of psychoses ..	937	876	722	781	925	1,027
		Sub-Total XVI <i>Carried forward</i> ..	937	876	722	781	925	1,027
		<i>Carried forward</i> ..	8,534	8,813	8,883	9,464	9,984	9,744

— means nil.

APPENDIX V—continued

RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
A 137	(a)	Brought forward ..	8,534	8,813	8,883	9,464	9,984	9,744
		Sub-Total XVI Brought forward ..	937	876	722	781	925	1,027
(b)	788.8	XVI.—SYMPTOMS, SENILITY AND ILL-DEFINED CONDITIONS—continued.	672	877	964	1,077	1,055	1,399
		Ill-defined and unknown causes of morbidity and mortality:—	279	179	200	320	445	660
(c)	793	Symptoms referable to systems or organs ..	—	—	—	—	—	—
		Pyrexia of unknown origin ..	—	—	—	—	—	—
(d)	795.1	Observation, without need for further medical care..	—	—	—	—	—	—
		Malingering ..	—	1	—	—	—	—
(e)	795.2	Sudden death (cause unknown) ..	—	—	—	—	—	—
		Found dead (cause unknown) ..	12	19	20	23	20	29
(f)	795.3	Other ill-defined and unknown causes of morbidity and mortality	257	168	234	159	89	117
		Sub-TOTAL XVI ..	2,157	2,120	2,140	2,361	2,534	3,232
AE 138	E810-E835	XVII.—ACCIDENTS, POISONINGS AND VIOLENCE	122	60	98	124	125	105
		"E" Code: Alternative Classification of Accidents, Poisonings and Violence (External Cause)	2	2	1	—	2	3
(a)	E800-E802	Motor vehicle accidents ..	4	1	7	10	4	—
		Other transport accidents:—	128	63	106	134	131	108
(b)	E850-E858	Railway accidents ..	9,882	10,120	10,407	11,178	11,724	12,057
		Water transport accidents ..	—	—	—	—	—	—
		Sub-Total XVII Carried forward ..	—	—	—	—	—	—
		Carried forward ..	—	—	—	—	—	—

— means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
		<i>Brought forward</i> ..	9,882	10,120	10,407	11,178	11,724	12,057
		<i>Sub-Total XVII Brought forward</i> ..	128	63	106	134	131	108
AE 139	E860-E866 E840-E845	XVII.—ACCIDENTS, POISONINGS AND VIOLENCE—continued. Aircraft accidents Other road vehicle accidents	—	— 1	36 2	— 1	1 2	— —
AE 140	E870 E874 E878 E883 E884 E885 E886 E888 E890-E895 E871-E873 E875-E877 E879-E882 E887	Accidental poisoning:— Accidental poisoning by morphine and other opium derivatives .. Accidental poisoning by other analgesic and soporific drugs .. Accidental poisoning by other and unspecified drugs .. Accidental poisoning by corrosive aromatics, acids and caustic alkalies Accidental poisoning by mercury and its compounds .. Accidental poisoning by lead and its compounds .. Accidental poisoning by arsenic and antimony and their compounds Accidental poisoning by other and unspecified solid or liquid sub- stances Accidental poisoning by gases and vapours Other accidental poisoning	— — — 2 1 — — — — — — 6	— — — 3 — — 1 — — — — 1	— — — 2 — 1 — — — — — 3	— — — — — — — — — — — 26	— — — — — — — — — — — 5	— — — — — — — — — — — 2
AE 141	E900-E904	Accidental falls	27	60	4	2	3	15
AE 142	E912	Accident caused by machinery	1	—	4	—	—	2
AE 143	E916	Accident caused by fire and explosion of combustible material ..	—	—	9	1	8	12
AE 144	E917-E918	Accident caused by hot substance, corrosive liquid, steam and radia- tion	23	28	14	8	—	2
		<i>Sub-Total XVII Carried forward</i> ..	189	158	181	174	151	142
		<i>Carried forward</i> ..	9,943	10,215	10,482	11,218	11,744	12,091

