1941.

NEW ZEALAND.

DEPARTMENT OF HEALTH.

ANNUAL REPORT OF THE DIRECTOR-GENERAL OF HEALTH.

Presented in pursuance of Section 100 of the Hospitals and Charitable Institutions Act, 1926.

HON. A. H. NORDMEYER, MINISTER OF HEALTH.

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THE DIRECTOR-GENERAL OF HEALTH TO THE HON. THE MINISTER OF HEALTH, WELLINGTON.

I HAVE the honour to lay before you the annual report of the Department for the year 1940–41.

PART 1.—GENERAL SURVEY.

INTRODUCTION.

Despite the war the state of the public health in New Zealand during 1940 remained on a comparatively high plane. Indeed, in some respects it showed an improvement over pre-war years. Thus there was a drop in the incidence of notifiable infectious diseases, the maternal-mortality rate and the tuberculosis death-rate were unusually favourable, and the infant-mortality rate reached a new low level record of 30·21 per 1,000 live births.

Work arising directly out of the war made increasing demands on the Department. Matters for which the Department assumed responsibility included the orderly recruitment of medical, dental, and nursing personnel, the medical examination of recruits and medical boarding generally, the supervision of all arrangements in connection with the medical care and hospital treatment of returned sick and wounded soldiers, the organization of auxiliary hospitals under the Emergency Precautions Scheme, and the control of medical supplies. In some phases of this work the Department had the assistance of the National Medical Committee.

Vital Statistics.

(Exclusive of Maori.)

Death-rate.

The death-rate was 9·25 per 1,000 mean population, as compared with the rate of 9·20 in the preceding year.

Infant Mortality.

The infant-mortality rate was 30·21 per 1,000 live births, a new low record for the Dominion. In 1939 the rate was 31·14.

Still-births.

The still-birth rate per 1,000 live births was 29·45 (31·21 in 1939).

Birth-rate.

The total births in 1940 were 32,771, representing a rate of 21·19 per 1,000 mean population. This was the highest rate since 1925.

Maternal Mortality.

The maternal-mortality rate, including deaths from septic abortions, was 2·93 per 1,000 live births, as compared with 3·64 in 1939. When deaths from septic abortion are deducted, the maternal-mortality rate was 2·50.

Infectious and other Diseases.

(Exclusive of Maori, unless otherwise stated.)

A total of 2,929 cases of notifiable diseases were reported in 1940, as compared with 3,260 in 1939.

Scarlet Fever.

Three hundred and fifty-seven cases, with 1 death, were reported as due to scarlet fever. The corresponding figures for the previous year were 480 cases and 2 deaths. The death-rate per 10,000 mean population was 0·01, the same as in 1939.

Diphtheria.

Three hundred and sixty-seven cases of diphtheria were notified, as compared with 517 in 1939. There were 15 deaths, giving a death-rate of 0·10. In 1939 there were 24 deaths and a death-rate of 0·16.

Attempts to control the spread of this disease by compulsory notification, and the removal to hospital of cases and the control of carriers, have reached the practical limit of their usefulness.

On the other hand, it is now accepted that diphtheria can be prevented by active immunization with toxoid or toxoid-antitoxin mixtures. Several countries have passed legislation making immunization against diphtheria compulsory for all young children. New York City was early in the field in diphtheria immunization, and is now reaping the benefit. In the decade 1920–29 there was an annual average of 10,685 cases of and 684 deaths from diphtheria in New York, but in 1939 there were only 543 cases, with 22 deaths. This excellent showing is credited to the extensive immunization of children against diphtheria.

In New Zealand the campaign against this disease by means of active immunization was continued, and the results have been encouraging where it has been carried out for an extended period. In the East Cape Health District, for instance, a programme for the immunization of children was begun in 1930. In 1929 the case rate per 10,000 mean population in that area was 18·11, while in 1940 it had fallen to 1·82.

The Medical Officer of Health for the South Auckland Health District again gives convincing evidence of the value of active immunization. He writes as follows:—

> "There was an increase in the incidence of diphtheria amongst the uninoculated. A total of forty-eight cases were recorded. With the exception of two cases which had received partial immunization, all the cases occurred amongst those who had not received the benefit of immunization, whilst the two partially immunized cases had received one injection only. There were four deaths, three of which were among children of pre-school age. These deaths among young children point to the necessity for continued efforts to arrange for the immunization of as many as possible of the pre-school population. It seems fairly evident now that the campaign for the protection of children against diphtheria is proving a success, and it is hoped that, with further extension of the programme, this satisfactory position will be maintained."

