ANNUAL REPORTS
BY THE
DIRECTOR OF
MEDICAL & HEALTH
SERVICES

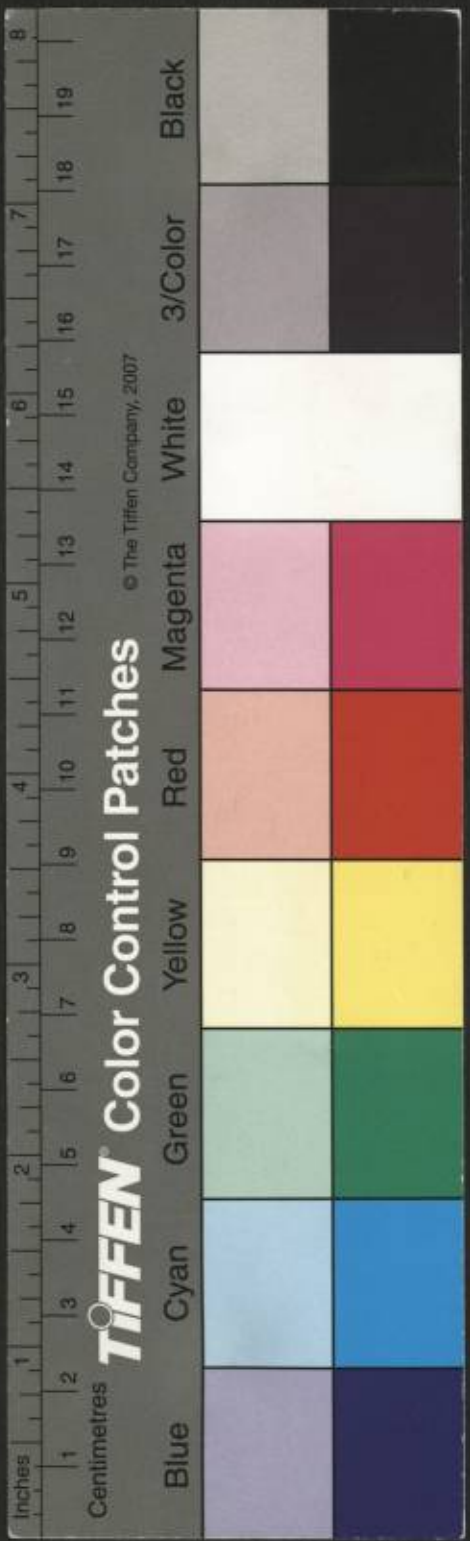
1959 - 60
TO
1965 - 66

SESSIONAL PAPER NO. 11 of 1961

ANNUAL DEPARTMENTAL REPORTS 1959-60

DIRECTOR OF MEDICAL AND HEALTH SERVICES

PRICE: $ 9.00



HONG KONG

ANNUAL DEPARTMENTAL REPORT

BY THE

DIRECTOR OF MEDICAL

AND HEALTH SERVICES

FOR THE

FINANCIAL YEAR 1959 - 60

PRINTED AND PUBLISHED BY W. F. C. JENNER, GOVERNMENT PRINTER
AT THE GOVERNMENT PRESS, JAVA ROAD, HONG KONG

EXCHANGE RATES

When dollars are quoted in this Report, they are, unless otherwise stated, Hong Kong dollars. The official rate for conversion to pound sterling is HK$16=£1 (HK$1=1s. 3d.). The official rate for conversion to U.S. dollars is HK$5.714=US$1 (based on £1=US$2.80).

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1. THE COLONY'S HEALTH SERVICE

INTRODUCTION

THE Colony of Hong Kong occupies a land area of 398¼ square miles. The estimated mid-year population in 1959 was 2,857,000 of which approximately 86% is concentrated in the urban areas of Kowloon and Hong Kong Island. This distribution of a population of 2,457,000 within 21 square miles of the urban areas gives rise to an average density of 117,000 persons to the square mile. It is a young population and although the age structure will not be known accurately until after the 1961 census, there is good reason to believe that one third is aged 15 years or under, that there are some 460,000 children of pre-school age and that there is a predominance of males amongst the young adults.

2. At the end of a decade and during World Refugee Year it is appropriate to review the demands on the medical and health services and the progress made towards meeting these demands. Despite shortage of land, housing and domestic water supplies an increase of population of some 1,000,000 due to the influx of refugees has been accepted. These refugees have not been segregated as such but have become part of the community and the medical and health services of Government and other agencies have been operated on a basis of serving the medical need of the individual without query as to origin.

3. The impact on all services has been of staggering proportions and heavy public expenditure on water supplies, housing, communications and social services has been met from the Colony's own resources. Shortage of trained medical, nursing and health staff has so far been the most important factor limiting the expansion of the medical services. As a result, the building and staffing of clinics and hospitals has not been able to keep pace with the rapidly increasing demands for western medicine. Thus more and more work has fallen on already over-burdened institutions. Nevertheless by applying modern methods of prevention and cure the results as measured by the vital statistics of the past ten years, have been encouraging. However there can be no complacency in the face of the enormity of the task ahead and the necessity for an increasing tempo of development if the needs of a population increasing by approximately 3% per annum are to be met.

even according to standards imposed by local resources rather than those considered desirable in the modern industrial state.

4. During the past five years emphasis has been on the development of training facilities for the greatly increased numbers of doctors and nurses needed to staff the very large programme of clinic and hospital development in hand. The building of such new clinics or hospital accommodation that has been undertaken during this period has had to be geared to the annual output of trained staff available each year and has thus necessarily been limited.

5. The pressure on existing institutions has to a certain extent been met by holding evening clinic sessions, by accelerating, as far as possible within the limits of safety, the turnover of patients in hospital and by developing measures for the prevention of disease that can be applied under local conditions.

6. Such results as have been achieved during the past ten years are outlined in more detail in the relevant sections of this report. The salient features have been a considerable reduction in infantile mortality rates, the absence of the formidable epidemic diseases during the past seven years, the cessation of malaria transmission in the urban areas, the elimination of rabies and the progressive reduction of the tuberculosis mortality rate from 208 per 100,000 in 1951 to 76.2 per 100,000 in 1959.

EVENTS OF IMPORTANCE DURING THE YEAR 1959/60

7. The Society of Apothecaries in London again held examinations for the L.M.S.S.A. in Hong Kong. Of the 118 candidates who entered for the examinations, 106 sat the examinations. Of these 39 passed in all subjects and 45 passed in one or more subjects. Prior to the written examinations a 3 months refresher course was conducted by University and Government clinicians at the Queen Mary Hospital.

8. There are now 82 refugee doctors who have obtained the L.M.S.S.A. as a result of the facilities which, with the approval of the General Medical Council of the United Kingdom, have been so generously accorded by the Society. A third and last L.M.S.S.A. examination will be held in Hong Kong towards the end of 1960.

9. Work continued on the drafting of legislation for the registration and licensing of medical clinics operating in the Colony.

Salaries Commission

10. The Commission completed its work during the year and those recommendations which were accepted by Government became effective in January 1960. The consolidation of the former high cost of living and expatriation allowances into the basic salary, 90% of which is now pensionable, has considerably improved career prospects. More promotion posts have enhanced the opportunities for the accelerated promotion of well qualified and able officers in the junior ranks of the service. Women Medical Officers who have completed their probationary service and who are members of the permanent and pensionable establishment are now receiving pay equal to that of their male counterparts.

Drug Addiction

11. The publication in November 1959 of a White Paper on the Problem of Narcotic Drugs in Hong Kong focussed attention on the widespread use of addicting narcotic drugs, particularly heroin. The treatment and rehabilitation of drug addicts amongst convicted prisoners has been placed on a sound basis at H.M. Prison Tai Lam where 700 prisoners can be accommodated. There is however a demand for accommodation for the treatment of addicts on a voluntary basis and the details of a pilot scheme, within the new Castle Peak Hospital of 1,000 beds for mental patients, have been worked out. A ward block of 120 beds will be set aside for this purpose and addicts coming forward as voluntary patients will be expected to surrender their liberty for a period of six months. During this time treatment and training will be given which is designed to build up the individuals physically and psychologically for rehabilitation and re-absorption into the community. Full social and medical records will be obtained with a view to assessing the local circumstances giving rise to addiction and the measures best fitted to prevent it. A vital necessity in any such rehabilitation programme is the cutting off of sources of supply and thus of temptation. To this end a vigorous drive against traffickers is being maintained by the police and preventive services, with considerable success.

12. The secondment of a trained Psychiatrist to the Prison Medical Service has enabled some preliminary investigation into the causes of drug addiction amongst prisoners to be started.

Dental Council

13. The statutory regulation of the practice of dentistry in Hong Kong dates from the promulgation of the Dentistry Ordinance No. 16

of 1914. Since that time successive Dental Boards have maintained a Register and acted as the examining and disciplinary bodies. During 1957 work started on the drafting of a new Dentists Registration Ordinance which was designed to bring the legislation up to date and more in line with the Medical Registration Ordinance. The Dentists Registration Ordinance 1959 replaces the Dental Board by a Dental Council and the new Council met for the first time on the 7th October, 1959. The new Council will continue to function as an examining body.

14. A tribute is paid to the work of successive Boards over the past 45 years which has culminated in a project approved in principle by the University of Hong Kong and the Government to establish a University Dental School. Arrangements for the pre-clinical training of dental students have been made in conjunction with the development of pre-clinical facilities in the Faculty of Medicine, due to become effective during 1962. Meantime the planning of a Dental Hospital has started with site investigations and the drafting of schedules of accommodation.

Mental Deficiency

15. A report on the problem of Mental Deficiency in Hong Kong was compiled in 1955 by a Sub-Committee of the Hong Kong Council of Social Services. This report recommended the building of an institution to care for a number of known defectives who were being accommodated in a variety of institutions unsuited to this purpose. Tentative plans were made thereafter to develop an institution of some 200 beds but the problem of recruiting an adequacy of suitable trained staff had proved to be almost insuperable.

16. In view of modern trends in the policy governing institutional care for mental defectives, Government decided to invite Dr. L. T. HILLIARD of the Fountain Hospital, London, who is a member of the W.H.O. Expert Committee in Mental Deficiency, to visit Hong Kong and to report on the local situation and to make recommendations. Dr. HILLIARD accepted the invitation and spent six weeks in Hong Kong during February and March 1960. His report was submitted to Government at the end of March and is now being studied.

Planning

17. An important innovation during the year was the establishment of a Planning Section within the Medical Headquarters organization. In charge of a Principal Medical Officer assisted by an Hospital

Secretary all development projects are processed by this unit which is responsible for the co-ordination of all requests for accommodation and equipment for new Medical & Health Department institutions. The first task was to work out in some detail the development proposed for the five years 1960-65 and to make provisional estimates of the cost entailed. This task was completed and the proposals submitted to Government in December, 1959. In addition to work on departmental projects, assistance was also given to the Tung Wah Hospitals Medical Committee in connexion with the re-building of the Kwong Wah Hospital.

ADMINISTRATION OF THE MEDICAL AND HEALTH SERVICES

18. Statutory responsibility for the administration of the services safeguarding the public health in Hong Kong lies jointly with the Director of Medical and Health Services, the Urban Council, the District Commissioner New Territories and the Commissioner of Labour. Executive functions in connexion with curative medical services and a number of aspects of preventive medicine throughout the Colony are the responsibility of the Medical and Health Department. The Urban Council is concerned with environmental sanitation in the urban areas of Hong Kong and Kowloon through the Urban Services Department. The District Commissioner has executive functions as the Health Authority for the New Territories and administers its environmental sanitary services. Health Officers are seconded in an advisory capacity to the Urban Services Department and the District Administration, New Territories. The Labour Department has an Industrial Health section which also has officers of the Medical and Health Department on its staff.

STAFF

19. The Director of Medical and Health Services is the Head of the Department, the chief adviser to Government on medical and health policy, and an official member of the Legislative Council. He is a member of a number of the Boards and Committees of voluntary organizations engaged in medical and health work whose activities receive substantial support by way of Government subventions. He is also the Chairman of the Radiation Board and of the Statutory Boards dealing with the registration and disciplinary control of Medical Practitioners, Dentists, Pharmacists, Nurses and Midwives.

20. The Deputy Director of Medical and Health Services is the chief executive medical and health officer who co-ordinates the work of the

Medical and Health Divisions. Each of these divisions is in charge of an Assistant Director. The Principal Matron is the Chief Nursing Officer and administers the Nursing Division which provides nursing, midwifery, health visitor and health sister services.

21. The Health Division, which is the administrative responsibility of the Assistant Director of Health Services, is composed of units dealing with tuberculosis, malaria, port health and epidemiology, maternal and child health, school health and social hygiene, the latter including venereal diseases, leprosy and dermatology. Each of the component units of the Health Division is in the charge of a Specialist or of a Medical Officer with special experience and training. In addition, advisory services are given to the Urban Services Department, the District Administration New Territories and the Labour Department. The Assistant Director of Health Services is Vice-Chairman of the Urban Council. He is assisted in the work of the Division by a Principal Health Officer at Headquarters.

22. The Assistant Director of Medical Services, responsible for the administrative routine of the Medical Division, is assisted by a Principal Medical Officer at Headquarters and by two Principal Medical Officers who are respectively Medical Superintendents of the two Government general hospitals, one on Hong Kong Island and one in Kowloon. There are clinical units of general medicine, general surgery, anaesthesia, ear, nose and throat, neurosurgery, obstetrics and gynaecology, ophthalmology, orthopaedics, pathology, psychiatry and radiology, each of which works under the clinical direction of a Specialist. There are two infectious diseases hospitals, one on either side of the harbour. The Government Dental Service is under the direction of a Senior Dental Specialist and the Government Chemist is responsible for the work of the Government Laboratory. The work of the Government outpatient clinics throughout the Colony is co-ordinated by the Medical Division although certain of the services rendered from these clinics are provided by the Health Division. The Medical-Social, Occupational Therapy and Physiotherapy Services are also part of the Medical Division.

23. The Auxiliary Medical Service, which is a branch of the Civil Defence Services, is administered by the Medical Defence Staff Officer who is a member of the Medical and Health Department Headquarters staff. The Director of Medical and Health Services is the Unit Controller.

24. The routine administrative, secretarial, establishments and clerical work of the Department is under the general direction of the

Secretary, while the Principal Accountant and his staff deal with the financial and accounting duties. The Boards section is supervised by the Boards Secretary.

25. The pharmaceutical and dispensing activities are the responsibility of the Chief Pharmacist who also has inspectorial duties in connexion with the Dangerous Drugs and Pharmacy and Poisons Ordinances.

26. The Chief Hospital Secretary is responsible for the supply of equipment and the day-to-day lay administration of the hospital and clinic services. The hospitals and clinics are at present grouped into two large units to each of which is posted an Hospital Secretary. Assistant Hospital Secretaries are posted to the larger and more important institutions within the groups.

27. Appendix 1 shows the establishment at 31st March, 1960.

FINANCE

28. The actual expenditure of the Medical and Health Department for the financial year ended 31st March, 1960 was $45,925,081 to which should be added a further $18,988,424 disbursed in the form of subventions. Capital expenditure on medical projects under the Public Works Non-Recurrent head totalled $15,442,311. These amounts represent 11.32% of the Colony's total expenditure during the year. This does not include expenditure on environmental sanitation by the Urban Services Department and the District Administration of the New Territories.

29. A Statement of Expenditure for the ten years from 1950-51 to 1959-60 is shown at Appendix 2.

30. The total revenue collected by the Department during the year from all sources totalled $3,097,438.

31. The largest subvention was made to the Tung Wah Group of Hospitals which received $8,500,000; in addition, a further capital grant of $4,381,719 was made towards the cost of Phase II of the re-development of the Kwong Wah Hospital.

32. Other major subventions were $2,926,482 to the Grantham Hospital, $1,346,979 to the Hong Kong Anti-Tuberculosis Association and $550,000 to the Mission to Lepers, Hong Kong Auxiliary.

LEGISLATION

33. The following legislation dealing with medical and health matters was enacted during the year 1959/60:

Ordinances:

(1) Dentists Registration Ordinance, 1959.

Rules and Regulations:

(*a*) Poisons (Amendment) Regulations, 1959. (G.N.A. 22/59).

(*b*) Poisons List (Amendment) Regulations, 1959 (G.N.A. 23/59).

(*c*) Poisons List (Amendment) (No. 2) Regulations, 1959. (G.N.A. 35/59).

(*d*) Poisons (Amendment) (No. 2) Regulations, 1959 (G.N.A. 36/59).

(*e*) Nurses Registration (Amendment) Regulations, 1959. (G.N.A. 51/59).

(*f*) Dentists (Registration and Disciplinary Procedure) Regulations, 1959. (G.N.A. 54/59).

(*g*) Poisons (Amendment) (No. 3) Regulations, 1959. (G.N.A. 58/59).

(*h*) Poisons List (Amendment) (No. 3) Regulations, 1959. (G.N.A. 59/59).

(*i*) Importation (Prohibition) (Radiation) Regulations, 1959. (G.N.A. 73/59).

(*j*) Dangerous Drugs (Amendment of Schedule) (No. 2) Order, 1959. (G.N.A. 104/59).

(*k*) Poisons (Amendment) Regulations, 1960 (G.N.A. 5/60).

(*l*) Poisons List (Amendment) Regulations, 1960. (G.N.A. 6/60).

PROFESSIONAL REGISTERS

34. There are five statutory bodies dealing with the registration of medical practitioners, dentists, pharmacists, nurses and midwives. The Hong Kong Medical Council is responsible for the registration of medical practitioners and has responsibilities in connexion with disciplinary proceedings and offences; it is not an examining body. The Dental Council, Pharmacy Board, Nursing Board and Midwives Board all maintain registers, regulate training, hold examinations leading to registration or enrolment and have disciplinary powers.

35. At the 31st March, 1960 the numbers of persons on the statutory registers were as follows:

31st March, 1951			*31st March, 1960*
401	Register of Medical Practitioners ...		913
357	Register of Dentists		389
47	Register of Pharmacists		88
837	Register of Nurses	Female ...	1,646
52		Male ...	88
831	Roll of Midwives		1,618

WORK OF THE STATUTORY COUNCILS AND BOARDS

Medical Council

36. The Council met ten times during the year for the transaction of routine business; 9 notices to medical practitioners were issued for guidance on points of ethics. There were no disciplinary inquiries but the Preliminary Investigation Committee met once to consider a complaint which was not referred to the Council for an inquiry.

Dental Council

37. The Dental Board met three times before the enactment of the new Ordinance and thereafter the Dental Council met four times. There were nineteen applications considered for registration as dentists, of which fourteen were accepted without examination. Of the remaining five applicants, two were required to pass the Council's examinations before being accepted for registration and the three other applicants were rejected as their curriculum of training was not up to the standard required by the Council for entry to its examinations.

Pharmacy Board

38. The Board met five times for the transaction of routine business, mainly in connexion with the control of habit-forming drugs, of certain phosphorus compounds in use as insecticides and of antibiotics.

39. Proposals for the amendment and re-enactment of the Pharmacy and Poisons Ordinance were completed and were submitted to Government for approval to prepare a draft Bill.

40. These proposals included the Board's suggestions for the restriction of the employment of part-time pharmacists and for simplification of the control of antibiotics together with a number of other suggestions designed to make the Ordinance more easily understood by the lay public.

41. Proposals for a scheme to provide scholarships overseas for pharmacy students were also prepared and submitted to Government for consideration. It is hoped that provision of a scheme on the lines of the one proposed will ensure an adequate supply of well trained pharmacists for the future, since the absence of any training facilities in the Colony is making recruitment to the profession difficult.

42. There were 18 applications for registration, of which 5 were accepted without examination and one accepted after passing the Board's examinations. Two applications were rejected and 10 applicants were required to undertake further practical training, under the supervision of a registered pharmacist for periods of one to two years, before becoming eligible for examination.