— means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	1956	1955	1954	1953	1952	1951
	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)						
	<i>Brought forward</i> ..	9,943	10,215	10,482	11,218	11,744	12,091
	Sub-Total XVII <i>Brought forward</i> ..	189	158	181	174	151	142
	XVII.—ACCIDENTS, POISONINGS AND VIOLENCE—continued.						
AE 145	Accident caused by firearm ..	5	1	1	1	1	1
AE 146	Accidental drowning and submersion ..	56	63	60	48	63	52
AE 147	All other accidental causes:—						
(a)	Accidents caused by cutting or piercing instruments ..	—	—	—	—	—	1
(b)	Accidents caused by electric current ..	—	—	—	—	—	6
(c)	Foreign body entering eye and adnexa ..	—	—	—	—	—	—
(d)	Foreign body entering other orifice ..	—	—	—	—	—	—
(e)	Accidental mechanical suffocation ..	—	—	—	—	—	—
(f)	Lack of care of infants under one year of age ..	—	—	—	—	—	—
(g)	Accidents caused by bites and stings of venomous animals and insects ..	1	—	—	2	—	2
(h)	Other accidents caused by animals ..	—	—	—	—	—	—
(i)	Excessive heat ..	—	—	—	—	—	—
(j)	Excessive cold ..	—	—	—	—	—	—
(k)	Hunger, thirst and exposure ..	—	—	—	—	—	—
(l)	Cataclysm ..	—	—	—	—	—	—
(m)	Lightning ..	1	2	2	—	—	—
(n)	Other and unspecified accidents ..	—	—	—	—	—	—
(o)	Vaccinia including post-vaccinal encephalitis ..	—	—	—	—	—	—
(p)	Other complications of small-pox vaccination ..	—	—	—	—	—	—
(q)	Anaesthetic accidents ..	—	—	—	—	—	—
(r)	Accidents due to medical or surgical intervention ..	—	1	2	1	2	—
	Sub-Total XVII <i>Carried forward</i> ..	257	231	348	236	227	206
	<i>Carried forward</i> ..	10,011	10,288	10,649	11,280	11,820	12,155

— means nil.

APPENDIX V—continued
RETURN OF DEATHS BY CAUSES, 1951-56—continued

Inter- mediate List Number	Detailed List Numbers	CAUSE OF DEATH (Intermediate International List, Sixth Revision, 1948)	1956	1955	1954	1953	1952	1951
AE 147	(s)	<i>Brought forward</i> ..	10,011	10,288	10,649	11,280	11,820	12,155
		Sub-Total XVII <i>Brought forward</i> ..	257	231	348	236	227	206
AE 148	(a) (b) (c) (d) (e) (f) (g) (h) (i) (j)	XVII.—ACCIDENTS, POISONINGS AND VIOLENCE—continued.	69	126	2	95	94	104
		All other accidental causes ..	7	6	1	—	—	40
		Suicide and self-inflicted injury:—	37	44	44	63	52	—
		Suicide and self-inflicted injury by analgesic and soporific substances	1	—	—	1	—	—
		Suicide and self-inflicted injury by other solid and liquid substances	—	—	—	—	—	—
		Suicide and self-inflicted injury by gases in domestic use	44	60	51	51	38	34
		Suicide and self-inflicted injury by other gases	11	6	7	18	10	5
		Suicide and self-inflicted injury by hanging or strangulation	7	2	4	5	6	1
		Suicide and self-inflicted injury by submersion (drowning)	5	3	2	5	6	6
		Suicide and self-inflicted injury by firearms and explosives	12	9	8	11	1	—
		Suicide and self-inflicted injury by cutting or piercing instruments	7	9	3	4	11	10
		Suicide and self-inflicted injury by jumping from high places	—	—	—	—	—	—
		Suicide and self-inflicted injury by other and unspecified means ..	—	—	—	—	—	—
AE 149	(a) (b) (c) (d) (e) (f)	Homicide and injury purposely inflicted by other persons (not in war):—	—	2	—	—	1	—
		Non-accidental poisoning by another person ..	3	2	—	10	8	
		Assault by firearms and explosives ..	6	4	7	6	6	
		Assault by cutting and piercing instruments ..	10	12	3	2	9	
		Assault by other means ..	6	—	—	—	—	
		Injury by intervention of police ..	2	—	2	—	3	
AE 150	(g) (h)	Execution (legal) ..	—	—	—	—	—	
		Injury resulting from operations of war ..	—	—	1	—	—	
SUB-TOTAL XVII ..			484	516	489	512	467	432
GRAND TOTAL ..			10,238	10,573	10,790	11,556	12,060	12,381

— means nil.

APPENDIX VI

SUMMARY OF WORK DONE DURING THE YEAR 1956 IN LABORATORIES AT HOSPITALS

	Kandang Kerbau Hospital	General Hospital
Blood Examination —Physiological	21,948	66,716
—Biochemical	1,781	16,925
Urine —Biochemical	112	879
—Routine	17,214	97,862
—Toad Test	1,432	—
Cerebro-Spinal Fluid	412	8,833
Seminal Fluid	1	..
Other Body Fluids .. ..	..	503
Examination of Gastric Contents	20	5,034
Examination of Blood Films	605	10,502
„ Smears and Skin Scrapings	815	1,078
„ Sputum	479	13,715
„ Stool	2,403	23,806
Leukæmia and Anæmia Research (M. U. I.) .. ..	..	221
E.C.G. .. ..	..	2,559
E.E.G. .. ..	..	16
B.M.R. .. ..	..	1,426
Vital Capacity .. ..	..	8
	47,222	250,083