The immunization of children of school age will not in itself suffice to reduce the incidence of diphtheria. Children of pre-school age must also be protected. It is hoped through the co-operation of parents to reach in growing numbers this group of children. Parents of children entering school will be invited to have them protected against diphtheria when the School Medical Officer carries out the medical examination of the school. Steps have also been taken, in co-operation with the Plunket Society, to make this protective measure available to pre-school children attending the Child Welfare Clinics conducted under the auspices of that body.

Enteric Fever.

The number of notifications of enteric fever was 59, with 6 deaths, giving a death-rate of 0·04 per 10,000 mean population. To show the progress which has been achieved in dealing with this disease it may be stated that in 1921 the number of reported cases was 451 and the death-rate was 0·20.

Bacillary Dysentery and "Summer Sickness."

An epidemic of bacillary dysentery in the East Cape Health District caused some anxiety. There were 161 cases (36 Europeans and 125 Maoris), with 11 deaths (3 Europeans, 8 Maoris). Infection was traced variously to contact with mild missed cases, swimming in polluted streams, eating shell-fish from doubtful sources, drinking water from polluted wells or streams, and careless preparation of food at tangis and similar gatherings. The prevailing organism was *B. dysenteriae* (Flexner).

Dr. G. O. L. Dempster, Medical Officer of Health, North Auckland, in reporting on an outbreak of summer sickness, had this to day:—

> "A widespread epidemic of the so-called 'summer sickness' occurred in the Whangarei area during October of 1940. This disease was no doubt due to a salmonella organism, although not recognized as such by the profession and hence not notified to the Department. The term 'summer sickness' is an unfortunate one, as it allows the practitioners to hand a label to the disease without proper investigation. Further, the term conveys the idea that the disease is directly due to climatic influences and therefore something that is inevitable. One typical case was fully investigated at the Whangarei Hospital and an organism of the *B. enteritidis* group isolated. There is no doubt that these outbreaks are more common than is recognized in the warmer parts of New Zealand and are conveyed by contaminated food. Unfortunately, until such time as the disease is notified promptly, little can be done from the preventive aspect."

Influenza.

The death-rate from influenza (all forms) was 0·77 per 10,000 mean population. In 1939 the rate was 1·10.

Poliomyelitis.

Twenty-two cases of this disease were notified in 1940, of which 4 were non-paralytic.

Lethargic Encephalitis and Cerebro-spinal Fever.

Four cases of the former and 19 of the latter were notified. The low incidence of cerebro-spinal fever was gratifying, as this is a disease which is apt to flourish in times of war. The good record of 1940, however, did not long continue. In April–May, 1941, a localized outbreak resulting in 20 cases and 4 deaths occurred in the Bay of Islands County, while sporadic cases were reported from other parts of New Zealand. An account of this outbreak will be given in next year's report.

Whooping-cough and Measles.

Deaths from whooping-cough numbered 23, while only 1 death was reported from measles.

Puerperal Sepsis.

Sepsis following childbirth was responsible for 13 deaths (16 in 1939). The deaths due to sepsis following abortion number 14 (20 in 1939).

Tuberculosis.

There were 600 deaths from tuberculosis (all forms), as compared with 613 in 1939. The death-rate per 10,000 mean population for the past five years is set out in the following table:—

Year.	Respiratory Tuberculosis.	Non-respiratory Tuberculosis.	Tuberculosis (all Forms).
1936	3·63	0·94	4·56
1937	3·28	0·63	3·91
1938	3·17	0·73	3·93
1939	3·39	0·59	3·98
1940	3·24	0·64	3·88

Tuberculosis is one of our major public-health problems, and measures taken to deal with it were outlined in previous reports. District nurses are now the agents for investigating tuberculous cases. The search for contacts and the supervision of patients living in their homes is now being much more effectively undertaken by these officers than by Health and Sanitary Inspectors.

A refresher course was held for institutional and departmental nurses whose duties relate to the control of tuberculous cases. The course gave the nurses the opportunity of becoming acquainted with advances which have been made in knowledge regarding the disease.