Nursing Board

43. The qualification of Registered Nurse granted by the Board has been recognized by the Nursing Councils in the United Kingdom since 1939. Statutory preliminary and final examinations are held twice each year in the English and Chinese languages, under the general supervision of the Board, which appoints examiners, conducts the examinations and approves the results.

44. The Nursing Board met four times during the year. In addition to business in connexion with examinations, amendments to the Regulations governing eligibility of candidates for examination were proposed and subsequently approved by Government. Work continued on the drafting of a revised Nurses Registration Ordinance.

45. Following the decision to open a supplementary part of the Register for Mental Nurses, an agreement for reciprocal registration was under negotiation with General Nursing Council of England and Wales and approval was obtained during March 1960 for the use of the General Nursing Council Syllabus of training. Six students are at present in training and the first full intake of new student is expected to take place in July 1960. The Board is now making examination arrangements for a Certificate of Mental Nursing, in preparation for the first Final Examination to be held in July, 1961.

46. During the year, 315 candidates were entered by the approved training schools for the preliminary examination in General Nursing held by the Board and 156 passed in all subjects; there were 226 candidates accepted for the final examinations and 156 passed in all subjects.

47. There were 167 applicants for registration as general nurses and 163 were accepted. Of these 147 were nurses who had qualified at the Hong Kong Training Schools recognized by the Board and their names were entered in the Register after passing the Board's final examination; 14 trained outside the Colony were accepted without examination and 2 trained outside the Colony were accepted after passing the Board's final examination.

Midwives Board

48. This Board meets four times each year and conducts examinations in April, July, October and January. The course of training in midwifery lasts two years for pupil midwives entering the course direct but registered nurses are accepted for entry to the examination after one year's full time training in midwifery.

49. Owing to the social conditions existing in the Colony there is very little scope for domiciliary midwifery and the majority of confinements take place in hospitals and maternity homes. Therefore the qualification given by the Board is not fully recognized by the Central Midwives Board of the United Kingdom for registration there. There is, however, a remission of three-quarters of the period of training in the United Kingdom granted to midwives registered in Hong Kong who may wish to sit the State Certified Midwives examinations.

50. There were 145 candidates from approved training schools in the Colony accepted for the Board's examinations; of these 132 passed the examinations. There were a further 6 applications for enrolment, of these 2 trained in the United Kingdom were accepted; in addition, 4 names were restored to the Roll.

51. A first draft of the revised Midwives Ordinance Bill and Regulations were considered at the March meeting and a revised draft is now in preparation.

Radiation Board

52. This Board which was constituted by the Radiation Ordinance No. 35 of 1957, met once during the year to consider draft regulations for the control of irradiating apparatus. A drafting sub-committee is at work on the preparation of these and other regulations, but due to the complexity of the subject and the necessity to conform as far as possible with international standards still the subject of discussion, progress in drafting has been necessarily slow.

Storage of radioactive materials and fire precautions

53. The Board was consulted by the Chief Officer, Fire Brigade, on the precautions to be taken in fire-fighting operations where radio-active materials were involved and on the Board's advice a Fire Brigade Order was compiled and issued.

54. The Board also gave attention to the storage of radio-active materials and advised on the proper precautionary measures both for the storage of goods and the protection of personnel.

II. PUBLIC HEALTH

GENERAL COMMENTS

55. Despite the very large movements of people in and out of Hong Kong each year there has continued to be a remarkable freedom from major epidemics. Again there was no case of smallpox, cholera, typhus, plague or relapsing fever. Influenza remained at a low level of incidence but diphtheria and typhoid continued to levy an unnecessarily high toll of morbidity and mortality. The incidence of diphtheria rose by 34% over the previous year but the number of deaths was smaller than in 1958. There was no case of human or animal rabies for the fourth year in succession.

VITAL STATISTICS

56. Registration of all deaths and live births occurring in the Colony is compulsory under the Births and Deaths Registration Ordinance. Still births are not registrable but the numbers received by cemeteries for burial are recorded. Table 1 shows the annual returns for births and deaths during the period 1950-59.

TABLE 1

BIRTHS AND DEATHS 1950/59

Year	*Estimated Mid-Year Population*	*Total Live Births*	*Crude Live Birth Rate (per 1,000 population)*	*Still Births recorded*	*Total deaths*	*Crude Death Rate (per 1,000 population)*
1950	2,265,000	60,600	26.8	1,343	18,465	8.2
1951	2,013,000	68,500	34.0	1,180	20,580	10.2
1952	2,250,000	71,976	32.0	1,157	19,459	8.6
1953	2,250,000	75,544	33.6	1,158	18,300	8.1
1954	2,277,000	83,317	36.6	1,341	19,283	8.5
1955	2,340,000	90,511	38.7	1,250	19,080	8.2
1956	2,440,000	96,746	39.7	988	19,295	7.9
1957	2,583,000	97,834	37.9	1,245	19,365	7.5
1958	2,748,000	106,624	38.8	1,297	20,554	7.5
1959	2,857,000	104,597	36.6	1,393	20,250	7.1

57. For the first time since the war, there was a fall in both the birth rate and in the total number of live births registered. The net natural increase in the population during the year was 84,347 which is 1,723 less than for 1958. Without accurate census data, the low crude death rate has little significance but could be said to reflect the youth of the population, one third of which is estimated to be under fifteen years of age; from such survey data as are available it seems evident that there is a preponderance of males in the young adult age groups.

58. Table 2 shows the recent trends in infantile and maternal mortality. The reduction of both the infantile and the maternal mortality rates by over 50% in a period of 10 years has been achieved in spite of the rapidly increasing number of births.

TABLE 2

MATERNAL AND INFANT MORTALITY

Year	*Infantile Mortality rate (per 1,000 live births)*	*Neo-natal mortality rate (per 1,000 live births)*	*Maternal Mortality Rate (per 1,000 total births)*
1950	99.6	30.0	1.70
1951	91.8	31.3	1.59
1952	77.1	26.3	1.14
1953	73.6	25.8	0.97
1954	72.4	24.6	1.24
1955	66.4	23.1	1.16
1956	60.9	24.2	0.90
1957	55.6	23.8	1.06
1958	54.3	23.4	0.85
1959	48.3	21.3	0.73

59. Table 3 shows a comparison of the main causes of infantile mortality for 1950 and 1959. It will be seen that there have been marked reductions in the mortality from infectious and other febrile conditions, although much still remains to be done in the control of broncho-pneumonia and gastroenteritis. The neonatal mortality rate has declined but by no means to the same extent, an experience shared by many other countries; the epidemiological implications of this in Hong Kong have yet to be studied.

TABLE 3

INFANTILE MORTALITY 1950/59

Disease Group	International List Numbers	1950 Total Deaths under 1 year	1950 Deaths under 1 per 1,000 live births	1959 Total Deaths under 1 year	1959 Deaths under 1 per 1,000 live births
Respiratory Tuberculosis ..	001-008	91	1.5	25	0.2
Tuberculosis Meningitis	010	146	2.4	91	0.9
Other Forms Tuberculosis ..	011-019	83	1.4	5	0.05
Tetanus	061	84	1.4	62	0.6
Bronchopneumonia	491	2001	33.0	1667	15.9
Pneumonia—other forms ..	490,492-3	116	1.9	16	0.15
Bronchitis	500-502	402	7.0	21	0.2
Gastroenteritis over age of 4 weeks	571	1534	25.3	926	8.8
Congenital Malformations ..	750-759	70	1.1	172	1.6
Birth Injuries	760 & 761	49	0.8	37	0.3
Post-natal Asphyxia	762	36	0.6	292	2.8
Pneumonia of Newborn	762	190	3.1	322	3.1
Diarrhoea of Newborn	764	89	1.5	60	0.6
Blood Diseases of Newborn ..	770 & 771	70	1.1	83	0.8
Nutritional Maladjustment ..	772	27	0.4	81	0.8
Immaturity	776	706	11.6	766	7.3
Ill-defined Causes	795	75	1.2	123	1.2

60. The fall in the maternal mortality rate has been mainly brought about by reductions in the incidence of death from toxaemias and haemorrhages of pregnancy. Deaths from septic complications of pregnancy, childbirth, and the puerperium have remained satisfactorily low.

61. Table 4 shows the changes in the mortality pattern which have occurred over the last ten years. Deaths from infectious diseases have declined considerably due to therapeutic advances and possibly to a rise in the general standard of health. Respiratory diseases are declining only slowly, mainly because of the rapidly increasing child population which is particularly vulnerable to bronchopneumonia. Diseases of the later years of life can be seen to be of increasing importance with the gradual rise in the relative incidences of cardiovascular, central nervous (mainly cerebrovascular), and neoplastic lesions; this is to be expected from the "freezing" of a swollen and relatively young population in the Colony 10 years ago. The effect of a rapid natural expansion of such a population in a confined area such as Hong Kong is reflected in the figures for accidents and violence.

TABLE 4

ANALYSIS OF MORTALITY FOR THE YEAR 1950, 1953, 1956 AND 1959
(Given as Percentage Total Deaths)

Disease Group	Detailed List Numbers	1950	1953	1956	1959
1. Infectious & Parasitic ..	001-138	22.0	19.3	16.2	14.2
2. Neoplastic	140-239	3.7	5.6	7,0	9.3
3. Allergic, Endocrine, Metabolic & Blood ..	240-299	0.7	1.3	1.2	1.1
4. Nervous System & Sense Organs	300-398	2.4	3.5	4.9	6.2
5. Circulatory System ..	400-468	5.5	6.2	7.6	8.9
6. Respiratory	470-527	29.9	23.0	21.3	22.3
7. Intestinal	530-587	16.3	17.2	15.1	11.3
8. Genito-Urinary	590-637	1.6	2.2	2.1	2.1
9. Pregnancy, Child-birth & Puerperium	640-689	0.6	0.4	0.5	0.4
10. Skin & Musculo-Skeletal ..	690-749	0.2	0.2	0.4	0.4
11. Congenital Malformations & Diseases of Early Infancy	750-776	6.8	9.7	11.2	9.3
12. Ill-defined Causes	780-794	6.4	7.4	7.5	8.7
13. Accidents, Poisoning & Violence	E800-E999	3.9	4.0	5.0	5.8

III. WORK OF THE HEALTH DIVISION

HYGIENE AND SANITATION

Urban Areas

62. Responsibility for environmental sanitation in the urban areas rests with the Urban Council and Health Officers are seconded to the Urban Services Department from the Medical and Health Department. The Assistant Director of Health Services as Vice-Chairman of the Urban Council is the co-ordinating link between the two Departments in so far as communicable disease control, through better environmental sanitation, food hygiene and vector control, is concerned. The Health Officers are concerned with the guidance of and advice to the Health Inspectorate in the day to day management of these health problems.

63. Through the medium of routine house inspections carried out quarterly by the Health Inspectorate there is a close link with health education activities in connexion with immunization against diphtheria and typhoid and with the control of intestinal infections.

64. During a greatly intensified diphtheria immunization campaign, mobile inoculation teams worked closely with the health inspectorate in

a systematic drive to ensure that the children at most risk in the densely populated tenement and resettlement areas on both sides of the Harbour were adequately protected against diphtheria. As a result the number of second and booster doses of APT rose to a much more satisfactory level and in the Kowloon urban area alone it was estimated that some 50,000 children received the requisite first and second doses. This was achieved by establishing inoculation posts at strategic points working at times convenient to parents while Health Inspectors conducting house inspections made known the facilities offered. Inoculation teams also visited roof-top squatter families at least once during the campaign and a second round of visits was under way at the end of the year. Although the drive was primarily against diphtheria, typhoid vaccine and smallpox vaccination were also available when required and accepted.

65. The Health Officers also maintained investigations into the source of known cases of diphtheria, typhoid, dysentery, amoebiasis, poliomyelitis and tetanus. Where applicable contact examinations were arranged and carriers treated.

66. Special attention continued to be given to food hygiene, the education of food handlers and of the proprietors of establishments selling raw or cooked foods being a major activity. The incidence of unsatisfactory samples of milk and ice cream continued to be unduly high and an average of 30% of samples taken were below standard.

67. This problem must be considered against the background of the density of population, the number of individuals who depend on low priced food establishments close to the place of work, and the widespread indifference to and lack of knowledge about elementary food hygiene. Therefore improvement in standards will only become significant as the many squatters are adequately rehoused, as more adequate piped water supplies are available and as modern sewerage replaces the many insanitary closets still existing in the old tenement and squatter areas.

Rural Areas

68. The District Commissioner New Territories is the statutory Health Authority in the Rural Areas. The appointment of a Principal Medical Officer of Health for the New Territories, whose function it is to co-ordinate the curative and preventive work, became effective in October. Assisted by two Health Officers and 10 Health Inspectors, attention to practical health education stemming from the centres of curative medicine, the clinics, is now receiving priority in environmental sanitation. Routine work on the control of licensed food premises and

food handling has been intensified with some encouraging results. Nearly all licensed food premises not provided with water-borne sanitation now have aqua privies in place of dry latrines. Ways and means of improving sanitation in the villages are under consideration by the Rural Development Committee and pilot co-operative village cleansing schemes are being set up in two villages in co-operation with the Departments of Agriculture, Fishery and Forestry and Co-operative Development. Other such schemes are under consideration.

69. The pilot scheme of malaria prophylaxis started in two villages in the Sai Kung area during 1959 led to a considerable reduction in the number of cases of malaria. However after the initial interest of the villagers in the scheme had waned, it had to be discontinued owing to lack of co-operation. Further epidemiological investigations are continuing which include a survey of malaria parasites in the blood of children under ten years of age, with febrile conditions, attending clinics and dispensaries throughout the New Territories.

EPIDEMIOLOGY

70. During the year 1959 there was an increase in the number of cases of the more common notifiable diseases, the main exceptions being acute anterior poliomyelitis, measles and amoebiasis. The major factors in this increase are the rapidly-increasing population, mainly in the young and most susceptible age-groups, and the greater use of the medical facilities provided by Government and other agencies. The most disturbing feature of the year was a 34% rise in the incidence of diphtheria, an event which is discussed more fully later.

71. The total mortality from the notifiable diseases, however, continued to decline; even in the case of diphtheria, the number of deaths was less than recorded in the previous year.

72. Appendix 3 gives the numbers of cases and deaths from notifiable infectious diseases recorded during 1959.

Amoebiasis

73. Compared to 1958, there was a slight fall in the incidence of cases recorded. The mildness of the initial symptoms commonly met with militates against an accurate assessment of the problem but it is interesting to note that, of the cases recorded, 57% of cases occurred in the Kowloon Peninsula, 33% on Hong Kong Island and 10% in the New Territories; this accords fairly closely with the estimated distribution of population in these three areas of the Colony.

Bacillary Dysentery

74. A 50% increase was recorded in the notifications of this disease but mortality remained low. Just over half the cases reported were in children under 10 years of age. The preponderant organism found is *Sh. flexneri*, while both *Sh. boydii* and *Sh. sonnei* are reported from time to time.

Enteric Fever

75. The increase in the notifications of this disease was due to the recurrence, during 1959, of a summer peak after a lapse of four years. The incidence rate in the 5-9 and 10-14 age groups remained high, children in these groups accounting for 44% of the cases reported. This disease is particularly prevalent in the parts of the Kowloon Peninsula where squatters are concentrated with consequent lowered standards of sanitation and increased dependence on water sources other than the Government mains supply.

Chickenpox

76. There was no change in the number of notifications as compared with 1958 and mortality remained low. It is primarily a disease of the colder months, the great majority of the cases occurring during the first four months of the year.

Cerebro-Spinal Meningitis

77. The incidence remained at a low level and this disease is not a public health problem in the Colony at present.

Diphtheria

78. As previously mentioned, there was a disturbing rise in the incidence and the number of cases was the highest ever recorded; 80% of the cases occurred in children under the age of 10 years. However, the case fatality rate was the lowest ever recorded.

79. As usual, the rise occurred during the cooler months, reaching a peak during December, 1959. The main concentration of the disease was in the densely-populated tenement areas of Kowloon and in the Mainland portion of the New Territories. The incidence on Hong Kong Island remained comparatively low but there also the majority of cases were reported from the densely-populated areas.

80. The clinical picture was predominantly that of laryngeal diphtheria due to *C. diphtheriae mitis;* only in rare instances was a *gravis* strain isolated. The occurrence of "bull-neck" in many patients who had

previously had herbal throat powders insufflated onto the fauces, a traditional practice referred to in last year's Report, was further investigated. In the samples of powder analysed there were varying concentrations of realgar (arsenic disulphide) and investigations are continuing with a view to determining whether or not the condition is due to a non specific irritant effect of the powder itself rather than due to the arsenic content.

Measles

81. There was a slight drop in the number of notifications of this disease but the high case fatality rate, 23.7% during 1959, is a strong indication that reporting of this disease is by no means complete. As in other diseases spread by droplet infection, most of the cases occur during the first quarter of the year.

Poliomyelities

82. There was a marked drop in the incidence of this virus infection, and cases occurred uniformly throughout the year, there being no peak during the summer months as in 1958/59. There was, however, an increase in the case fatality rate. Most of the cases and deaths amongst Chinese were in the 0 - 1 year age group; seven non-Chinese cases were reported, mainly in Europeans recently arrived in the Colony. Two-thirds of the cases occurred on the Kowloon Peninsula.

Whooping Cough

83. There was a considerable drop in the number of notifications, and only two deaths were recorded. As in the cases of chicken-pox and measles, the number of unreported cases is estimated to be considerable.

Puerperal Fever

84. Only one instance of this disease was recorded in a patient who, having been attended by a qualified midwife, left the Maternity home against advice.

Ophthalmia Neonatorum

85. This disease, made notifiable in June 1958, showed a marked increase in the number of notifications, 98% of which came from Government Ophthalmic Clinics; these cases were investigated by Health Visitors working in the Government Ophthalmic Service.

Malaria

86. There was a drop of 33% in the number of notifications of this disease during 1959 as compared to 1958. Of these, 89% were amongst

residents of the New Territories, mainly in the district around Sai Kung on the south-eastern part of the mainland. There was one death.

Tuberculosis

87. Cases notified during the year were 817 more than during 1958, but there was a further fall in the mortality rate to 76.2 deaths per 100,000 estimated population. This disease is the greatest public health problem in the Colony and is considered in detail later in this report.

Influenza

88. Influenza was made voluntarily notifiable following the widespread outbreak of 1957. During 1959, a total of 11,659 notifications were recorded; of these, 73% occurred in the first half of the year. There were only 26 deaths attributed to influenza.

Other communicable diseases which are not notifiable

Tetanus

89. Of 131 cases of tetanus reported, 76 cases were of tetanus neonatorum. The case fatality rate was high, particularly in the new born. The infection amongst the latter is attributed to the application of ground ginger root as a styptic to the umbilical cord.

90. The risk of tetanus neonatorum due to the improper preparation of ginger root was brought to the notice of the representatives of the Chinese Herbalists and their co-operation sought to try and insure proper cleansing of the raw ginger root before it is prepared as an herbal remedy.

Food Poisoning

91. There were 527 cases of food poisoning recorded of which 81 were due to coagulase positive staphylococci.

Vaccination and Inoculation Campaigns

92. Free prophylactic vaccinations against enteric fever, diphtheria, cholera and smallpox continued to be available to members of the public at all Government Hospitals and Clinics, Port Health Inoculation Centres, and District Health Offices.

93. During April and May, the occurrence of smallpox in Singapore, a port with which Hong Kong has close links by sea and air, called for special precautions to prevent the establishment of the disease in the Colony; one of these precautions was the intensification of the annual

vaccination campaign, resulting in a total of just over one million persons being vaccinated during 1959.

94. The anti-typhoid campaign held during the summer months produced a fairly satisfactory response. While the numbers presenting themselves for the first dose of vaccine were not as high as in some recent years, there was a marked improvement, mainly amongst school children, in those presenting themselves to receive the second inoculation; 29% of those initially inoculated failed to return for a second dose.