Cancer.

Cancer is still one of the principal causes of death, and for this reason the educational work of the New Zealand Branch of the British Empire Cancer Campaign Society merits the highest support.

Hydatid Disease.

Sir Louis Barnett, in an article in the *New Zealand Medical Journal*, December, 1940, draws attention to the unfavourable position New Zealand still continues to hold as regards the incidence of hydatid disease. He makes the following deductions from his study of the available data: (1) About 120 new cases of hydatid disease are treated in New Zealand every year, and about 16 of them are fatal; (2) about half our sheep and cattle have livers and lungs infected with hydatid cysts; (3) a third or more of our country dogs harbour the adult parasite *Taenia echinococcus*; (4) in spite of an intensive campaign of prevention, there is no definite evidence that, taking New Zealand as a whole, hydatid infection is on the wane; (5) the South Island, though only half as populous as the North Island, has almost as many cases of hydatid disease. This disproportion is largely due to a particularly heavy infestation in the Canterbury district.

Dr. E. W. Bennett resumed his publicity work at the agriculture shows, in an effort to enlighten the public in general and dog-owners in particular as to the cause and methods of prevention of this disease. Unfortunately, there are still owners who neglect to dose their dogs with the recommended vermifuge supplied by the Government. Until this apathy is overcome, death and invalidity will continue from what is a preventable disease.

Venereal Diseases.

The specialist Medical Officers appointed last year have carried out inspections of existing facilities in the public hospitals throughout the Dominion for treatment of venereal diseases. As a result of their investigations it is hoped to ensure reasonable standards as regards accommodation, equipment, staffing, &c., at the various hospitals to deal satisfactorily with these cases.

A considerable measure of success has been met with in the steps which were taken to trace and bring under treatment persons who were suspected of being responsible for infection of members of the armed Forces. Experience has shown, however, that the powers with which the Department is armed are inadequate. As a result, it is proposed to submit suggestions for amendments to the existing regulations.

The work of Dr. Maaka amongst the Maoris resident in part of the Whakatane district, referred to in the past year's report, has done a great deal to alleviate the position in that area.

PUBLIC-HEALTH PROBLEMS ARISING OUT OF THE WAR.

A medical conference to consider problems of New Zealand, with special reference to war conditions, met in October. The composition of the Conference was as follows:—

Chairman: Director-General of Health.
Medical Research Council and Board of Health: Dr. Muriel Bell, Sir Donald McGavin, Professor C. E. Hercus, and Sir James Elliott.
Medical School, Otago University: Professor F. R. Smirk.
Army Department: Brigadier F. T. Bowerbank.
British Medical Association: Dr. J. O. Mercer.
Royal Australasian College of Physicians: Dr. C. A. Taylor.
Royal Australasian College of Surgeons: Dr. D. Whyte.
Department of Health: Dr. R. A. Shore, Dr. T. R. Ritchie, Dr. H. B. Turbott, and Dr. L. C. McNickle.

Among the more important problems discussed were—

(1) Control of infectious diseases among military Forces, with special reference to influenza, rubella, and cerebro-spinal fever.
(2) Control of Tuberculosis: The conference advocated the use of micro-photography (35 mm. film) for carrying out surveys and group examinations to determine the incidence of tuberculosis in New Zealand and to seek out active cases of disease. Steps have since been taken to encourage all Hospital Boards employing a full-time radiologist to purchase suitable units so as to enable the use of this method of diagnosis.
(3) Quarantine and Port Health Inspection: The conference favoured the English system whereunder infectious cases on arriving ships are sent to isolation hospitals, while other persons on board are allowed to go about their business under the surveillance of the local Medical Officer of Health.
(4) Venereal Diseases: The measures in force for combating these diseases were reviewed.
(5) Nutrition: The conference approved a report presented by Dr. Muriel Bell on the subject of nutrition and endorsed her programme for further work.
(6) Medical Research: The conference considered suggestions for matters for research which might be brought to the notice of the Medical Research Council.

A fuller account of the proceedings was published in the *New Zealand Medical Journal* of December, 1940.

REPORTS OF DIVISIONAL DIRECTORS.

Public Hygiene.

Dr. Ritchie gives detailed statistics for the year.

Conferences of Medical Officers of Health were held during the year in order to discuss health problems connected with the war. Duties connected with the control of infectious and occupational diseases, the protection of the wholesomeness of food, and the supervision of water-supplies and sewage-disposal systems received continuous attention.

School Hygiene.

Dr. H. B. Turbott since his appointment has given special attention to the strengthening of the School Medical Service. Definite progress has been made in organizing child-welfare clinics in conjunction with the Plunket Society. These clinics, covering ages of children one to five years, have already commenced. The campaign against diphtheria has been continued and intensified.

Hospitals.

Dr. Shore gives some information about hospital building activities and steps taken to provide accommodation for soldier patients.

The estimates of requirements of all Hospital Boards provided for net estimated maintenance expenditure of £1,440,636 2s. 9d., which represented a reduction of £523,968 0s. 4d. in the amount provided for 1939–40. As a result of this reduction the amounts to be constituted by levy and subsidy were respectively £191,890 4s. 8d. and £332,077 15s. 8d. less than the amounts for the previous year.

The principal factors accounting for the reduction in requirements were substantial surpluses in the Maintenance Accounts of most Boards at the commencement of the year totalling £318,601 5s. 7d., compared with a total deficit of £26,303 0s. 1d. on 1st April, 1939, and the estimated increase of £484,471 15s. 4d. in patients' fees from all sources, due mainly to payment of maternity benefits and hospital benefits under Part III of the Social Security Act, 1938. The circumstances under which the surpluses occurred were referred to in last year's report. As an offset to the above increased amounts, hospital-maintenance expenditure showed an increase of £369,945 8s. 9d. The estimates for capital requirements again provide for further increased expenditure, particularly for building programmes.

The total estimated net capital expenditure, which is contributed equally by levy and subsidy, amounted to £279,974 14s. 7d., an increase of £38,208 11s. 8d. in the estimates for the previous year. The estimated expenditure from loan-moneys totalled £1,602,891 1s. 3d., of which £607,782 19s. 7d. had already been raised at the commencement of the year.

Statistical and financial information will be published in a special Appendix to this report when the annual Income and Expenditure Accounts and returns of Boards are available.

Nursing.

Miss Lambie reviews the work of the Nurses and Midwives Registration Board and outlines the steps taken to ensure a high standard of nursing education. The post-graduate course had another successful year. An extra load has been thrown on the officers of the Nursing Division from work arising out of the recruitment of nurses and the maintaining of a proper balance between Army and civilian needs. Bursaries granted by the Joint Council of the Order of St. John and the Red Cross Society have enabled the training of occupational therapists for work in connection with the military wards in the hospitals in the four main centres, while bursaries granted by the Department have enabled the training of additional occupational therapists for work in the convalescent military hospitals in Rotorua and Hanmer Springs.

Maternal Welfare.

Dr. Paget reviews the steps which have been taken to promote maternal welfare in New Zealand. It is encouraging to find that the measures instituted have resulted in a definite fall in the maternal death-rate.

Nutrition.

Dr. Muriel Bell joined the staff as Nutrition Officer during the year. In an interesting report she sets out her programme of work for the future.

Dental Hygiene.

Mr. Saunders reports a year of much activity. A notable event was the opening of the new Dominion Training-school for Dental Nurses and Wellington Dental Clinic. The treatment centres now number 351, and 108,848 children received systematic dental treatment. The number of dental nurses now in the field has increased by 34, while 139 student dental nurses are in training at the training-school in Wellington.

Maori Hygiene.

The following table shows a comparison between Maori and European vital statistics:—

	Maori.	European.
Birth-rate per 1,000 of population	46·87	21·19
Infant-mortality rate per 1,000 live births	87·22	30·21
Crude death-rate per 1,000 of population	17·51	9·25
Crude death-rates per 10,000 of population—		
Tuberculosis, all forms	41·32	3·88
Pulmonary tuberculosis	31·87	3·24
Other forms of tuberculosis	9·45	0·64
Influenza	4·17	0·77
Typhoid fever	1·32	0·04

From these figures it can be seen that generally the Maori rates compare most unfavourably with the European. Tuberculosis in all its forms takes a particularly heavy toll of the Maori people. As pointed out in previous reports, the problem is being grappled with through segregation of active cases, provision of hutments, improved facilities for diagnosis, and health educational work. An amount of £6,000 was included in the year's estimates for erection of hutments for treatment of tuberculous cases.