95. At the beginning of the year, an Interdepartmental Committee on Health Education was formed consisting of representatives of the Secretariat for Chinese Affairs, the District Administration New Territories, the Government Information Services, the Labour, Education, Urban Services, Resettlement and Medical & Health Departments under the Chairmanship of the Assistant Director of Health Services. Its initial task was, and still is, to obtain maximum co-operation by the public in all attempts to raise the level of immunity against preventable diseases posing serious public health problems. The first activity of this committee was the intensification of the annual anti-diphtheria campaign which commenced in September. An Inoculation Record Card was introduced for general distribution and it is encouraging to note that in many instances this is now regarded as an important personal document for the child; as an incentive, a plastic figurine symbolizing 'Health' was given to each child receiving the complete course of two doses of P.T.A.P. Further, there was an intensification of the general propaganda programme in support of the campaign, which received considerable support from the local Kaifong Associations, including the Women's sections.

96. At first, the inoculations were carried out by mobile teams of inoculators visiting certain strategic points on both sides of the harbour in rotation. The initial response was good but after two months, numbers began to decline and it became apparent that to achieve a high level of immunity amongst the child population it would be necessary to offer protection against the disease as near as possible to the individuals home. To affect this, inoculators were attached to teams of Health Inspectors of the Urban Services Department making their daily house inspection visits, teams were sent to squatter areas both on hillsides and rooftops and there was block-by-block coverage of Resettlement Estates. By December, it was obvious that the main sources of the disease were in Kowloon; accordingly, after the commitments on Hong Kong Island

had been met, all available inoculators were concentrated in the Peninsula. At the end of March, 1960, it was estimated that at least 50% of children in the 0 - 9 age group had received full protection against diphtheria either in this campaign or in those held in previous years.

97. The numbers of prophylactic immunizations carried out during 1959 are detailed in Appendix 4.

Recent Trends in Infectious Diseases

98. Table 5 shows annual morbidity and mortality rates during the period 1950 - 1959 for the main infectious diseases occurring in Hong Kong.

TABLE 5

MORBIDITY AND MORTALITY RATES OF CERTAIN NOTIFIABLE DISEASES
1950/59

(per 100,000 estimated population)

Disease		*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*	*1957*	*1958*	*1959*
Tuberculosis	I.R. ..	400.3	689.8	658.7	528.9	549.3	604.7	498.2	529.0	490.7	500.6
	M.R. ..	144.1	208.1	158.8	130.6	126.3	120.1	107.7	103.6	83.8	76.2
Diphtheria	I.R. ..	23.1	28.5	43.9	49.6	48.5	35.9	29.3	48.0	56.6	73.0
	M.R. ..	6.0	6.0	7.0	5.9	5.1	3.0	3.1	5.0	4.9	4.1
Enteric fever	I.R. ..	40.0	50.9	54.7	63.7	48.3	31.4	32.3	28.2	29.7	34.9
	M.R. ..	7.1	6.7	7.0	5.7	3.6	2.5	2.0	1.3	1.2	1.1
Amoebiasis	I.R. ..	7.8	7.7	8.9	12.7	10.4	9.0	7.5	8.4	9.5	8.4
	M.R. ..	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.4	0.6
Bacillary dysentery	I.R. ..	11.4	18.6	14.9	29.4	23.5	22.4	23.0	21.3	15.4	23.2
	M.R. ..	0.7	1.4	1.0	1.2	1.6	1.6	0.2	0.3	0.9	0.9
Malaria	I.R. ..	24.4	37.6	58.0	40.0	37.7	18.4	20.3	17.3	24.0	15.5
	M.R. ..	3.9	1.7	2.0	2.0	0.7	0.4	0.2	—	0.04	0.04
Acute poliomyelitis	I.R. ..	0.7	1.4	0.8	1.0	2.2	2.2	1.3	1.7	9.5	3.0
	M.R. ..	0.1	0.1	0.2	0.1	0.4	0.1	0.1	0.3	1.5	0.7
Measles	I.R. ..	20.0	26.2	30.0	29.4	26.2	23.2	29.1	33.9	28.6	26.0
	M.R. ..	2.8	1.9	3.4	2.2	5.5	3.8	3.5	3.6	7.0	6.2

I.R. = Incidence Rate—calculated from notifications received.
M.R. = Mortality Rate.

99. In general, there is a sharp increase in incidence of these diseases during the years 1951/53, followed by a decline during the next two or three years; in the last three years of the decade, there has been a levelling-off or rise in the general morbidity. The general mortality trend is downwards, after a sharp rise during 1951/52, although there are exceptions, namely amoebiasis, poliomyelitis, and measles. The pattern thus presented must be considered against the background of a great influx of people, followed by expansion of all public services and a high birth rate giving a rapid increase in the number of susceptibles.

100. Consideration of the individual diseases reveals the following points:

(*a*) *Tuberculosis*

The incidence of this disease would appear to be gradually subsiding after the peak of 1951. The mortality rate, however, has declined markedly, and in 1959 was only 37% of that recorded in 1951.

(*b*) *Diphtheria*

This showed a rapid increase during the early years of the decade reaching a peak in 1953. The first organized anti-diphtheria campaign started in 1952, using alum-precipitated toxoid supplied by UNICEF. The ensueing campaigns of 1953 and 1954 resulted in a raising of the level of immunity to produce a marked decline in the incidence of the disease during the next two years. Since 1955 a combination of rapidly-rising population under 5 years of age plus increasing public apathy have resulted in a great increase in morbidity, although mortality has by no means been so greatly affected. In fact, the case fatality rate for diphtheria during 1959 was the lowest on record.

(*c*) *Enteric Fever*

Gradual improvements in sanitation and environmental hygiene have resulted in a markedly lower incidence of this disease. However, the elimination of annual fluctuations and the production of a further marked decrease in the morbidity rate is to a great extent dependent on the provision of an adequate water supply. The introduction of the use of Chloramphenicol is reflected in the rapidly-decreasing mortality from this disease.

(*d*) *The Dysenteries*

Both amoebiasis and bacillary dysentery have remained comparatively steady and reflect the need for a rise in the standards of individual personal hygiene.

(*e*) *Malaria*

This disease has declined markedly and only two deaths from it have been reported during the last three years.

(*f*) *Poliomyelitis*

Poliomyelitis has in general remained sporadic except in 1958 when there was a marked rise in incidence during the summer months. The mortality rate is, however, rising and, in view of the increasing population of young children and the gradual spread of water-borne sewerage,

will no doubt continue to do so until widespread immunization of the most vulnerable age groups has been attained. A polio virus laboratory unit has now been established and an investigation into the types and prevalence of enteric viruses is under way.

(*g*) *Measles*

The incidence rate of this disease, as measured by the number of notifications, has remained comparatively steady over the decade, but the mortality rate has shown a consistent rise, so that at present measles ranks second only to tuberculosis as a cause of death from infectious disease; this rise, at least in part, is due to improvements in death certification and must be considered in conjunction with the considerable fall in mortality from bronchopneumonia which has occurred since 1950.

PORT HEALTH

101. The Port Health Administration is responsible for all measures designed to prevent the introduction of infectious diseases into the Colony by land, sea, or air; for the sanitary control of the port areas and of the airport; for the carrying out of the provisions of the International Sanitary Regulations as embodied in the Quarantine and Prevention of Diseases Ordinance; for the compilation of epidemiological statistics and reports and for the organization of prophylactic vaccination campaigns. There are also statutory responsibilities under the Hong Kong Merchant Shipping Ordinance and the Asiatic Emigration Ordinance.

102. A weekly exchange of epidemiological information is maintained with the W.H.O. Epidemiological Station, Singapore, and copies of reports are forwarded for the information of the Secretary of State for the Colonies.

103. All persons entering the Colony are subject to a quarantine inspection, arrivals by sea at the two quarantine anchorages in Kowloon Bay and off Stonecutters Island, arrivals by air at Kai Tak Airport and persons crossing the land frontier, at the Lo Wu Quarantine Post. All immigrants without valid certificates are vaccinated against smallpox.

104. Other routine work carried out includes the deratting and disinsecting (including fumigation) of ships; sanitary duties in the port area and airport, including supervision of water supplies and control of mosquito breeding on small craft in the harbour; control measures to keep the port and airport free from *Aedes aegypti;* inspection of all vessels carrying over twenty unberthed emigrants; and issue of Bills of

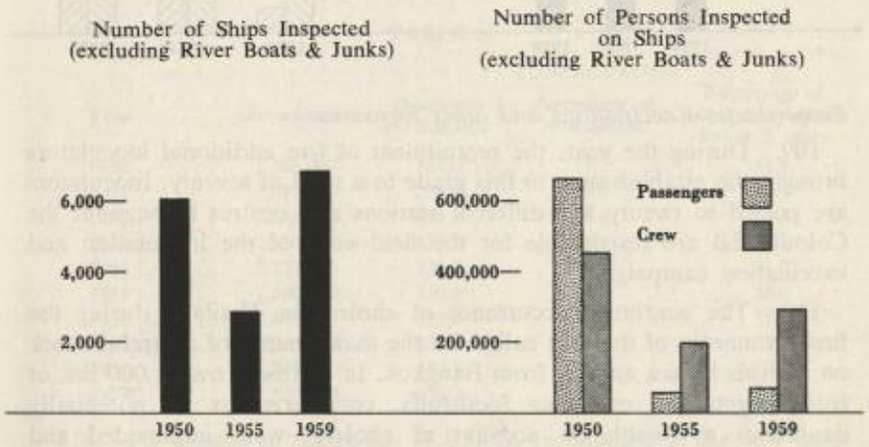
Health which, although no longer required for international voyages, continued to be applied for by the masters of many vessels.

105. An important service rendered to shipping is to give medical advice by wireless to ships at sea; during 1959, twenty ships cabled "Porthealth" Hong Kong for advice on the treatment of sick persons on board.

106. Four launches and one fumigation barge were allocated by the Marine Department for Port Health work. The four launches, equipped with stretchers, first aid equipment and radio telephones, provide an ambulance service in addition to the routine work in the port area. They were also used frequently by the Department for miscellaneous duties, mostly in the outlying islands.

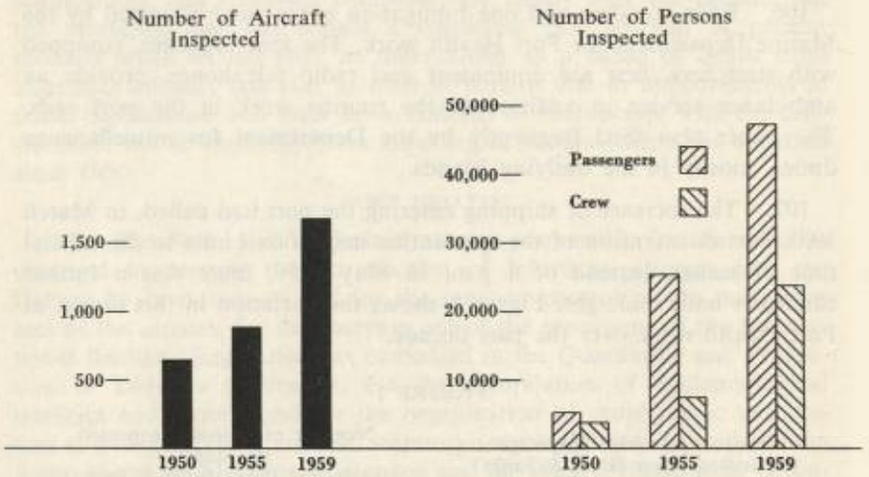
107. The increase of shipping entering the port had called, in March 1958, for an extension of the quarantine inspection hours to the official time of sunset, instead of 6 p.m. In May 1959, there was a further extension until midnight. Figure 1 shows the variation in this aspect of Port Health work over the past decade.

FIGURE 1



108. The night landing service at Kai Tak Airport was officially inaugurated during July. The medical inspection hours were extended accordingly to midnight, or later as required, and the additional staff necessary for this service was provided. Figure 2 shows the expansion of work at the Airport during the last 10 years.

FIGURE 2



Prophylactic Vaccinations and other measures

109. During the year, the recruitment of five additional inoculators brought the establishment in this grade to a total of seventy. Inoculators are posted to twenty five different stations and centres throughout the Colony and are responsible for the field-work of the inoculation and vaccination campaigns.

110. The continued occurrence of cholera in Thailand during the first six months of the year called for the maintenance of a careful check on arrivals by sea and air from Bangkok. In addition, over 1,000 lbs. of fruit, vegetables, or other foodstuffs, considered to be potentially dangerous to health on account of cholera, were impounded and destroyed.

111. A small outbreak of smallpox occurred in Singapore during April and May; a careful survey was made of all passengers and crews

arriving from that port by sea or air, but no case of the disease was detected or occurred.

112. The number of persons arriving at Lo Wu showed an increase of 33% over the previous year. The modifications to the Frontier Port, which were completed at the end of 1958 enabled a smoother traffic flow and hence there was no difficulty in coping with the increased numbers. Of the 416,133 persons entering through Lo Wu during the year 50,543 were vaccinated against Smallpox.

Year	*Number of Persons Inspected*
1950	1,452,698
1955	113,871
1959	416,133

TUBERCULOSIS

113. While progress in the prevention of tuberculosis in the youngest age groups has been substantial during the past ten years, morbidity in the adult groups has remained very much the same. There has been nevertheless an encouraging fall in the mortality rate and those with tuberculosis are living longer, the average age at death from tuberculosis now being 37 years whereas in 1952 it was 25 years.

TABLE 6

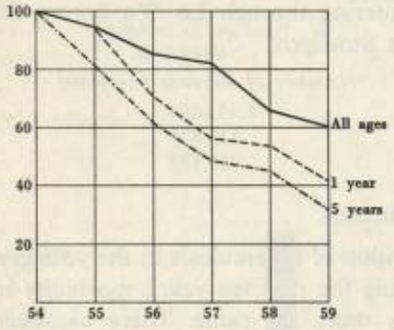
TUBERCULOSIS

Year	*Population*	*Death rate per 100.000*	*Percentage of total deaths*	*Percentage of tuberculosis deaths below 5 years*
1950	2,265,000	144.0	17.7	38.3
1951	2,013,000	208.0	20.0	34.0
1952	2,250,000	158.8	18.4	34.3
1953	2,250,000	130.6	16.0	36.2
1954	2,277,000	126.3	14.9	31.2
1955	2,340,000	120.0	14.7	28.0
1956	2,440,000	107.0	13.6	25.0
1957	2,583,000	103.6	13.9	21.2
1958	2,748,000	83.8	11.2	19.6
1959	2,857,000	76.2	10.7	19.2

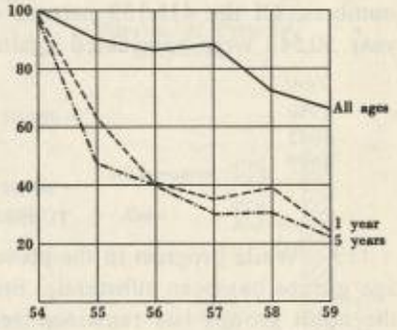
114. As a result of the policy of B.C.G. vaccination of the new born, chemo-prophylaxis of tuberculin positivity naturally acquired under 3 years of age and contact examination and treatment, the death rates at 5 years of age and under have declined very sharply since 1954.

FIGURE 3A

Graphs Showing the Rate of Decline of Death Rates from various Forms of Tuberculosis in Selected Age Groups based on 1954



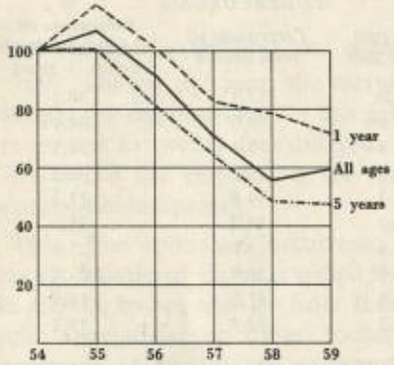
Tuberculosis Deaths All Forms



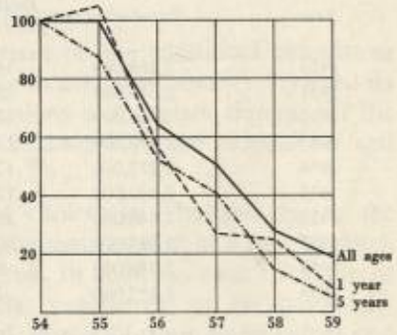
Pulmonary Tuberculosis Deaths

FIGURE 3B

Graphs Showing the Rate of Decline of Death Rates from various Forms of Tuberculosis in Selected Age Groups based on 1954



Tuberculosis Meningitis Deaths



Tuberculosis (Other Forms) Deaths

115. During this five year period there has been a fall of 78% in the deaths from pulmonary disease under five years of age, a fall of 94% in the deaths from other forms of tuberculosis but a comparatively small reduction in the death rate from tubercular meningitis. This latter suggests little reduction in the morbidity in the total population and that only B.C.G. vaccination is affecting meningeal tuberculosis which, unlike the other more chronic forms of tuberculosis, is practically unaffected by treatment.

116. With regard to morbidity, tuberculosis notifications bear little relation to the total problem and the stage has not yet been reached when a population X-ray survey can be conducted with the certainty of offering treatment to all active cases detected. Nevertheless, evidence accumulated as a result of surveys over the last decade gives good reason to believe that an average of 2% of the total population have active tuberculosis; a further 10% have radiological evidence of quiescent or arrested disease which may require little more than supervision. It is therefore assumed that facilities for the treatment of up to 60,000 cases of active disease will be necessary before any significant impact can be made on tuberculosis morbidity. About half this number of cases are already recorded at the Government Chest Clinics and an unknown number may be under treatment by other sources.

Agencies engaged in tuberculosis control

117. Government policy is to encourage and assist all voluntary agencies to participate in medical, social and welfare schemes which can be integrated into the programme of tuberculosis control. Because of the magnitude of the morbidity problem the greatest number of cases are being treated by ambulatory chemotherapy and most of this group are under treatment at the Government Chest Clinics. Hospital treatment on the other hand is provided largely by the Hong Kong Anti-tuberculosis Association, the Tung Wah Group of Hospitals, the Junk Bay Medical Relief Council and the Society for the Relief of Disabled Children. All these organizations receive recurrent grants-in-aid from Government; certain other hospitals also maintain a limited number of beds for tuberculosis patients. There is a close liaison between the voluntary agencies and the Government Tuberculosis Service.

118. The control programme is based on the following measures:

(i) Ambulatory chemotherapy of known cases.

(ii) Prophylactic chemotherapy of young contacts.

(iii) B.C.G. vaccination of new-born children and older tuberculin negative reactors.

(iv) Hospital treatment of selected cases that will respond to medical or surgical in-patient treatment.

(v) Limited case finding through X-ray surveys subject to sick leave and re-employment guarantees.

(vi) An annual X-ray survey of all Government employees.

Government Tuberculosis Service Facilities

Ambulatory Chemotherapy

119. First introduced in 1950, using P.A.S. for a group of 45 cases, ambulatory chemotherapy now plays the major part in the control programme. Experience of the combined use of P.A.S. and I.N.A.H. was not so successful as had been expected from the good reports of its use elsewhere. Therefore two years ago streptomycin by daily injection on six days of each week was added to the course of treatment with combined P.A.S. & I.N.A.H. The three drugs are now given as a standard until no further improvement is seen, which may be for a period of up to fifteen months. Thereafter the combined P.A.S. & I.N.A.H. tablets are continued, the minimum duration of treatment being for two years. Complications arising from this course of treatment are relatively rare and the few cases of hyper-sensitivity seen at the Chest Clinic are admitted to hospital; however, the total incidence of skin sensitivity reactions is not yet known and a number of cases attend dermatology clinics without informing the chest clinics. This aspect of the problem is now under investigation.

120. The principal problems of ambulatory chemotherapy are the failure to continue with treatment once symptoms are relieved, irregular attendance and the failure to take the PAS/INAH tablets in addition to the streptomycin injections. During 1959, 21% of the cases under treatment failed to continue treatment despite home visits and follow-up; of those patients attending the clinics, a sample of 6000 examined showed that between 87% and 90% had PAS in the urine. This indicates that the combined PAS/INAH tablets are on the whole taken regularly.

121. There are three fulltime chest clinics operating, one on Hong Kong Island and two in Kowloon. In addition there are eleven part-time out-patient clinics and nine injection centres. Evening sessions have been continued at three clinics and are beginning to prove more popular.

The establishment of the injection centres conveniently sited for those at work has greatly improved attendances for treatment. In addition, in the New Territories the staff of the clinics at Tsuen Wan, Yuen Long, Ho Tung, Tai Po, Sai Kung, Lamma, Peng Chau & Cheung Chau maintain an injection service. This also applies to the clinics at Stanley and Aberdeen on Hong Kong Island.

122. All treatment is given free of charge at the Government Chest Clinic.

123. The volume of work now undertaken at the Government Chest Clinics has strained the facilities to the utmost and has imposed a limit on the number of new cases that can be accepted at the major chest clinics each day. This limit applies only to cases presenting voluntarily for investigation and does not apply to referred cases. The expansion of the work at the Chest Clinics during the ten year period is shown in Table 7.

TABLE 7

GOVERNMENT CHEST CLINICS 1950/59

	1950	*1955*	*1956*	*1957*	*1958*	*1959*
First attendances	19,282	40,061	34,607	35,126	39,454	39,008
Cases of tuberculosis discovered	6,944	10,449	10,733	11,428	12,270	14,406
Total attendances for treatment	40,324	320,426	401,568	539,282	803,326	1,655,100*
Under treatment from previous year	—	—	1,703	5,887	9,132	13,733
Started treatment during the year	—	—	7,861	7,964	11,546	11,357
Completed treatment ..	—	3,386	1,037	1,213	1,048	2,064
Failed to attend	—	852	2,022	2,868	3,048	5,391†
Admitted to Hospital from Chest Clinics ..	586	965	1,029	1,078	1,511	1,587
Still on treatment at end of year	—	2,824	5,887	9,132	13,733	16,062

* Due to expansion of injection facilities.

† A large proportion are recorded as 'returned to village outside Hong Kong'.

124. During 1959 there has been noted for the first time a substantial reduction in the severity of the disease in new cases and there is no doubt that the proportion of early cases diagnosed is increasing. The percentage of infectious cases dropped from 29% in 1958 to 20% in 1959. This reduction gave cause for a bacteriological cross check of patients entering and leaving hospital and the hospital results, after multiple smears and culture, compared more closely than was expected with the clinic results, which are based on a single sputum examination.

Chemoprophylaxis

125. Starting in 1958, INAH has been given for a period of one year to children under the age of three years with a positive tuberculin test not due to B.C.G. and who shew no radiological or other sign of tuberculosis. This is part of the contact examination scheme but is also applied to other children attending the Maternal & Child Health Clinics. The number treated totalled 328 of which 200 were attending the Maternal & Child Health Clinics. In this way, acute post primary tuberculosis which constitutes a considerable proportion of infant deaths, mainly from tubercular meningitis, has also been attacked.

126. With the widening cover by B.C.G. vaccination the proportion of contacts in this group who would be suitable for INAH therapy is diminishing and is expected to continue to do so.

B.C.G. vaccination

127. A B.C.G. vaccination campaign was started in 1952 under the sponsorship of and with assistance from U.N.I.C.E.F., and continued in this way until 1955. The campaign as such was then discontinued and the activities incorporated into the general organization of the Tuberculosis Service. The personnel employed in this work were dispersed into other sections of the Tuberculosis Service where it was considered they could operate more conveniently. The central B.C.G. office has now become a supply organization with a total staff of five, under the administrative control of the Tuberculosis Service and is responsible for the examination and vaccination of contacts, surveys of children in certain groups and for the operation and control of the B.C.G. campaign in new born children.

128. The B.C.G. Vaccination figures since the beginning of the campaign in 1952 are as follows:

TABLE 8

	Tuberculin Test		*BCG Vaccination*	
Year	*Completed Test*	*Negative Vaccinated*	*New Born Babies Vaccinated*	*Grand total Vaccinated*
1952	176,728	38,173	3,120	41,293
1953	77,422	27,024	4,883	31,907
1954	52,620	15,234	3,050	18,284
1955	58,606	15,775	9,587	25,362
1956	38,523	5,629	23,418	29,047
1957	34,737	10,074	35,149	45,223
1958	29,107	10,390	49,865	60,255
1959	16,568	8,518	62,261	70,779
Total	484,311	130,817	191,333	322,150

B.C.G. vaccination of New-born Babies

129. B.C.G. vaccination of new-born babies is carried out by the multipuncture method using 20 mgm/c.c. vaccine. This vaccine is freely available to all private medical practitioners, midwives and clinics.

130. The vaccinators attached to the central B.C.G. office visit the principal hospitals as often as appears necessary to achieve maximum results; in certain hospitals this entails a daily visit. The calls upon their time are increasing and to maintain the tempo further increases of staff will be required. Of the 104,579 babies born during the year, 62,261, or 59.53%, were vaccinated with B.C.G. The success of this aspect of the work can be gauged from the returns over the past eight years:

Year	*Percentage vaccinated*
1952	4.33
1953	6.49
1954	3.66
1955	10.59
1956	24.21
1957	35.93
1958	46.86
1959	59.53

131. The returns each month show a steadily mounting total and it is anticipated that the current year will show further substantial increases. This aspect of the control programme probably gives the best return for the work done in the group to which it is applied and should, if reports from elsewhere are to be believed, show excellent long term results in reducing morbidity as well as mortality.

B.C.G. Vaccination of Other Groups

132. Vaccination of other age groups is carried out by the classical method using vaccine of 1 mgm./c.c. strength. Vaccination is given to tuberculin negative contacts of known cases of tuberculosis, through the tuberculosis clinics; it is also carried out in the Maternal and Child Health Clinics and at the B.C.G. clinic operated by the Hong Kong Anti-Tuberculosis Association. A certain amount of vaccination is also carried out by the School Health Service. The total number of children vaccinated during 1959 was 8,518 out of a total of 16,568 children tested. This side of the work is steadily decreasing and, with the rapid increases in the number of B.C.G. vaccinated new-born children, should eventually be reduced, it is hoped, to a minimum.

Chest Surgical Clinics

133. A Clinic is held weekly at the Government Chest Clinic in Wan Chai by the Government Chest Surgeon where he sees cases referred for an opinion and the follow-up cases already operated upon. The attendances during the year were as follows:

First visits	123
Revisits	612
Total	735

134. A further session is held once in two weeks by the Chest Surgeon attached to the Grantham Hospital who is assisting with the treatment of chest clinic surgical cases.

First visits	226
Revisits	144
Total	370

135. As more patients come under ambulatory treatment the number of cases suitable for chest surgery is increasing. Thus there has been a slight rise recently in the numbers on the waiting list, despite the combined efforts of the two thoracic surgeons.

136. The thoracic surgery done in connexion with clinic patients was as follows:

TABLE 9

	Govt. Thoracic Surgeon	*Grantham Hospital Surgeon*
Thoracoplasty	18	—
Corrective Thoracoplasty	16	71
Wedge resection	6	6
Segmental resection	55	26
Lobectomy	48	60
Pneumonectomy	8	21
Other operations		
(*a*) Minor	12	18
(*b*) Major	16	2

With the recent participation of the Ruttonjee Sanatorium Surgeons it is anticipated that the waiting time for chest surgery, now less than three months, can be reduced to a minimum or even abolished, despite the increasing number of cases for which surgery is indicated.

The Orthopaedic Clinic

137. Started in 1957, this clinic is held at the Wan Chai Chest Clinic, under the joint direction of the University Consulting Orthopaedic

Surgeon to the Government and the Government Orthopaedic Specialist. Medical, clerical, nursing and social assistance is provided by the Government Tuberculosis Service and chemotherapy and supervision are carried out in the Government Chest Clinics. The X-ray service is provided by the Hong Kong Anti-Tuberculosis Association at Ruttonjee Sanatorium, on a repayment basis. A plaster clinic operates in association with this Clinic and physiotherapy is also available at Wan Chai.

138. Treatment is initially mainly by chemotherapy and, at the appropriate time, hospital treatment is available in the surgical wards of Queen Mary Hospital, at the Grantham Hospital, at the Sandy Bay Convalescent Home and at the Ruttonjee Sanatorium.

139. Attendance at the Orthopaedic clinics for consultation were as follows:

	1957	*1958*	*1959*
First visits	543	629	617
Return visits	768	2,083	3,503
Total	1,311	2,712	4,120

140. An analysis of the 1959 cases in relation to the site of disease showed the following:

Spine	303
Hip Joint	125
Other	189
Total	617

141. The Orthopaedic Surgeons are now of the opinion that most of the old chronic cases have been treated and that the new cases being seen are of comparatively recent origin. It is also possible that as a result of B.C.G. vaccination there has been a true drop in the incidence of tubercular bone disease in the youngest age groups.

Radiology

142. All X-ray work in connexion with the Tuberculosis Service is carried out by the staff of the Radiological section who are administratively responsible to the Senior Radiological Specialist. Static units are installed in the main clinics and branch clinics are served as far as possible by two mobile units.

143. First examinations are now all done on large papers which satisfactorily serve the purpose and are considerably cheaper than films. In addition they are less subject to the effects of the humid climate.

144. The total number of exposures rose again by almost 10% to 194,181, of which 128,894 were on large papers or films.

Bacteriological Examinations

145. The bacteriological work done for the Tuberculosis Service is carried out under the direction of the Government Pathologist. The total number of sputum smears examined was 44,785, a rise of 1,714 as compared with last year. Gastric cultures totalled 186 while laryngeal cultures, which have largely replaced gastric cultures, reached a total of 1,131.

146. Wide publicity is being given to the occurrence of atypical acid fast organisms in various parts of the world and the culture procedure in the laboratories has been adjusted to find examples in Hong Kong. Already a few have been isolated but the present indications are that this is likely to be a curiosity rather than a local problem.

Hospital Treatment

147. The detailed distribution of beds for tuberculosis in the civil hospitals throughout the Colony is shown in Appendix 5 and the total figure can be accepted as the average number of beds set aside throughout the year for the in-patient treatment of tuberculosis. Of this number 252 beds are maintained in Government Hospitals, 876 in hospitals managed by the Hong Kong Anti-Tuberculosis Association, 200 are in the Tung Wah Group of Hospitals and 180 in the Haven of Hope Sanatorium. This number may fluctuate from time to time particularly in the Government Hospital at Lai Chi Kok where this year the greatly increased diphtheria incidence called for a temporary redistribution of convalescent and tuberculosis beds, over a period of two months, for the nursing of cases of severe diphtheria.

148. In addition to the beds available to the Tuberculosis Service in Government Hospitals, there are 444 beds in the Grantham Hospital and 336 beds in the Ruttonjee Sanatorium, which includes the Freni Memorial Convalescent Home. Admission is governed by the policy of utilizing the beds to the best possible advantage of patients whose recovery can be hastened by medical, pulmonary surgical or orthopaedic treatment or who require emergency admission for complications arising during ambulatory chemotherapy. It is not yet possible to use hospital beds entirely for the segregation of open cases whose home conditions are such that isolation is desirable. This aspect of the control programme is being investigated with a view to providing an institution for

the open chronic cases who do not respond to chemotherapy. Unfortunately staff and financial considerations have so far prevented the formulation of any positive steps in this direction.

The Hong Kong Anti-Tuberculosis Association

149. Incorporated by statute, the Association administers two Hospitals, a Convalescent Home, a B.C.G. Clinic, a Tuberculosis Insurance Scheme and a Health Education Service. The two hospitals are the Grantham Hospital and the Ruttonjee Sanatorium; the Freni Memorial Convalescent Home is adjacent to the Ruttonjee Sanatorium and the two institutions are managed as one. The Hong Kong Anti-Tuberculosis Association Board is the governing body of the Association; the Grantham Hospital is the responsibility of the Grantham Hospital Management Board and the Ruttonjee Sanatorium and Freni Memorial Home are managed by the Ruttonjee Sanatorium Management Board. The Hospitals Management Boards are appointed annually by the Board of the Association and consist of nominated members of the Association Board; members of the staff of each institution attend the respective Management Board meetings.

150. The Association's work receives considerable voluntary support and the hospitals are generously subsidized by Government. Treatment at the Ruttonjee Sanatorium and the Freni Memorial Home is entirely free; at the Grantham Hospital maintenance fees are charged on a non-profit making basis and Government now subsidizes 444 of the beds at the rate of $18 per day for each bed occupied by a Government-sponsored non-fee-paying patient.

Ruttonjee Sanatorium & Freni Memorial Convalescent Home

151. Operated as a single unit by a Board of Management these two institutions accommodate 336 beds of which 120 are in the Convalescent Home. Treatment is free and 42 beds are maintained by sponsoring bodies at an annual endowment cost of $3,500 per bed per annum. A Government subvention of $1,346,979 towards capital and maintenance costs was made during the year.

152. Medical and senior nursing staff are provided by the Sisters of the St. Columban Roman Catholic Mission and staff of the Medical Faculty of the Hong Kong University act in a consultant capacity. Full medical and surgical treatment are given free of charge and there is a close liaison with the neighbouring Wan Chai Government Chest Clinic. Admission is through the sponsoring agencies, the University Clinical Units and the Government Chest Clinic.

153. The Sanatorium staff conduct a follow-up clinic for all patients discharged from Ruttonjee Sanatorium and the Freni Memorial Convalescent Home. All the necessary social work in these institutions is the responsibility of the Almoners working in the Tuberculosis Service.

154. During the last few months of the year more pulmonary cases in need of thoracic surgery have been under treatment and more beds have been set aside for the surgical treatment of orthopaedic tuberculosis cases referred from the Wan Chai Orthopaedic Clinic referred to in paragraph 137 above.

TABLE 10

The number of patients admitted for treatment during the year was:

Adults through Government clinics	279
Children (pulmonary) through Govt. clinics	55
Children (orthopaedic) through Govt. clinics	51
Other admissions and re-admissions	277
Total admissions ...	662

Grantham Hospital

155. Designed and built as a modern hospital of 540 beds for the treatment of tuberculosis, this institution was opened in June 1957. Until August 1958 it was possible to staff only 360 beds of which 96 beds were set aside for paying patients. During the last quarter of 1958 the hospital became fully operational and now 444 beds are maintained by a Government subvention of $2,926,482.

156. The hospital is maintained by the Association through a Board of Management and free treatment is given in the 444 subsidized beds. Of these beds, 180 are under the clinical supervision of the Government Tuberculosis Service, the remainder of the hospital beds being the clinical responsibility of the Board's medical and surgical staff, consisting of a Medical Superintendent, a Chest Surgeon, an Anaesthetist and 4 Medical Officers. Government clinical staff consists of the Senior Tuberculosis Specialist, the Orthopaedic Specialist and the Thoracic Surgical Specialist, all of whom give part time services, and 3 full time seconded Medical Officers.

157. Subsidized patients on discharge attend the Government Chest Clinics for further treatment but the Grantham medical staff have full follow-up facilities, as desired, through the Government clinics. Medical social work for all subsidized patients is carried out by the Almoners in the Government Tuberculosis Service.

158. The number of subsidized patients admitted for treatment during the year was:

TABLE 11

Grantham Hospital:		
Direct admissions		225
Transfers from paying beds		40
Government Unit (pulmonary)		173
Government Unit (orthopaedic):		
Male 30	115	
Female 28		
Children 57		
Total admissions		553

The Tung Wah Group of Hospitals

159. This Group of Chinese Charitable Hospitals maintain some 200 beds for the medical treatment of tuberculosis, mainly cases of a more chronic nature. In addition, outpatient clinics are held for cases under ambulant chemotherapy. In these hospitals approximately one third of the total births in the Colony take place each year and accordingly great emphasis is placed on B.C.G. vaccination of the new-born. Throughout the year 73.06% of these new born babies were given B.C.G. in the hospital wards.

The Haven of Hope Sanatorium

160. Situated in the New Territories and managed by the Junk Bay Medical Relief Council, this Sanatorium has maintained 180 beds throughout the year for the medical treatment of tuberculosis. The Sanatorium is supported by a group of Protestant Missions of various denominations which sponsor the majority of the beds. Government gives an annual subvention of $108,000 for the maintenance of 45 beds for the free treatment of villagers suffering from tuberculosis, and for the provision of certain X-ray services to local residents. The Council also maintains an outpatient clinic for tuberculosis patients in Rennie's Mill.

161. Surgical facilities for pulmonary and orthopaedic cases in the Sanatorium are provided by the Alice Ho Miu Ling Nethersole Hospital on Hong Kong Island where patients are temporarily transferred for surgical treatment.

The Sandy Bay Convalescent Home

162. This Home of 54 beds is maintained by the Society for the Relief of Disabled Children and staffed in part by the Hong Kong

Branch of the British Red Cross Society. It is designed for the convalescent care of children suffering from orthopaedic conditions many of which are due to tuberculosis. The Society receives a Government subvention of $15,000 towards maintenance costs.

X-Ray Surveys

163. Up to the present time, X-ray surveys of the general population have not been practicable in that the facilities for subsequent investigation and treatment have been fully occupied in dealing with the existing case load. Certain selected groups are X-rayed annually however and X-ray surveys are carried out on request, for commercial and industrial organizations prepared to guarantee certain sick leave and re-employment facilities for active cases of tuberculosis detected. There has been a considerable expansion of this latter activity during the year.

164. For the past ten years, Government employees have been required to undergo an annual X-ray examination of the chest. This follows a strict pre-employment examination during which all cases showing radiological changes are fully investigated. Therefore incidence of active disease in Government employees gives an indication of the effects of the impact of a high tuberculosis morbidity on a selected group in full employment. During 1959 an incidence of 1.29% of active tubercular disease was uncovered amongst Government employees; however there were only two deaths from tuberculosis in the group, which gives a mortality rate of 6 per 100,000.

165. All convicted prisoners are also X-rayed annually and here the percentage of active disease rises to 5.15%. As a considerable proportion of prisoners are also drug addicts and are drawn from an unstable element of the community, this high morbidity is not unexpected.

166. A total of 76 firms participated in the X-ray survey scheme and 1.78% of active cases were diagnosed. Many of these firms also have annual surveys carried out so that this group of individuals is also selected. It is of interest that the number of firms and individuals participating rose from 51 to 76 and 8,768 to 12,995 respectively when compared to 1958.

School Teachers

167. Teachers in Government schools are X-rayed annually in the course of the Government survey. In private schools, teachers are required to register with the Education Department and before being passed fit to teach they have to undergo a chest X-ray, not necessarily

by the Government X-ray units. Accordingly records are available only for these teachers in private schools referred to the Government Chest Clinics because of an unsatisfactory X-ray. The figures for the past five years are:—

TABLE 12

	1955	*1956*	*1957*	*1958*	*1959*
Referred to Chest Clinics ...	348	455	318	249	179
Unfit to teach on account of pulmonary tuberculosis ...	36	49	53	23	32
Percent	10.6%	10.7%	16.6%	9.2%	17.9%

This high incidence is undoubtedly due mainly to the referral of cases showing suspicious radiological findings for further investigation.

168. Those teachers found to be unfit are offered priority of admission to hospital but there is no compulsion and it is suspected that a number of teachers with active disease may be teaching in unregistered schools.

169. With the opening of another major full-time chest clinic in 1960 and plans in hand for two static X-ray survey centres in addition to the mobile units at present in use, it is hoped to start certain general population surveys in the near future, beginning in Resettlement Estates.

Medical Social Work.

170. This is carried out by a staff of Almoners assisted by 35 Tuberculosis Workers. The importance of this aspect of the work within a system of ambulatory chemotherapy needs no emphasis. Dense overcrowding, no comprehensive social insurance, low economic standards and the wide extent of out-patient therapy make imperative the earliest possible development of the home contact if the fullest use is to be made of the limited social assistance available.

171. The roles of the Tuberculosis Almoner and the staff of Tuberculosis workers are complementary. As soon as a diagnosis has been made, the Almoner concerned interviews the patients and the social and economic circumstances are recorded. Thereafter, within one month if possible, a Tuberculosis Worker pays a home visit.

172. Once admission to hospital, other than as an emergency, has been recommended, names are placed on the waiting lists maintained by the Almoners according to the category of treatment required. The categories are chest medical (three units), chest surgical (three units), orthopaedic (four units), and special investigation (one unit). As far as

possible all forseeable social problems are thus settled before admission, saving much work at a later date.

173. Visits are paid by the Almoner to patients in hospital, a weekly visit being the usual practice. When possible the visit is paid in conjunction with the medical officer concerned. On discharge from hospital all patients are given a small supply of drugs to ensure continuity of treatment until arrangements have been made for further care at the clinic most convenient to the place of residence.

174. For patients under ambulatory treatment at a clinic, attendance registers are kept by the Almoners so that failure to attend or irregularity in attendance can be noted. Defaulters are visited by Tuberculosis Workers without delay and are encouraged to resume attendance, the dangers of failure being outlined and explained.

175. Drugs for oral administration are distributed through the Almoners section, usually by the Tuberculosis Workers. As the total of patients on ambulatory chemotherapy at any one time is in the neighbourhood of 16,000 the magnitude of this aspect of the work is considerable. The distribution of oral drugs as made up by the manufacturers in packs containing one week's supply has been a great advantage.

Assistance to Patients

176. A sum of $250,000 was available during 1959 for assistance to patients. This aid was disbursed in the form of cash grants or additional food. During the year, 282 families received average cash grants of $23.25 each week compared to 238 families receiving average grants of $21.45 during 1958. Other cash grants, for travelling expenses, domestic help, rehabilitation grants and surgical appliances for orthopaedic cases, were also made.

177. Additional food, in the form of one pound of milk powder per patient each week, cost $99.488. This form of aid was supplemented by assistance in kind consisting of 10,982 C.A.R.E. food parcels and 6,000 lbs. of fortified noodles.

The Tuberculosis Workers

178. The greatest part of the home visiting is carried out by the Tuberculosis Workers. Trained specifically for duties most suited to local conditions, they have no nursing training as their work is mainly on the social side. They are responsible through the Senior Tuberculosis Workers to the Almoner and each has duties in a clinic which

cover reception, the maintenance of records and registers and assistance in the special clinics. Outside the clinic, each T.B. Worker is responsible for a district and afternoons are devoted to home visiting, health education and the organization of contact examinations.

179. The training is an 'In service' one and lasts for six to twelve months, the emphasis being on the practical side with a minimum of lectures on the elements of medical social work, record keeping and health education.

Tuberculosis Contacts

180. Efforts are made in the course of home visiting to have every close family contact of known cases of tuberculosis examined to exclude tuberculosis. Contacts under the age of 8 years are tuberculin tested, negative reactors being offered B.C.G. vaccination, positives being X-rayed. Other contacts are X-rayed at their convenience and without the need to first register at the chest clinics.

The findings during the year were as follows:

TABLE 13

		1958	*1959*
Under 8 years of age			
Tuberculin Tests	Negatives	1,163	996
	Positives	2,254	1,928
Clinical Findings of T.T. Positive cases	Active Tuberculosis ...	148	110
	Inactive Tuberculosis ...	37	65
	Suspicious	384	324
	Free of Tuberculosis ...	1,685	1,429
Percentage of active tuberculosis		4.33%	3.72%
Over 8 years of age			
Results of Examination following contact X-ray	Active Tuberculosis ...	385	336
	Inactive Tuberculosis ...	183	159
	Suspicious Tuberculosis ...	746	658
	Free of Tuberculosis ...	7,070	6,856
Percentage of contacts over 8 years with active tuberculosis		4.59%	4.19%
Grand total of contacts examined ...		11,801	10,933

181. There has been a drop in the total number of contacts examined as compared with previous years, but there appears to be no significant change in the findings.

MALARIA BUREAU

182. The Malaria Bureau, under the direction of the Government Malariologist, is responsible for all malaria control undertaken in the Colony and, in certain instances, deals with the breeding of culicine mosquitoes. It also offers expert advice to the Armed Services, the Pest

Control Unit of the Urban Services Department and to Hei Ling Chau Leprosarium. Lectures are given on malaria and allied subjects to various groups of health personnel under training.

Control operations

183. The important malaria vectors are *A. minimus* and *A. jeyporiensis var. candidiensis*, while *A. maculatus* and *A. hyrcanus* have also been proved to be potential carriers. For control purposes the Colony is divided into 'protected' and non-protected areas.

184. The whole of the urban area comprising Hong Kong Island, Kowloon, and New Kowloon is a protected area. In addition there are relatively small zones in the New Territories, at Rennie's Mill Camp, Kau Wa Keng, Chi Ma Wan Prison and the township on Cheung Chau Island, where control measures are maintained. Since the 1st April, 1959, similar measures have also been instituted at the new Shek Pik Reservoir site for the protection of workers engaged in the construction of the dam.

185. The extension of the control programme to Rennie's Mill and Kau Wa Keng only commenced in 1950, to Cheung Chau Island in 1951 and to Chi Ma Wan in 1955. From 1952 onwards, in the face of progressive urban development, protection has been gradually extended to the Ngau Tau Kok, Kwun Tong, Cha Kwo Ling and Lei Yue Mun areas in New Kowloon.

186. The method of control of malaria is based predominantly on anti-larval measures consisting of the rough training of streams, ditching and larviciding. Anti-malaria oil was at first employed as the main larvicide but, starting in 1950, Gammexane dispersible powder was used instead of oil. This continued satisfactorily until 1957 but, on account of development of resistance on the part of malaria vectors elsewhere against chlorinated hydrocarbon insecticides after prolonged use and in order to delay the possibility of the development as long as possible, it was considered advisable to reintroduce the use of oil, except in agricultural lands where its application would be unsuitable. Under local conditions this use of oil has proved to be safe and economical.

187. In certain instances, the Bureau also undertakes the control of culicine mosquito breeding. Against *Culex fatigans*, which has shown definite resistance to Gammexane, Diazinon dispersible powder has been found very useful, particularly when breeding takes place in sumps. For *Aedes togoi* which breeds profusely in brackish water in numerous rock

pools along the shore, Gammezane 'bricks' have continued to prove their effectiveness without any sign of resistance developing.

188. Results of the malaria control work in the urban areas have so far been satisfactory and the incidence of natural malaria transmission has virtually been reduced to zero. Routine adult mosquito catches and larval surveys were carried out in the protected areas of Kowloon and Hong Kong throughout the year. Except in one or two instances when young larvae of *A. maculatus* and *A. hyrcanus* were detected, all the other findings were negative. However vector mosquitoes abound just outside the protected areas and, given a favourable opportunity, can regain a foothold at any time. Therefore constant vigilance is necessary and there is no room for complacency or relaxation of the control measures.

189. In the New Territories, except in the few selected areas as mentioned above, there is as yet no overall vector control programme. In the rural districts, where the population is scattered and wet cultivation is traditional, to adopt anti-larval measures as currently practised in the urban areas would not yet be feasible owing to the agricultural practices in use. Further, comprehensive anti-adult mosquito measures, once instituted, would have to be continued as long as unprotected contiguous borders are present, with a grave risk of resistance developing.

190. Police personnel and troops stationed in the New Territories continue to depend on paludrine prophylaxis as their main line of defence against malaria.

191. In the Sai Kung district, in the eastern part of the New Territories where the majority of malaria notifications originate, chemoprophylaxis by weekly distribution of paludrine tablets was started towards the end of March 1959 in the two comparatively small villages of Pak Kong and Pak Sha Wan. This was designed as a pilot experiment in control by chemoprophylaxis but, unfortunately, the experiment had to be discontinued in January 1960 as the necessary co-operation from the public began to dwindle. The initial results of the scheme were however encouraging, since not a single case of fresh infection had been reported in either of these two villages throughout the period of medication; indeed, up to time of writing this report, although cases continued to appear in neighbouring villages, no fresh infections have been reported from the two villages concerned.

Cost of operation of the Bureau

192. The entire Colony population is at risk of the infection but approximately 2,367,000 persons are now under protection by anti-larval methods. For the year, the cost of the control operations, including action against nuisance mosquitoes in certain areas, was 37 cents (about five pence half penny) per head. This takes into account the emoluments of all staff and the expenditure on anti-malaria oil, insecticides and equipment.

Malaria incidence

193. Notification of malaria was made compulsory for the first time in the Colony in September 1945. The enforcement was discontinued in May 1948, but since June 1950 has been reintroduced.

194. Since 1950 the reduction in malaria mortality has been striking as may be seen from the following figures:

TABLE 14

Year	*Cases notified*	*Deaths*
1950	552	89
1951	756	35
1952	1,305	46
1953	899	46
1954	858	16
1955	431	9
1956	496	4
1957	447	0
1958	659	1
1959	442	1

195. Just over 90% of all cases notified during 1959 were from outside the urban protected areas, and of these 72.6% came from the Sai Kung district; 27.1% of the Sai Kung notifications were from the boat population, the remainder being scattered amongst 43 small villages in the district. Of the blood parasites identified, 89.1% were *P. vivax*, 10.2% *P. falciparum*, 0.5% *P. malariae*, and 0.2% mixed infection of *P. vivax* and *falciparum*. All cases notified from the protected urban areas were fully investigated and not one could be proved to have contracted the infection in the protected zones.

196. There was one death recorded as due to malaria and again, as in the previous year, the victim had been the subject of repeated blood transfusions, this time for a malignant condition of the blood.

Malaria surveys

197. Two malaria surveys were carried out, one in the urban protected areas and the other in the border zone in the north of the New Territories between Lo Wu and Sha Tau Kok. The former survey was amongst children between 2 and 14 years of age and was carried out in co-operation with the School Health and Maternal & Child Health Services. Between April and October 1959, 1,744 children aged two to five years were examined; the spleen rate was zero. From April to June 1959, 6,676 school children aged five to fourteen years were also examined and the number with palpable spleens was 18 or 0.27%. In addition 4,033 blood smears were taken from infants under one year of age attending urban Maternal & Child Health centres. All smears were cross checked at the Government Institute of Pathology and all were reported negative for malaria.

198. In the border areas 907 children between the ages of two and ten years were investigated in eleven villages of whom 11 or 1.1% had palpable spleens. There were no smears positive for malaria in 1,005 blood smears taken from children under 10 years of age.

199. At present, another survey of the incidence of malarial infection in children under 10 years of age in the New Territories is in progress. Blood slides are being taken by the medical staff from all febrile children under 10 attending dispensaries in the New Territories and are being examined at the Government Institute of Pathology. An endeavour will then be made to trace and treat all positive cases thus revealed. The survey is expected to give valuable information as to the prevalence of malaria parasites in the blood of children of this age group and at the same time expose at least some of the cases in which the diagnosis which might have been missed without blood examination. At the same time, as more and more cases are being treated, the reservoir of infection, it is hoped, will diminish.

Laboratory

200. The Bureau laboratory continued to carry out the routine identification and dissection of mosquitoes and the staining and examination of blood smears collected during the surveys. Field tests were conducted of the efficacy of insecticides and the susceptibility of anophelines to insecticides. Information on tests of insecticide resistance in adult mosquitoes was forwarded to the World Health Organization.

201. The Social Hygiene Service provides free facilities for the diagnosis and treatment of venereal disease and leprosy. It is under the direction of the Senior Social Hygiene Specialist who is also the Government Specialist in Dermatology. The service operates from six centres in the urban districts and four part-time centres in the New Territories; it also maintains the Wan Chai Female Social Hygiene Hospital which contains 30 beds and a female out-patient clinic.

Venereal Diseases

202. During 1959, there was a rise in the number of cases of primary and secondary syphilis and of chancroid, the figure for gonorrhoea was virtually unchanged and that for lymphogranuloma venereum had decreased. This rise in the incidence of syphilis after a period of continuous decline corresponds to experience in many other cities, where the lowest incidence of syphilis was recorded five to six years after the introduction of general penicillin therapy; this introduction took place in Hong Kong 1952/53. The annual incidences and trends of these diseases are shown in Appendix 6.

203. No death was recorded from congenital syphilis during the year. In 1950 the number was 29, and it was in that year that free Kahn tests were made available to all pregnant women; in 1953 the Kahn test was replaced by the more sensitive V.D.R.L. and Table 15 shows both the increasing use made of this facility and the declining sero-positive rate amongst the population.

TABLE 15

ANTE-NATAL BLOOD TESTS ON PREGNANT WOMEN

	1953	*1954*	*1955*	*1956*	*1957*	*1958*	*1959*
No. of tests Clinics & Hospitals	N/A	20,748	23,716	26,803	27,330	28,026	46,932
% of Positive Rate ..	N/A	8.5	4.5	3.8	3.5	3.3	2.6
No. of tests Private Midwives	5,255	5,697	5,439	5,464	4,623	5,583	6,269
% of Positive Rate ..	7.2	6.0	4.2	3.4	2.7	3.2	2.3

204. There has been little change in the incidence of the late cardiovascular or neurological complications of syphilis.

205. Penicillin continues to be the first choice for the treatment of syphilis and gonorrhoea, but in the case of syphilis the slightest manifestation of a reaction to the drug is followed by a change to chloramphenicol. One death due to anaphylactic shock occurred in an

elderly female patient following a penicillin-in-oil injection, a preparation which has also caused a few severe reactions and which is now being replaced by an aqueous suspension.

206. Since the introduction of penicillin as the standard treatment of gonorrhoea, there has been a gradual rise in the numbers of penicillin-resistant gonoccocci. An interesting feature is that the present high figure in males of 23.7% resistant strains, which is obtained from laboratory results, is not found in clinical practice, there being only a 9% failure rate on the standard dosage of 400,000 units.

207. An investigation into the incidence of venereal disease in prostitutes attending the Social Hygiene clinics was made during the year. The following results are of interest.

TABLE 16

No. of Prostitutes attending for the first time	*No. V.D. found*	*Gonorrhoea*	*Syphilis*	
			Early latent	*late latent*
1,086	692	235	63	96
Percentage	63.8	21.6	5.8	8.8

208. An increase in the establishment of social hygiene visitors has resulted in a considerable expansion of follow-up activities. In each case defaulting from treatment, the patient is contacted by letter and one-quarter of those so contacted return to continue treatment. Visits are then made to the addresses of those who do not respond, when, more often than not, the address given has been a false one.

Leprosy

209. In 1954 the first clinic for treating leprosy on an out-patient basis was organized and by the end of the year 1959 ten sessions were being held weekly in eight out-patient centres, while four other sessions each week are being held at social hygiene centres in conjunction with other clinics; one session is held monthly at Tsuen Wan. Infectious cases numbering 138 were admitted to the Hei Ling Chau Leprosarium which is maintained by the Hong Kong Auxiliary of the Mission to Lepers, as were also some cases either in reaction or in need of surgical attention. A very close liaison with this institution, which is referred to in paragraph 330 of this report, is maintained by the Social Hygiene Service.

210. For routine treatment at the Leprosy Clinics, dapsone is still the drug of choice; the use of diaminodiphenyl sulphoxide which was introduced for selected cases in 1958 has been discontinued following

upon conclusions reached at the W.H.O. seminar held in Tokyo in November, 1958. A clinical trial of ditophal, was commenced in 1959; bi-weekly inunctions of the drug are administered, combined with dapsone either orally or intramuscularly. Preliminary results have been encouraging and ditophal will soon be made available for general use. Diphenyl thiourea is now produced in tablet form and is used in selected cases showing intolerance to dapsone.

211. The surgical rehabilitation of patients suffering from deformities and disfigurements has been still further developed in the Maxwell Memorial Hospital at the Hei Ling Chau Leprosarium. Orthopaedic treatment and plastic surgery is also provided in the Government hospitals where a limited number of beds is available for this purpose.

212. A review of 500 clinic patients was carried out by the University Orthopaedic Surgeon with a view to determining the number of cases of leprosy in need of surgical rehabilitation. The results are now being analysed and will be a valuable aid to the planning of the further development of the rehabilitation facilities.

213. Contact investigations are increasing steadily in numbers and child contacts are vaccinated with B.C.G. It is routine procedure for the home of each new patient to be visited within a month of the diagnosis being made and the contacts requested to attend for examination; they are thereafter examined once every six to twelve months. Defaulting patients and contacts who do not attend for examination are visited and 36% return for treatment and examination; unfortunately many contacts are unwilling to attend after a year as they neither see nor feel any indication of disease.

214. The work done by the leprosy Out-patient Service during the past five years is outlined in Table 17.

TABLE 17

LEPROSY OUT-PATIENT SERVICE

	1955	*1956*	*1957*	*1958*	*1959*
Admission to Clinics	762	751	981	976	767
Lepromatous	170	160	173	160	111
Tuberculoid	198	262	262	214	183
Mixed Type	0	1	1	5	3
Total Attendances	22,012	25,789	31,204	36,338	31,986
Number of Cases Admitted to Hei Ling Chau	98	165	132	111	138

Dermatology

215. Patients with skin diseases may attend any of the Social Hygiene Clinics and, in addition, there are six consulting sessions each week, three on Hong Kong Island and three in Kowloon, for cases referred for a specialist opinion. Female in-patients are treated in the Wan Chai Social Hygiene Hospital, while beds for male in-patients are available at the Lai Chi Kok Hospital. The rapid expansion of the Dermatological service can be seen from the fact that 777 new cases were seen during 1951, while in 1959 the figure was 11,046.

216. Contact dermatitis, boils, subcutaneous abscesses and eczema continue to be the main diseases encountered. Appendix 7 shows the classification and frequency of the dermatological cases seen. All cases of industrial dermatitis and certain cases of contact dermatitis were notified to the Industrial Health Officer.

217. The advent in May of greisofulvin, which has radically altered the treatment of all fungus infections, has been a notable therapeutic advance in this field. The present high cost however limits its general use.

DISTRICT MIDWIFERY SERVICES

218. The value of skilled attention during childbirth is widely appreciated in Hong Kong and over the past decade an average of 97.94% of the registered live births have been attended by qualified persons. Under the conditions of overcrowding existing, domiciliary midwifery is neither practicable as a general rule nor desirable, and domiciliary deliveries by Government and private midwives have fallen from 15% of the total births attended in 1950 to 6% during 1959. On the other hand the number of maternity beds in institutions throughout the Colony is approaching an adequate level. At the end of 1959 there were 1,498 maternity beds in public and private hospitals, clinics and maternity homes which, at a ratio of 1 bed for every 70 births, indicates that one service at least is not gravely short of beds.

219. In the past the Government policy has been to provide institutional care in the urban areas mainly in the maternity hospitals at the new Tsan Yuk and Kowloon General Hospitals. These institutions are however becoming more and more used for difficult or abnormal cases seen at the ante-natal clinics, while normal midwifery is dealt with at maternity homes attached to clinics or in private hospitals and maternity homes. New clinics to be built in the urban areas will now include a maternity home for normal cases where this service is warranted for

the district served. In this way pressure on maternity hospital beds will be eased and services for the uncomplicated case will be sited more conveniently and nearer home.

220. There are now fourteen Government maternity homes in clinics in the New Territories, two in the urban areas at the Eastern Maternity and Hung Hom clinics respectively. At 23 centres there are 53 domiciliary midwives available to undertake midwifery in nearby housing schemes and resettlement estates.

221. Table 18 sets out the categories of maternity services provided during the period 1950 to 1959 and the proportion of live births where a qualified person—doctor or midwife—was in attendance.

TABLE 18

LIVE BIRTHS 1950/59

according to type of Maternity Service

Type of Service		*1950*	*1955*	*1959*
HOSPITALS	Government	10,163 (16.77)	13,986 (15.45)	15,244 (14.58)
	Government-Assisted	16,333 (26.95)	28,272 (31.24)	34,646 (33.13)
	Private		2,654 (2.93)	3,152 (3.01)
Total Live Births in Hospitals		26,496 (43.72)	44,912 (49.62)	53,042 (50.72)
MATERNITY HOMES	Government	2,576 (4.25)	6,144 (6.79)	9,572 (9.15)
	Private	21,226 (35.03)	30,972 (34.22)	34,253 (32.75)
Total Live Births in Maternity Homes		23,802 (39.28)	37,116 (41.01)	43,825 (41.90)
DOMICILIARY	Government	2,558 (4.22)	3,614 (3.99)	3,081 (2.95)
	Private	6,949 (11.47)	1,807 (2.00)	3,073 (2.94)
Total Live Births by Domiciliary Services		9,507 (15.69)	5,421 (5.99)	6,154 (5.89)
TOTAL LIVE BIRTHS ATTENDED BY QUALIFIED PERSONS		59,805 (98.69)	87,449 (96.62)	103,021 (98.51)
TOTAL LIVE BIRTHS REGISTERED		60,600	90,511	104,579

Figures in brackets show the various numbers as a percentage of total live births registered.

222. The total number of cases attended by the Government District Midwifery Service during 1959 was 13,427 including still births and cases referred to hospitals. There were 168 still births recorded giving a still birth rate of 12.77 per 1,000 live births. The average annual case load for midwives was 263 compared to 280 during 1958 and the range varied from 52 to 795.

223. There is a continuing improvement in the frequency of ante-natal attendances and approximately 80% of women attended by Government or private midwives had at least one ante-natal examination; the average number of ante-natal attendance for each case has risen from 3.4 in 1958 to 3.5 in 1959; the percentage of cases delivered without any ante-natal care was 13.44% the relevant figure for the previous year being 16.94%.

224. The Supervisor of Midwives who is a Government Medical Officer is responsible for the regular inspection and supervision of registered maternity homes and of the work of domiciliary midwives. Since September 1959 she has been assisted in this aspect of her work by a Health Visitor. There were 891 visits of inspection to the 122 maternity homes in the register during 1959.

225. Important aspects of the work are the vaccination of new born babies with B.C.G. and primary vaccinations against Smallpox. Altogether 54.74% of babies delivered by Government and private midwives were given B.C.G.; 81.08% of this cover was given by the Government midwives and 44,025 primary vaccinations were performed.

226. Table 19 gives a comparative outline of the development of the service during the past 10 years.

TABLE 19

	1950	*1959*
Government Midwifery Service		
District Centres	16	23
Midwives employed	21	51
No. of Beds in Government Maternity Homes	45	151
Total cases attended	5,207	13,427
Maternity Home cases attended	2,633	10,321
Domiciliary cases attended	2,574	3,106
Private Practising Midwives		
No. of midwives in Active Practice	210	193
No. of maternity homes registered	114	122
No. of beds	379	524
No. of nursing homes registered	2	5
Total deliveries	28,512	37,605
Maternity home deliveries	21,489	34,496
Domiciliary deliveries	7,023	3,109
General		
No. of midwives on Register	861	1,565
No. of midwives passed the Midwives Board Examination	69	128
Maternal Mortality Rate	1.70	0.73

MATERNAL AND CHILD HEALTH

227. In this most important branch of the service the emphasis is on the prevention of disease and on health education. Once disease, exclusive of minor ailments, is detected the individual concerned is referred to the appropriate curative centre. All facilities are provided free and are available at seven full-time and twenty one part-time centres. No new centres were opened during the year but two of the existing centres were moved into more adequate premises. Additional

work undertaken was a regular visit by a Health Visitor to the North Point Relief Camp and, starting in January, 1960, a monthly visit by a M.C.H. team to the British 'Save the Children Fund Nursery' at the Wong Tai Sin Resettlement Estate.

228. Ante-natal sessions are held regularly in 28 centres and post-natal sessions in 16 centres. Total attendances at ante-natal sessions numbered 61,891 of which 17,418 were first visits; abnormal conditions were detected in 9.27% of mothers, oedema and hypertension being the commonest defects encountered. The routine chest X-ray, started in 1958, uncovered 2.1% of active tuberculosis in need of treatment. Pregnant women in need of dental care are referred to the Government Dental Clinic.

229. Post natal sessions were, on the whole, relatively poorly attended there being 3,530 first attendances out of a total of 4,870. Of those attending 22.15% were in need of some form of treatment, mainly for affections of the cervix, vagina and misplacement of the uterus, in that order. The records suggest that consciousness of some defect is the main cause for attendance and that those women who feel fit do not take advantage of a routine post-natal examination. This is undoubtedly related to economic and family pressures arising from employment or home commitments.

230. The infant health sessions for children in the 0-2 years age group and the toddler sessions are very popular. Here health education and immunization sessions are the main activities. There were 399,633 attendances at 13,497 health education sessions when simple talks, film and puppet shows, flannel graph illustrations and practical demonstrations of infant care and child hygiene are given. It is stimulating to see the interest and practical participation of the parents, not infrequently including fathers, on these occasions.

231. Immunization against diphtheria, typhoid and tetanus are given as a routine using A.P.T. combined antigen and triple vaccine according to circumstances. All total 20,166 infants received a full course of immunization during the year. Smallpox vaccination is given where necessary and all children not known to have had B.C.G., are tuberculin tested, those who are negative receiving B.C.G. Those who are tuberculin positive but without radiological signs of active disease are given prophylatic INAH for a period of one year.

232. Home visiting constitutes one of the major activities and this activity increased by 18% to a total of 46,248 visits.

233. The M.C.H. service participates in the undergraduate training of medical students, student health nurses and pupil midwives. In-service training courses are run by the Health Sisters for health visitors and health nurses; courses are maintained for midwives in private practice and classes held for social workers and high school girls. An elementary child care course run by the Social Welfare Department was given a series of lectures on child development and care during June and July, 1959 by M.C.H. staff.

234. Food supplements, mainly milk and baby foods, were distributed, according to need, to nursing mothers and infants. UNICEF skimmed milk powder was again generously provided free for all centres; half-cream and full-cream milk is supplied by Government; Heinz Baby Foods and Farley's Rusks were also donated for distribution from the centres.

235. It is of interest to record developments during the period 1950 to 1959. During that period, the in-service training of doctors and nurses was started in 1952, UNICEF aid in the form of equipment and skimmed milk powder began in 1953, and WHO assistance with staff was given during 1953 to 1955. The course of training for Health Visitors was inaugurated in 1954.

TABLE 20

M.C.H. DEVELOPMENTS 1950/59

		1950	*1959*
Centres			
Full-time		3	7
Subsidiary		4	17
Staff			
M.O. i/c M.C.H.		—	1
M.O. i/c Centres		3	9
Health Sisters		—	3
Health Visitors		2	34
Health Nurse		18	26
Attendances			
Ante-natal	New visits	—	17,418
	Revisits	—	44,473
	Total	3,019	61,891
Post-natal	New Visits	—	3,530
	Revisits	—	1,340
	Total	—	4,870
Infant Health	New Visits	9,551	28,227
	Revisits	105,889	299,671
	Total	115,440	327,898
Infant Mortality	*Rate*	99.6	48.3

236. During the year the Report of the Working Party, set up by Government in 1955 to examine the problem of providing a comprehensive school health service, was submitted to Government. Pending the submission and study of this report, particularly the degree of implementation the Colony can afford, the scope of the curative aspect of the school health service has been 'frozen' at the 1955 level.

237. Broadly speaking there are two aspects to the Service. The first is the control of environmental sanitation and communicable disease as a general public health measure applied to the Government and Government subsidized schools. This aspect of the work continues and, in addition, aid is given when requested for the control of communicable disease in any registered school. During the year, effort was concentrated on raising the level of immunity to diphtheria and typhoid and the results were more satisfactory than any previously recorded.

238. The problem of providing personal curative services however has been seriously aggravated by the very sharp increase in the size of the population of school age. These services were available on a voluntary fee paying basis to all pupils in Government schools from 1946 onwards; during 1951 and 1952 children in private schools and grant-in-aid schools respectively were included in the scheme. The facilities offered were routine medical examinations at fixed intervals, the treatment of ailments, the correction of physical defects and specialist attention, including dental and ophthalmic treatment with the provision of spectacles at a subsidized price. The tremendous demand for voluntary participation however suddenly swamped the facilities available and in 1955 the scheme therefore had to be frozen, if staff and funds were not to be diverted to the grave detriment of the essential general curative services provided by Government.

239. During 1959 the total participants in the scheme dropped to 26,342 and there has been little more than the maintenance of routine activities as far as the personal services are concerned.

240. One event of considerable importance was the pre-fluoridation dental survey carried out on 10,000 school children during February and March 1960. Dental examinations were carried out on these children in the age groups of 6 to 8 and 9 to 11 in 46 different schools. Further reference is made to the School Dental Service in paragraphs 355 to 359.

TABLE 21

STATISTICAL SUMMARY OF DENTAL TREATMENT CARRIED OUT DURING 1958 & 1959 IN THE SCHOOL DENTAL SERVICE

Type of Schools		*No. of School Child. dentally examined*	*No. of Sch. Child. found to require treatment*	*Visits*	*Extractions* Perm.	*Extractions* Decid.	*Other Surgical Operations*	*Fillings* Perm.	*Fillings* Decid.	*Conservative Dressings* Perm.	*Conservative Dressings* Decid.	*Prophylactic*	*No. of Sch. Child. rendered fit*
Government & Subsidized Schools	1958 ..	6,819	6,254	23,737	2,244	9,407	59	6,237	434	1,051	169	351	783
					Total = 11,651			Total = 6,671		Total = 1,220			
	1959 ..	4,886	3,594	24,100	1,958	8,596	10	11,089	907	1,531	235	1,068	1,788
					Total = 10,554			Total = 11,996		Total = 1,766			
Hennessy Road & Morrison Hill Primary Schools	1958 ..	3,175	2,082	3,588	108	1,778	Nil	1,610	955	151	237	523	592
					Total = 1,886			Total = 2,565		Total = 388			
	1959 ..	3,343	2,533	3,260	84	1,590	2	1,393	990	228	315	662	554
					Total = 1,674			Total = 2,383		Total = 543			
Private & Grant Schools	1958 ..	6,442	4,870	7,014	304	1,389	13	4,510	328	432	95	462	727
					Total = 1,691			Total = 4,838		Total = 527			
	1959 ..	4,851	3,318	7,810	534	1,076	6	4,233	351	387	44	901	1,425
					Total = 1,610			Total = 4,584		Total = 431			
Totals	1958 ..	16,436	13,206	34,339	2,656	12,574	72	12,357	1,717	1,634	501	1,336	2,102
					Total = 15,230			Total = 14,074		Total = 2,135			
	1959 ..	13,080	9,445	35,170	2,576	11,262	18	16,715	2,248	2,146	594	2,631	3,767
					Total = 13,838			Total = 18,963		Total = 2,730			

241. Sanitary inspections and health education activities were maintained at the same level as the previous year. Table 21 sets out a comparative statement of the work done in 1958 and 1959 by the Dental Service.

242. It is of interest to record the improvement in heights and weights amongst school children in 1955 compared to those at school in pre-war years. These figures which have only recently come to light are illustrated in graphic form in Figures 4 and 5.

FIGURE 4

Average Height of Hong Kong Schoolchildren 1940 & 1955

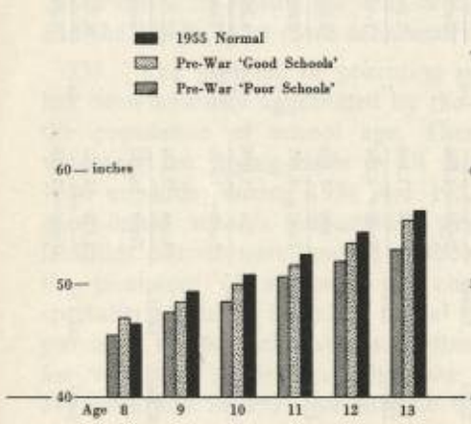
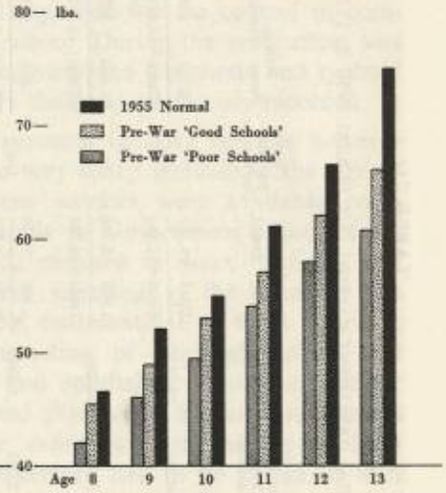


FIGURE 5

Average Weight of Hong Kong Schoolchildren 1940 & 1955



'Good Schools' refer to nutritional status amongst fee paying pupils from higher income groups.

'Poor Schools' refer to nutritional status amongst pupils from the lower income groups who paid either nominal or no fees.

INDUSTRIAL HEALTH

243. The rapid expansion of industry in Hong Kong during the last ten years has created a number of new health problems. The health of workers in factories and in other industrial undertakings is the statutory responsibility of the Commissioner of Labour. In October, 1954, a start was made towards the organization of an Industrial Health

Section by the secondment of a specially-trained Medical Officer to the Labour Department. Since then, the Industrial Health Section has expanded and its work now covers most aspects of the problem in the Colony. Investigations are made into the working environments of the trades known to be hazardous to health, first aid facilities in factories have been developed and the medical supervision of workers in certain dangerous trades such as those dealing with lead or radio-active powders has been instituted, while two Health Visitors carry out individual case work on injured persons claiming compensation under the Workmen's Compensation Ordinance.

244. During the year, one more occupational disease came to light, namely "brassfounder's ague"; the disease is caused by exposure to zinc fumes and its effect, though unpleasant, is only temporary.

245. With the co-operation of private practitioners and Government Medical Officers, cases of silicosis and industrial dermatitis are notified to the Industrial Health Section, while surveys of the environmental working conditions in quarries and stone grinding factories continue and further X-ray surveys have been carried out on quarry workers. A clinical survey has also been conducted on all bitumen workers in one of the Government quarries; no sign of skin reactions to bitumen was observed.

246. The serious effects of over-exposure to certain insecticides have caused world wide concern; consequently workers in the Pest Control Unit of the Urban Services Department and officers of the Department of Agriculture, Fisheries, and Forestry working in close contact with these insecticides were medically examined and blood cholinesterase estimations were carried out. No evidence of any toxic effect was recorded.

247. Lectures are given on Industrial Health to probationer Labour Inspectors, Health Visitors, and Medical Students of the Hong Kong University. The Industrial Health Officer also took part in a course of Industrial Relations organized by the Labour Department, giving lectures on certain physiological and psychological aspects of industrialization.

HEALTH EDUCATION

248. A better appreciation by the Colony's population of the basic principles of hygiene and preventive medicine continues to be the main

health objective. A very wide field is covered by many branches of the Medical & Health Department while certain other departments are also concerned with various aspects of the subject in their respective spheres. Pooling of experience and co-ordination of effort are obvious necessities and so an Inter-departmental Committee on Health Education has been created. This committee, to which reference has previously been made in connexion with the anti-diphtheria campaign, consists of representatives from the Departments of Education, Labour, Urban Services, Information Services, and Resettlement, and from the Secretariat for Chinese Affairs and the District Administration, New Territories, under the chairmanship of the Assistant Director of Health Services.

249. All available methods are used in the various health education programmes undertaken by the Department with varying success. Programmes based on methods designed for individual or group education have in general proved satisfactory, being used with success by the Maternal and Child Health Service, the Tuberculosis Service, the School Health Service and the Social Hygiene Service. On the other hand, mass campaigns directed towards widespread utilization of the facilities offered for prophylactic immunization against certain diseases are given a somewhat apathetic reception and have to be supplemented, as has been described in paragraph 96 on diphtheria, by various measures designed to make such prophylaxis available as close to the home as possible.

250. The co-operation of all voluntary bodies interested in health topics is actively encouraged, and during the year talks on such matters were given by members of the Department to Kaifong Associations, Welfare Societies, and similar organizations.

IV. THE WORK OF THE MEDICAL DIVISION

HOSPITALS

251. During the next five years the programme of hospital construction by Government, by the Tung Wah Hospitals Board of Directors, and by missionary bodies will result in seven new hospitals accommodating 3,872 beds. In addition, extensions to existing hospitals will add a further 318 beds to this total. The details in Table 22 give an indication of the phasing of this building programme which is estimated to cost $135,637,000 of which $124,537,000 will be from public funds.

TABLE 22

	1960	*1961*	*1962*	*1963*	*1964*
New construction					
Queen Elizabeth Hospital ...				1,320	
Kwong Wah Hospital			1,230		
Canossan Hospital	203				
*Castle Peak Hospital	1,000				
Maryknoll Hospital		50			
Lutheran Hospital	52				
South Lantao Hospital	17				
Extensions					
Kowloon Hospital	68				
Pok Oi Hospital	50				
†Queen Mary Hospital					200

* Mental Hospital.
† Approved in principle but construction not started.

252. To staff this number of beds over a period of five years is an undertaking of considerable magnitude and a programme for the training of doctors and nurses has been under way for some time. Trained nursing staff is likely to be the limiting factor and therefore priority in the construction of teaching and residential accommodation has been essential. A School of Nursing for the Tung Wah Group of Hospitals was opened in January 1960 and work on the Queen Elizabeth Hospital School of Nursing is well advanced. This latter School with residential accommodation for 562 sisters, staff nurses and student nurses will be opened in September 1960. At the Castle Peak Mental Hospital a course of training in Mental Nursing will start towards the end of 1960 but meantime there has been an intake of student mental nurses to the existing Victoria Mental Hospital, using the Queen Mary Hospital Preliminary Training School facilities for this part of the course.

253. At the Kowloon Hospital a new block containing two operating suites each with two theatres and two surgical wards of 34 beds each will be put into use in April, 1960. The pressure on the Kowloon Hospital surgical beds has been such that the theatre facilities were totally inadequate to deal with the emergency surgery let alone other essential operative work. Therefore this new surgical block, which can be used for thoracic surgery when Kowloon Hospital becomes a tuberculosis hospital, has been built to give some relief, pending the completion of the Queen Elizabeth Hospital.

254. The pressure on the Maternity Wards has also been acute and a temporary ward of 36 beds was completed and opened in September, 1959.

255. Phase II of the re-development of the Kwong Wah Hospital was almost completed by the end of the year. This includes the School of Nursing and the East wing which will accommodate 437 beds. The Canossa Hospital of 203 beds, which will replace the original hospital of this name destroyed during the Occupation, will be opened in April 1960. Work on the site of the Maryknoll Hospital at Wong Tai Sin is now under way.

256. In the New Territories the Lutheran Hospital of 52 beds at Fanling, built from funds donated by the Jockey Club, was opened by H.E. the Governor in March 1960. A cottage hospital of 17 beds at Cheung Sha, South Lantau is nearing completion and will serve the Shek Pik Water Development Scheme staff as well as the local villagers. At Pok Oi Hospital work on an extension of 50 beds is now well under way.

257. At the end of March 1960 there were 31 civil hospitals in the Colony of which 12 are wholly maintained by Government; 10 are managed by voluntary or missionary bodies which receive recurrent subventions from public funds. There are 9 private hospitals and 5 nursing homes. Details of the accommodation provided are at Appendix 5. An analysis of the work done at the Government and Government assisted hospitals is at Appendices 8 & 9.

Queen Mary Hospital

258. This, the largest of the Government Hospitals, is an acute hospital and also the main specialist centre for the Colony. It is the teaching hospital for the Medical Faculty of the University of Hong Kong and the main Government centre for the training of nurses.

259. Of the hospital's 601 beds, 234 are allocated to the University Departments of Medicine, Surgery, Obstetrics and Gynaecology. The Professor and the staff of the respective Departments provide the clinical care of the patients admitted to these wards. Within the Department of Surgery is an Orthopaedic and Traumatic Surgical Unit, headed by the Senior Lecturer in Orthopaedic Surgery. As from April 1st 1959 the University Department of Pathology assumed complete responsibility for all clinical pathology in the hospital, except for chemical analyses which are still performed by the Government Chemist and for forensic pathology. There is also a combined University and Government Paediatric Unit of 29 beds headed by the Senior Lecturer in Pediatrics of the University Department of Medicine. The remaining 336 beds are allocated to the Government clinical units in general surgery, medicine,

radiology, thoracic surgery, neurosurgery, tuberculosis and otorhinolaryngology, each unit being headed by a Government Specialist; in addition a limited number of beds are available for ophthalmology, dermatology and midwifery.

260. The administration of the hospital is the responsibility of the Medical Superintendent, who is a Principal Medical Officer of the Department, and who is assisted by a lay Hospital Secretary. Radiological services, including radio-therapy, anaesthetic services, all nursing care, medical social work, physiotherapy, occupational therapy, pharmacy and hospital supplies are maintained by Government.

261. The Government Medical Unit conducts three specialist outpatient sessions each week at the Violet Peel Polyclinic and weekly specialist clinics at both Shau Kei Wan Dispensary and St. John Hospital on the island of Cheung Chau. Research into hypertension and renal disease, clinical trials of hypotensive drugs and studies of new investigatory techniques have been continued throughout the year. The treatment of the withdrawal symptoms in heroin addiction by using meprobamate only and electromyography in muscular and neuromuscular diseases have been other clinical research activities.

262. In the field of thoracic surgery, the number of cases of bronchogenic carcinoma seen in the Government Thoracic Surgical Unit is increasing; in most of the patients the disease is far advanced and in only 18% was a successful resection possible. Cardiac surgery is at present limited to closed heart operations.

263. The resignation of the Neurosurgical Specialist in September, 1959, has restricted the scope of the Government Neurosurgical Unit temporarily to the treatment of traumatic neurosurgical cases only.

264. The staff of the Pediatric Unit conduct regular outpatient clinics at the Sai Ying Pun Outpatients Department and, in addition, hold three clinic sessions a week at Queen Mary Hospital, one for nephritic cases, one for haematological and cardiac cases and the third for the follow-up of cases presenting unusual clinical features.

265. The scope of the Government General Surgical Unit remains limited by the great pressure on beds and emergency surgery has perforce to take priority. Surgical clinics are held regularly each week at the Violet Peel Polyclinic by the Specialist and his staff but, owing to pressure of emergency work, waiting lists for elective surgery are increasing.

266. There is no outpatient department at the Queen Mary Hospital but the Casualty Department, which was opened late in 1956, is the only public casualty centre on Hong Kong Island with the requisite emergency specialist cover. The Casualty Department thus receives most of the traumatic, emergency and forensic cases arising in a densely populated area of over one million inhabitants.

267. Table 23 gives some indication of the increasing pressure on the facilities at the Queen Mary Hospital over the past ten years, the bed state during that time increasing from 576 beds in 1950 to 601 beds in 1959.

TABLE 23

	1950	*1955*	*1958*	*1959*
Inpatients treated	9,819	12,516	14,439	14,620
Operations performed ...	4,663	6,895	7,230	7,212
First attendances at Casualty	(No record)		26,828	29,838

Kowloon Hospital

268. This is the main acute hospital for Kowloon and the New Territories and the Casualty Centre for that area. At the end of March 1960 there were 407 beds providing the general casualty and emergency cover for a population of approximately 1,700,000 persons. The hospital is staffed and maintained by Government and there are general medical, including paediatrics, general surgical, orthopaedic and traumatic, midwifery and gynaecology and anaesthetic units all headed by Specialists. The Hospital is also a training school for nurses and midwives.

269. The appointment of an Orthopaedic Specialist early in 1959 made it possible to establish a much needed Orthopaedic Traumatic Unit to deal with the greatly increased number of accidents brought to the Casualty Department. All fractures and injuries needing orthopaedic care, either on an in-patient or out-patient basis, are cared for by this Unit. The general surgical wards have at the same time been able to concentrate on the treatment of acute head injuries and of serious injuries to the soft tissues such as burns and ruptured viscera.

270. During the year a special investigation into the cases of trauma admitted to the wards revealed that the majority of accidents are caused by objects falling from a height—an interesting and not unexpected finding in a densely populated urban area becoming highly industrialized and with many multi-storey buildings. During 1958 and 1959 respectively 1,025 and 1,538 persons were injured in this way. Traffic accidents were next in frequency accounting for 964 casualties and 62 deaths during

1959. Then burns and scalds accounted for 392 admissions, the majority of whom were children residing in squatter settlements.

271. During the year the Orthopaedic traumatic unit admitted 1,483 patients and carried out 1,182 operations of which 1,035 were major operations.

272. An indication of the pressure on the Kowloon Hospital is given in an analysis below of the work carried out during the past 10 years. In 1950 there were 179 beds in the hospital; to-day there are 407. There were 4,559 general in-patients treated during 1950 and 13,242 during 1959. During that time the overall mortality rate has fallen from 8.7% in 1950 to 6.4% in 1959. This should be viewed in the light of the acute nature of the work undertaken and the very many seriously ill patients admitted. Table 24 indicates on a percentage basis the increase in the work carried out during the 10 year period.

TABLE 24

KOWLOON HOSPITAL 1950/59

	1950	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*	*1957*	*1958*	*1959*
Maternity Cases	100	147	172	154	167	172	169	171	207	218
General In-patients (excluding maternity)	100	112	125	124	141	145	154	170	232	288
Out-patients Attendances (including casualty)	100	251	284	265	222	224	213	261	268	256
Operations (excluding minor)	100	133	149	159	169	184	204	216	252	291

The returns for 1950 are taken as 100%.

273. A number of specialist sessions are held by the staff of Kowloon Hospital at the Out-patient department and at certain outlying clinics. Owing to the limitation of beds the medical and paediatric unit particularly has had to expand its activities mainly in the realm of out-patient care. During the year specialist clinic sessions were started at Shek Kip Mei, Tsuen Wan, Tai Po and Tai O.

274. The large general out-patient department adjacent to the Kowloon Hospital which includes the hospital casualty department dealt with 532,492 out-patient attendances during the year. The Casualty Department attended to an average of 196 emergency and accident cases every 24 hours throughout the year.

Lai Chi Kok Hospital

275. This hospital, built on two levels, is accommodated in buildings which were formerly a prison camp and it performs three functions; it accommodates all cases of infectious disease requiring admission to

hospital which occur on the mainland part of the Colony; it serves as a convalescent unit for Queen Mary and Kowloon Hospitals; and it accommodates a number of tuberculosis patients. The expansion of Kowloon, the increasing pressure on the two main acute hospitals, and the re-arrangement of the facilities for the hospital treatment of tuberculosis can be seen from the changing number of beds allocated to each of these units shown in Table 25.

TABLE 25

BED ALLOCATIONS IN LAI CHI KOK HOSPITAL
1950/59

	1950	*1955*	*1959*
Infectious Diseases	88	94	120
Convalescent Cases	180	180	267
Tuberculosis	202	208	88
Total	470	482	475

276. The unusually heavy incidence of diphtheria in the latter part of the year threw a great strain on the infectious diseases unit, and in December 144 beds were re-allocated to deal with the number of cases of diphtheria requiring admission; by the end of March, 1960, 57 of these beds had been returned to the tuberculosis unit.

277. The case mortality rate of 6.6% for diphtheria was the lowest ever recorded, the cause of death being either overwhelming toxaemia or 'late' bronchopneumonia not responding to the 'various antibiotics administered. A few reactions to antitoxin occurred and these responded well to adrenaline and antihistamine drugs. Over 90% of the children admitted with diphtheria had received no immunization, and of the remainder most had only received one injection of toxoid.

278. During the summer months there was, as is usual, a marked increase in the number of typhoid cases admitted. Only one death occurred, underlining the dramatic change which has taken place during the last ten years in the prognosis of this disease resulting from the introduction of chloramphenicol for routine treatment.

279. Bronchopneumonia accounted for a case mortality rate of 34.3% amongst children admitted with measles; many such patients are in extremis when they arrive and, while some respond well to antibiotics, others are too ill for treatment to have any effect. Tetanus showed a 48.8% case mortality; this high figure was due to the high proportion of tetanus neonatorum. Other infectious diseases seen were

tuberculosis meningitis, amoebic and bacillary dysenteries, encephalitis, and poliomyelitis.

280. For the convalescent and tuberculosis patients both physiotherapy and occupational therapy are provided on a full-time basis, while the Hong Kong Branch of the British Red Cross maintains a school for long-term child patients.

281. Owing to the increasing pressure on beds in Kowloon Hospital, the convalescent unit is having to admit more and more acute conditions, such as threatened abortions and appendicular abscesses not in need of immediate surgical treatment and the term 'convalescent unit' is now to a great extent a misnomer.

Tsan Yuk Maternity Hospital

282. This is the main obstetric hospital in the Colony. Built and equipped from funds donated by the Hong Kong Jockey Club, this modern institution of 200 beds was opened in 1955, replacing the Old Tsan Yuk Hospital of 85 beds. It is maintained by Government, which also provides the Medical Superintendent, resident house officers and nursing and administrative staff. Clinical work in the wards is the responsibility of the Professor of Obstetrics and Gynaecology in the University of Hong Kong assisted by members of the University Unit and some Government Medical Officers. All tuition of medical students in obstetrics is conducted here, and Tsan Yuk is also the Colony's main training centre for midwives undertaking the two year course conducted in Cantonese; refresher courses are also held from time to time for the benefit of practising midwives.

283. Ante-natal, post-natal and infant welfare clinics are held regularly. In addition, there is a special clinic for medical conditions complicating pregnancy, a social hygiene clinic for venereal diseases, and a Family Planning Clinic staffed and run by the Family Planning Association of Hong Kong. All three of these clinics are held once or twice each week.

284. Owing to the demand for institutional midwifery, it has become necessary to limit routine admissions to cases registered in the ante-natal clinics and these formed 95.5% of the 8,196 admissions during 1959. These in turn were restricted as far as possible to primipara, to women with a previous history of abnormal pregnancy or labour, to

'grand' multigravidae or to referred cases requiring specialist care. Cases not falling into these categories were referred to maternity homes or hospitals dealing with normal cases. The 'non-booked' cases admitted were suffering from complications of pregnancy or of labour and were referred by practising midwives, private practitioners, the Tung Wah group of hospitals and the Government midwifery service.

285. With the great rise in the number of births in the Colony during the last ten years and the greatly improved facilities in this specialized hospital, the proportion of operative deliveries has shown a marked increase. As can be seen from Table 26 this has resulted in a lowering of the still-birth and neo-natal mortality rates; the rise in the maternal mortality rate during 1959 does not reflect increased post-operative risks as five of the six deaths recorded were due to medical conditions complicating pregnancy.

TABLE 26

WORK OF THE TSAN YUK HOSPITAL 1950/59

	1950	*1959*
Hospital beds	85	200
Total number of admissions	5,380	8,196
Total number of deliveries	5,085	7,440
Still-birth rate (per 1,000 total births)	23.20	13.97
Neo-natal mortality rate (per 1,000 live births)	17.31	14.31
Maternal mortality rate (per 1,000 total births)	0.39	0.80
Percentage operative deliveries	2.73	14.12

286. In addition to a hospital laboratory for routine clinical pathology investigations, there is a research laboratory which is staffed by members of the University of Hong Kong. Projects undertaken by the latter during the year were studies of blood groups in multiple pregnancies, serological factors in cases of still-birth and hydrops foetalis, haematological values in primipara and multipara, and serum protein changes in pregnancy.

Mental Hospital

287. During February 1960 a further block containing 120 beds was completed at the new Castle Peak Hospital with the result that, at the end of March 1960, 230 patients were accommodated at Castle Peak. This new hospital of 1,000 beds is expected to be ready by the end of 1960.

288. In the meantime the Victoria Mental Hospital continued to be housed in two old and unsuitable buildings situated in a congested

part of the City. Originally designed to accommodate 140 patients, this institution housed during 1959 a daily average of 428.7 patients, as opposed to 156.4 in 1950. There was also an average of 266.3 patients a day on parole. Due to this great pressure on space, arrangements had to be made during the year to increase the accommodation. These arrangements consisted of temporary extensions to the Male Block, the erection of temporary buildings in the grounds, the enclosure of verandahs and an enlargement of the hospital kitchen.

289. Despite such unfavourable conditions the most modern methods of diagnosis and treatment are available to both in-patients and out-patients. During 1959, a standard electroencephalograph machine was installed, regular anaesthetic assistance became available for the introduction of scoline-pentothal E.C.T., and weekly group psychotherapy sessions were commenced. All orthodox physical methods of treatment were employed including leucotomy. Later in the year difficulty was encountered due to the loss of the services of a neuro-surgeon, a loss which also affected the diagnosis of obscure organic cases.

290. Chlorpromazine is still used to a great extent but several other tranquillizers have been used on a trial basis. Towards the end of the year a supply of the monoamine-oxidase inhibitors became available and were employed in the treatment of depressive states. Owing to pressure on facilities for treatment, no controlled therapeutic trials of the various drugs in use were possible.

291. Important expansion in the work of the Mental Health Service took place during the year. This was reflected not only in the recruitment of younger doctors interested in psychiatry, but also in the intensification of both undergraduate and post-graduate training, including monthly clinical meetings which attracted interest from members of the profession outside the Department. From the legal aspect, important innovations were the posting of a psychiatrist to the Prisons Department, assistance in the detailed planning of a 'Prisons Department Mental Hospital' and advice on the preparation of a draft Mental Health Ordinance.

292. The impending transfer to Castle Peak Hospital will end an era. It seems appropriate, therefore, to review the advances made over the past decade. The increase in in-patient treatment has already received comment, but the added burden imposed by rapid expansion

of outpatient treatment can be visualized from the following figures of out-patient attendances:

	1950	*1955*	*1959*
New cases	306	583	752
Old cases		1,081	5,205
Attendances of discharged in-patients		723	449
Total	306	2,387	6,406

293. It is, however, in the administrative aspects of psychiatric treatment that the main advances have been made. Voluntary treatment became legal during 1950, and the number of patients taking advantage of this has risen from 8 in that year to 1,343 during 1959. Treatment on an informal day basis was introduced in 1953, but the number of patients so treated has remained small due to limited accommodation and to the inability of many cases to make the daily journey to and from the hospital. Since 1956 a liberal policy with regard to patients' visitors has been in force; visiting times have been more flexible; children have been allowed to enter wards; and, on occasions, relatives or friends have been able to stay overnight with patients. Finally, during 1959, certain of the temporary wards have been run as 'open wards', while the chronic wards in Castle Peak Hospital were also conducted in a liberal fashion with patients taking part in field trips and visits of interest. Unfortunately, a true trial of the 'open ward' system cannot be attempted due to the presence of a certain number of criminal lunatics who cannot be accommodated elsewhere until a Prison Mental Hospital is available.

Sai Ying Pun Hospital

294. This hospital on Hong Kong Island, with a nominal capacity of 88 beds, is used entirely for the treatment of cases of infectious diseases. There is a wide seasonal fluctuation in the demands on the accommodation and as many as 163 in-patients may be in hospital at peak periods.

295. During the year there were 563 admissions for diphtheria with 28 deaths, 179 cases of typhoid with 1 death and 167 cases of bacillary dysentry. Cases of infective hepatitis, scarlet fever and streptococcal infections of the throat are becoming more and more common, as is rheumatic fever. Altogether there were 1,548 admissions during 1959 compared to 1,617 the previous year.

296. The level of morbidity of infectious diseases treated in Sai Ying Pun has not altered materially during the past decade. Mortality rates, however, have declined markedly.

TABLE 27

CASE MORTALITY RATES 1950/59

	1950	*1959*
Diphtheria	25.1%	4.9%
Typhoid Fever	10.0%	0.5%
Tetanus neonatorum	100.0%	52.9%
Whooping cough	12.1%	Nil
Tuberculosis meningitis	92.0%	44.0%

(Mortality expressed in percentage of cases admitted).

These improvements are attributed to the use of modern chemotherapeutic and antibiotic agents in addition to the more widespread use of immunizing agents, even though the latter have not been given according to the recommended schedules, due to lack of parental co-operation. On the other hand there has been a considerable emergence of strains of pathogens resistant to the suphonamides and the commoner antibiotics. For example there is an increasing number of cases of staphylococcal gastro-enteritis. In addition to numerous cases of sulphonamide resistant bacillary dysentry, there were thirty cases of chloramphenicol resistance and three cases of terramycin resistance. Nevertheless the reduction in mortality rates in the major infectious diseases has been encouraging.

297. The Medical Officer in charge of the Infectious Diseases Hospital assists with the training of medical students and is part-time lecturer in infectious diseases at the University. He is also responsible for the general supervision of the out-patient work at the associated Sai Ying Pun Out-Patients Department, now temporarily accommodated at the old Tsan Yuk Hospital. This is one of the busiest institutions in the Colony and there were 241,091 out-patient attendances in 1959 compared to 232,760 in 1958. This is the out-patient teaching centre for medical students and the University clinical units in the Queen Mary Hospital hold regular out-patient sessions here.

298. The new Sai Ying Pun Polyclinic built with funds donated by the Jockey Club is now nearing completion and will be opened in July 1960. This nine-storey building will give enhanced and up-to-date facilities serving the very densely populated western district of the Island and will include a major full-time chest clinic.

St. John Hospital

299. This hospital, situated on the island of Cheung Chau, is the property of the St. John Ambulance Association and Brigade, but since the war, by agreement, it has been staffed and maintained by Government. It not only offers in-patient and out-patient facilities to Cheung Chau's population but also serves as a base hospital for the floating clinic covering the Colony's south western waters and a convenient centre for various specialist clinics—medical, tuberculosis, ophthalmic, social hygiene, maternal and child health and dental. Patients requiring major surgical procedures or other specialist in-patient treatment are transferred to the appropriate hospitals on Hong Kong Island. In addition to the general facilities, there is a 42-bed unit for the accommodation of patients convalescing from pulmonary tuberculosis.

300. There were 2,085 in-patients treated during the year of whom 87 were transferred to hospitals in Hong Kong. There were 59,628 out-patient first attendances. The comparative figures for 1958 inpatients and outpatients were 2,212 and 56,870 respectively.

Prison Hospitals

301. Hospitals are maintained at the Stanley Male Prison, the Victoria Remand Prison, the Lai Chi Kok Female Prison, and the Tai Lam Centre for the treatment and rehabilitation of drug addicts.

302. At Stanley Prison there is a hospital of 82 beds for the accommodation of prisoners who require treatment for conditions that do not warrant transfer to another hospital. The bulk of the cases treated are suffering from the effects of drug addiction, from various minor psychiatric disturbances and from tuberculosis.

303. An important step in the development of psychiatric services was the secondment to the Prisons Department of a Psychiatrist, in November, 1959. This Psychiatrist attends to remand prisoners awaiting trial in the Victoria Remand Prison and pays regular visits to the Stanley Prison and the various Training Centres to advise on the numerous psychiatric and personality problems encountered amongst prisoners, particularly in relation to drug addiction.

304. At the Remand Prison in Victoria there is a small ward of eight beds for the treatment of acute illness. The duration of stay in the Remand Prison is necessarily short but there are a number of cases of acute illness, particularly amongst drug addicts suffering from withdrawal symptoms, which have to be treated in this ward.

305. The effects of drug addiction amongst convicted prisoners is a major problem in H.M. Prisons and medical treatment during the period of withdrawal is followed by rehabilitation through routine occupation in prison workshops. The specialized prison for the treatment and rehabilitation of convicted male drug addicts maintained at Tai Lam Chung has given encouraging immediate results and it is striking to see the physical and psychological improvement which takes place within a relatively short period of weeks. However it is too early yet to gain any assessment of the relapse rate after discharge.

306. The female prison at Lai Chi Kok maintains a small hospital of ten beds under the supervision of the Medical Officer in charge of the Lai Chi Kok Hospital. Any cases of major illness are transferred to the custodial ward in the Kowloon Hospital.

Wan Chai Social Hygiene Hospital

307. This small 30-bed hospital was originally intended for the in-patient treatment of venereal disease amongst women and children. However, modern methods of treatment have reduced the importance of this aspect of the work and the tendency is for this institution to become a centre for the treatment of patients with acute skin disease who are now being admitted more and more frequently.

308. There is a busy out-patient department for the treatment of women suffering from venereal disease and a large number of examinations of known contacts are carried out every year.

GOVERNMENT ASSISTED HOSPITALS

The Alice Ho Miu Ling Nethersole Hospital

309. This hospital, operated by the London Missionary Society, offers general medical, surgical and maternity care. There are 287 beds including a modern maternity section of 80 beds. There is also a large out-patient department. The hospital caters for all classes of patients but the major part of the work is amongst the poor. This valuable contribution towards the Colony's medical services is supported by a substantial annual subvention from Government funds. In spite of staffing difficulties encountered during the year, 6,941 in-patients were treated and there were 63,785 out-patient attendances.

Tung Wah Group of Hospitals

310. Established 90 years ago, the Tung Wah is a charitable organization providing medical care, primary school education and

various welfare services for the poor. It is managed by a Board of Directors who are elected annually and who raise large sums of money for charitable purposes. A considerable proportion of the money raised is devoted to the maintenance of the three hospitals controlled by the group, namely the Tung Wah and the Tung Wah Eastern Hospitals situated on Hong Kong Island, and the Kwong Wah Hospital in Kowloon. The remainder of the expenses incurred by these hospitals are met by a large annual subvention from Government.

311. The work of the hospitals is subject to the general direction of the Tung Wah Hospitals' Medical Committee, which under the Chairmanship of the Director of Medical and Health Services, consists of the Chairman and Principal Directors of the Tung Wah, two members of the Tung Wah Hospital Advisory Board, the Medical Superintendents of the three Hospitals and the Deputy Financial Secretary (Finance). The Medical Superintendents are Government Medical Officers on secondment.

312. All three hospitals maintain large and very busy out-patient departments, but do not normally accept casualties. The general medical and surgical wards provide, in addition to care and treatment of many acute cases, much needed accommodation for those suffering from chronic illnesses requiring prolonged hospitalization. Two infirmaries are maintained for the care of persons suffering from incurable diseases.

313. Consultant services are provided, mainly by specialists in private practice whose services are given voluntarily; certain Government Specialists also act as consultants to hospitals within the Tung Wah Group.

314. The important part that the Tung Wah Hospitals play in the medical services of the Colony can be seen from the following table:

TABLE 28

WORK OF THE TUNG WAH GROUP OF HOSPITALS, 1959

	Beds	*Total in-patients admitted*	*Total out-patient attendances*
Kwong Wah	659	42,380	285,773
Tung Wah	652	13,139	113,535
Tung Wah Eastern	336	8,245	170,527
Total	1,647	63,764	569,835

315. The maternity wards of these three hospitals which give a free service are the busiest in the Colony. Approximately one third of all births registered take place in these wards. At the Kwong Wah Hospital 22,698 births took place during 1959, an average of 58 births each day.

316. At the end of the year, Phase II of the Kwong Wah Hospital Re-development Scheme was nearing completion. The Nurses' Training School was opened by the Director of Medical and Health Services in January, 1960, while the opening ceremony for the Nurses' Quarters was performed at the end of March, 1960, by the Secretary for Chinese Affairs.

Pok Oi Hospital

317. This hospital, situated near Yuen Long in the New Territories, is a charitable institution of 50 beds. It is maintained by a Board of Directors and is largely supported by charitable donations augmented by an annual Government subvention. Originally, hospital treatment was mainly by traditional Chinese herbal medicines, but these have now been largely replaced by Western medicines.

318. An extension to the hospital, expected to be completed by July, 1960, will increase the number of beds to 100. The cost of this extension has been met partly by subscriptions from the public and the Directors and partly by a capital grant from Government.

319. During 1959, a number of administrative changes were made. The general administration of the hospital is now under an Executive Committee comprising 6 representatives of the Board of Directors and 6 representatives of Government. At the same time, a Government Medical Officer has been seconded to the hospital to act as Medical Superintendent; this officer is responsible for the day-to-day running of the hospital and also acts as a liaison between unofficial and official members of the Executive Committee.

Hei Ling Chau Leprosarium.

320. Maintained by the Mission to Lepers Hong Kong Auxiliary with the aid of a substantial recurrent subvention from Government, the Leprosarium is situated on the island of Hei Ling Chau which lies off the east coast of Lantau Island. It provides hostel accommodation for up to 540 leprosy patients and there are 50 beds for medical and surgical care in the Maxwell Memorial Hospitals; there are also 15 beds for leprosy patients with tuberculosis.

321. The average number of patients in residence throughout the year was 531. There were 138 admissions, and 119 patients discharged of whom 87 were in possession of 'negative' certificates; there were 2 deaths.

322. All patients receive regular and controlled treatment, the majority receiving D.D.S. in its various forms. An increasing number are being given thiambutosine by mouth and a small group was put on ditophal by inunction.

323. Much work has been done on the prevention of damage to anaesthetic hands and feet and the importance of this aspect is continually emphasized to the patients so afflicted. In the surgical wards reconstructive surgery was carried out on a number of patients and 189 operations were performed for this purpose.

324. The detailed radiological study of the hands and feet of all patients was continued and a flouroscopy survey was done of all patients and staff. The laboratory undertakes regular skin smears and other routine investigations while a start was made on the taking, preparation and examination of skin biopsies from all patients.

325. All patients on the Island are expected to work in accordance with physical ability and previous occupation. Even the severely disabled and bedridden are encouraged to do basket work and embroidery. Patient-farmers supplied most of the vegetables consumed and pigs, rabbits and poultry are raised. Cattle breeding was discontinued on the advice of the Government Veterinary Department. Patients also carried out routine maintenance work and hospital and domestic duties.

326. A new activity was the planting, by the Forestry Department, of 10 acres of pine seedlings as a prelude to future afforestation to be carried out by patients. A start was made on the raising of seedlings on the Island and a small area was planted by the patients.

327. There is a primary school for child patients, the staff of which hold evening classes for adults. An average of 27 children attended the school and 137 adults attended evening classes.

328. Trade training is carried out in workshops and the scope of training will be extended to tailoring and embroidery when a new workshop, now under construction, is ready. The new building is being built from funds donated by the Marianne Reichl Aid to Lepers Group and it will also contain a clothing store and laundry.

329. Church activities and religious services for both Protestants and Catholics were continued and a new Church is being planned. Social

activities continued as in a normal community with games, a Drama group, a fortnightly film show and Boy Scouts and Girl Guides troops.

330. There is a close liaison with the Government Social Hygiene Service which undertakes the out-patient treatment of leprosy in Hong Kong, Kowloon and the New Territories. The majority of admissions to Hei Ling Chau are arranged in co-operation with this Service which also carried out the medical follow-up of discharged patients. There is also a close liaison between the Island Welfare Officer and the Government Social Welfare and Resettlement Departments.

Tuberculosis Hospitals

331. Reference has already been made in paragraphs 151 to 158 and 160 to 162 of the work carried out by the Grantham Hospital, the Ruttonjee Sanatorium, the Haven of Hope Sanatorium and the Sandy Bay Convalescent Home.

OUT-PATIENT SERVICES

332. In addition to the large increase in the size of the population during the past ten years there has been a considerable expansion in the demand for treatment by Western medicines. This has necessitated a rapid expansion of out-patient facilities at hospitals, clinics, health centres and public dispensaries throughout the Colony. The impact on the Government services alone is shown in Table 29 below and this does not take into account the work done by Government-assisted institutions or the service provided from numerous charity or low cost clinics maintained by a variety of welfare and other organizations.

TABLE 29

GOVERNMENT OUT-PATIENT SERVICES 1950/59

	1950	*1955*	*1959*
Number of out-patient centres (including Hospital O.P. Departments)	36	46	70
New out-patient attendances	852,328	1,604,856	1,732,832
Total out-patient attendances	1,538,268	2,869,045	5,107,644

333. During the year regular specialist out-patient sessions were maintained at a number of centres by the tuberculosis, social hygiene, surgical, ophthalmic, maternal and child health, and ear, nose and throat services. In addition, consultant sessions in general medicine have been started at seven centres in the urban and rural areas.

334. Evening sessions are held at seven of the larger clinics in the more densely populated areas. Lasting from 6 p.m. until midnight, they have proved to be very popular, providing as they do a service to the public outside the normal working hours.

335. During June 1959 it was possible to start clinic sessions on Sundays and public holidays at four centres in the urban area, two on each side of the harbour. These are designed to cater for patients requiring emergency or urgent attention and have been made possible by a re-arrangement of working hours during the week which will release staff for these emergency sessions. There has been an average attendance of 243 persons during each of these holiday sessions since this additional service was inaugurated.

336. In the rural mainland and island areas of the New Territories there are fourteen centres at which out-patient treatment is given; at seven of these one or more doctors are stationed permanently. There are two travelling dispensaries operating from Tai Po and Yuen Long respectively which visit a number of subsidiary centres on the mainland. The remoter villages on the Islands and certain points on the mainland are now served by two launches the M.Vs. *'Chee Hong'* and *'Chee Wan'*. These are fitted out as 'floating clinics' and have a doctor, nurse and inoculator on the staff of each vessel. The M.V. *'Chee Wan'*, which is a twin screw launch, was donated by The Jockey Club and put into commission in October, 1959. Thus both the eastern and western seaboards of the New Territories now have a 'floating clinic' service.

337. During June 1959 a medical officer was posted to the Shek Pik Reservoir Scheme on Lantau Island where a First Aid post is maintained and a general out-patient service will be available shortly at the South Lantau Hospital. Regular daily visits are paid to the maternity home at Mui Wo in Silvermine Bay when there are also out-patient facilities.

338. At appendices 10, 11, 12 and 13 are details of the work done during 1959 at the out-patient departments of Government and Government-assisted institutions throughout Hong Kong.

SPECIALIST SERVICES

339. There are Government Specialist Clinical Units of medicine, surgery, obstetrics & gynaecology, anaesthesiology, dentistry, neurosurgery, ophthalmology, orthopaedic surgery, otorhino laryngology, pathology, psychiatry, radiotherapy, radiodiagnosis, social hygiene,

thoracic surgery and tuberculosis. In addition the Professors and certain Senior Lecturers of the University Faculty of Medicine act as consultants in medicine, surgery, obstetrics and gynaecology, orthopaedics, pathology and pediatrics. Certain of the Government Specialists act as Honorary Consultants to the Tung Wah Group of Hospitals in surgery, radiology, obstetrics and otorhinolaryngology. Part-time specialist services are also given to the Grantham Hospital by the Senior Tuberculosis Specialist, the Thoracic Surgeon and the Orthopaedic Surgeon.

RADIOLOGY

340. The Radiological Service, under the direction of the Senior Radiological Specialist, serves all Government medical and health institutions, reports on X-ray films taken at the hospitals of the Tung Wah Group and offers consultation facilities in all aspects of radiology for other institutions and, when requested, for private medical practitioners; it is also responsible for the teaching of medical radiology at the Hong Kong University. The service consists of 3 main branches, namely Radiodiagnosis, Radiotherapy and Medical Physics; the first two are headed by specialists and the third by an experienced Senior Physicist. Other activities include training for the Diploma of Medicinal Radiology (Diagnostic) & (Therapy) and the Membership of the Society of Radiographers. There is also a Clinical Photography unit.

Radio-diagnosis

341. This branch, which has its headquarters at the Queen Mary Hospital, provides a diagnostic service in nine institutions and clinics in Hong Kong and Kowloon; in addition it now operates two Mobile Mass Radiography Units, the second of which was put into service in August, 1959. All aspects of radiodiagnostic work required by the Department are covered, including the radiological work for the tuberculosis service. In addition it undertakes the routine X-ray work for the Medical Examination Board and the annual X-ray survey of all Government employees.

342. During the year 339,269 X-ray examinations were made on 190,719 patients. The total of examinations increased by 49,944 over the 1958 figure. The three image intensifiers installed during the previous year have been of great benefit in cutting down exposure to radiation without any loss in diagnostic detail.

Radiotherapy

343. This section is at present entirely based in the Queen Mary Hospital but serves patients from throughout the Colony. Whereas 10 years ago it had only one deep X-ray machine, five obsolete radium needles, and a small amount of radiocobalt, there are now two deep X-ray machines, a 60-curie telecobalt service, a contact X-ray therapy machine, a large stock of radium needles and tubes, radio cobalt tubes, two implantation guns for radiogold grain implantation and other facilities for the use of radio-isotopes in the diagnosis and treatment of disease.

344. During 1950, only 31 malignant and 48 benign conditions were treated. In 1959 treatment was given to 1,113 patients of whom 901 were new cases; 893 cases of cancer were treated of whom 684 were new cases. There were 348 cases of nasopharyngeal carcinoma, 152 cases of cancer of the cervix and 134 cases of cancer of the breast. There were 220 benign conditions treated of which 180 were skin conditions. Radio-iodine tracer studies were carried out on 23 patients.

345. Because of the shortage of beds the majority of these cancer patients were treated as outpatients. There was a total of 11,865 attendances of which 852 attended the clinic for gynaecological conditions conducted by a team of Government radiotherapists and University gynaecologists.

Medical Physics

346. Established in 1956, this is now an essential branch of the Radiological Service. It assists in the physical aspect of planning radiation treatment, operates a radio protection service, assists in the development of new or improved radiological techniques, undertakes the teaching of radiological physics, calibrates the various irradiating machines at regular intervals, prepares radium or radiocobalt sources for application and maintains a workshop.

347. During the year the physicists took part in 975 X-ray or telecobalt plannings, made 198 plaster casts with wax seatings for the positioning of beam applicators and 88 plaster strip casts. In addition to maintaining full records of monitoring carried out in conjunction with the radio protection service, the branch gave advice to both Government and non-Government organizations on problems related to radiation hazards and protection.

348. Two important researches were conducted into the determination by actual measurement of the radiation doses received by the lenses

of the eyes and the nasopharynx during a radical course of deep therapy.

349. Much work was done by the workshop in the maintenance and repair of radiological equipment, the assembly and installation of new equipment, the production of spare parts and of gadgets required for the development of new techniques. This has resulted not only in more efficient work but has effected considerable economies in operating costs.

OPHTHALMOLOGY

350. There are two full-time major ophthalmic centres one at Arran Street in Kowloon and the other at the Violet Peel Polyclinic on Hong Kong Island. From these centres, ophthalmic teams hold 75 out-patient sessions each month at 14 part-time centres situated throughout Hong Kong, Kowloon and the New Territories. There are three 'sight saving' refraction centres and an optical workshop for participants in the School Health Service. Eleven Ophthalmic beds are available in Government Hospitals for the treatment of out-patients. An extension to the Service during the year is the British Red Cross Society Mobile Ophthalmic Unit, based at Arran Street, which pays a regular schedule of visits to centres in the New Territories. Donated to the Hong Kong Branch of the Red Cross Society by Mr. TANG Shiu-kin, C.B.E., it is maintained by the Branch, the professional staff of the Unit being provided by the Ophthalmic Service. It has been in operation since June 1959.

351. There were altogether 161,302 out-patient attendances of which 73,846 were new cases. This constitutes an increase of 26% above the 1958 figures. The optical workshop issued 2,702 new pairs of spectacles and replaced lenses in a further 425 instances. Treatment was given to 440 in-patients and 4,787 operations performed of which 1,424 were classified as major operations. The major part of the operative work is carried out in the theatres of the ophthalmic clinics and, with the services of two Health Visitors and two Almoners available, the risk of post-operative complications is little different between in-patient and out-patient surgery.

352. The Health Visitors paid 2,562 home visits and gave 4,389 health talks to new patients. The Almoners interviewed 20,868 persons and compiled 2,770 detailed case records; 480 patients who sustained industrial eye injuries were referred to the Labour Department and 435 new cases of blindness were referred to the Social Welfare Department for registration and rehabilitation.

353. The Senior Dental Specialist, assisted by one Dental Specialist and 27 Dental Officers, maintains a general dental service for the Civil Service and a School Dental Service. In addition emergency treatment is given in Government hospitals, in Her Majesty's Prisons and at certain Government Outpatient clinics.

354. The general dental service offers treatment to all monthly paid Government officers and their families, with whom Government has a contractual obligation to provide such facilities. Emergency services for the general public, mainly extractions for the relief of pain, are held twice weekly at the Sai Ying Pun Hospital on Hong Kong Island and the Li Kee Memorial Dispensary in Kowloon, fortnightly at Tai Po and Yuen Long, and monthly at Cheung Chau and Tai O.

355. The six School Dental Clinics are maintained for participants in the School Health Service and, although a larger number of fillings was possible during the year, extractions continued to be necessary in many cases—an indication of the extent of the problem of dental caries in Hong Kong. In this connexion a Colony-wide dental survey was carried out during March 1960, prior to the start of fluoridation of the domestic water supplies in Hong Kong. A preliminary assessment of the results of the survey, in which more than 8,000 school children aged between 6 and 11 were examined, indicates that less than one per cent within this age group are free from some degree of dental caries.

356. During the year two small additional Dental Clinics were opened, one static clinic for the general service at Farm Road, Kowloon and one Mobile Dental Unit. The latter was designed and built locally to provide full dental services for Government personnel in the New Territories, who are living considerable distances away from static clinic facilities; it also visits schools in the New Territories to undertake dental examinations and treatment for participants in the School Health Service. The Mobile Unit also provides a limited service for prisoners and certain other patients in the rural areas.

357. The work done during the year is detailed in the following table:

TABLE 30

Government Servants	*1958*	*1959*
Inspections prior to treatment	7,164	7,544
Attended for the first time	2,390	2,850
Total visits by Government servants	23,256	27,026
Total visits by dependants	24,162	27,615
Completed treatment and dentally fit	5,653	6,945

358. The delays in starting routine inspections and treatment for those on waiting lists who are not suffering from emergency conditions was reduced from an average of 11 weeks in 1958 to 8½ weeks in 1959. There is still a considerable delay of six months or more in supplying prosthetic appliances, again excluding emergencies. However the appointment for the first time of an experienced and fully qualified Dental Technologist has enabled a re-organization of this aspect of the service to be started and systematic training of technicians has begun. Plans for a course of training of Dental Technicians at the Technical College have advanced to the stage where it is probable that the first intake of students will occur in September 1960.

359. In the School Dental Service the number of participating children again fell from 28,094 in 1958 to 26,123 in 1959; the ratio of fillings to extractions rose from 92:100 to 137:100. However the number of teeth which had to be extracted because they could not be saved is still very high, 2,576 permanent and 11,262 deciduous teeth being extracted.

Dental Services provided by Welfare & Missionary organizations

360. Welfare organizations maintain a number of dental clinics either for their own members or for the poor in their respective districts. The Hong Kong Dental Society continues to staff four free evening clinics each week, three in Kowloon and one in Hong Kong together with a fortnightly clinic at the Ruttonjee Sanatorium. The St. John Ambulance Brigade sends a Penetration Squad, which includes a dentist, each Sunday to the more remote areas of the New Territories where free treatment is given to those in need. A mobile dental unit built and operated by the Church World Service began operations in the New Territories during June 1959, where it provides emergency and routine dental treatment for poor people at low cost.

Control of Dental Practice

361. Two Dental Inspectors were employed throughout the year in connexion with the supervision and control of private dental practice. Premises used or proposed to be used by private dental practitioners were inspected regularly. There were four prosecutions for alleged dental practice by unregistered persons and three individuals were convicted of this offence.