The Government also voted grants totalling £22,000 to certain Hospital Boards of the East Cape, Bay of Plenty, and North Auckland districts towards the capital cost of providing hospital accommodation for Maori tuberculous cases. It was recognized that the accommodation was inadequate and that the Boards concerned could not by ordinary means of finance make adequate provision in this direction.

The installation of satisfactory water-supplies is making steady progress, and privies are being provided for those Maoris who have no suitable privy and who could not easily provide one from their own resources.

Industrial Hygiene.

The growth of secondary industries has intensified the problem of industrial hygiene. Although there is close co-operation with the Labour Department in this sphere, more attention could profitably be given to investigating health problems in this specialized branch of preventive medicine. When opportunity offers, it is hoped to appoint a specially-qualified Medical Officer to undertake this work.

Vaccine-station.

Dr. P. P. Lynch, Director of the Government Vaccine-station, reports that large quantities of vaccine lymph have been supplied to the armed Forces, and that further quantities have been forwarded to the Government of New South Wales and to the Samoan Administration. The amount of vaccine lymph is adequate for all the needs of the community.

Social Security.

Medical, Hospital, and Allied Benefits under Part III of the Social Security Act.

As at the 31st March, 1941, the following classes of benefits under Part III of the Social Security Act had been brought into operation :—

(1) Maternity benefits.
(2) Hospital benefits for in-patients.
(3) Hospital benefits for out-patients.
(4) Medical benefits.

Details of the scope of maternity benefits and hospital benefits for in-patients which were inaugurated during the year ended 31st March, 1940, were included in the previous report. The main arrangements for medical benefits and hospital benefits for out-patients are set out in this report.

Maternity Benefits.

For the year ended 31st March, 1941, maternity-benefits payments totalling £351,759 were made in respect of 10,538 patients of Hospital Boards' hospitals, 2,167 patients of St. Helens Hospitals, 20,275 patients in licensed maternity hospitals, and 2,335 patients attended in private homes by obstetric nurses, a total of 35,315 patients.

For the same period payments amounting to £167,367 were made to medical practitioners in respect of 32,882 patients.

Supplementary Maternity Benefits.

By regulations of the 14th May, 1940, maternity benefits are made available in cases where a woman has made arrangements to be confined either in a hospital affording hospital services in relation to maternity benefits, or by a contracting obstetric nurse, but who, when the services are required, is unable to obtain them in accordance with the arrangements made owing to some emergency or exceptional circumstances. In such a case the woman may obtain maternity benefits in respect of treatment obtained from a licensed medical and surgical hospital or a non-contracting maternity hospital or from a registered nurse or a non-contracting obstetric nurse.

Hospital Benefits for In-patients.

Claims totalling £893,495 were received from Hospital Boards during the year ended 31st March, 1941, representing an average of slightly over 8,150 patients treated daily during the year. Claims rendered by licensees of private hospitals during the year totalled £141,915. The amounts debited to the Social Security Fund during the year in respect of treatment afforded at Queen Mary Neurological Hospital at Hanmer Springs, Mental Hospitals Department institutions, and Rotorua Sanatorium were respectively £10,060, £171,000, and £4,711.

In addition, payments totalling £37,872 were made during the year in respect of hospital treatment afforded in approved institutions. Included in this amount are benefits paid to the Royal New Zealand Society for the Health of Women and Children for treatment afforded to patients (infants and mothers) at Karitane Hospitals. In respect of treatment afforded infants the sum of 6s. per day is payable from the Fund, and where the mother accompanies the infant to hospital an additional fee of 3s. per day is payable. Treatment is free of charge to patients.

Hospital Benefits for Out-patients.

Out-patient treatment in hospitals maintained by Hospital Boards, which became the subject of benefits on the 1st March, 1941, includes all medical, surgical, or other treatment afforded to a patient by the staff of the hospital or by any person acting by direction of the Hospital Board, except—

(*a*) Dental treatment.
(*b*) The supply of any drugs, medicines, or appliances (including dressings) that are not taken by the patient or applied in the course of his treatment at the hospital but are intended for his subsequent use.
(*c*) X-ray services for purposes of diagnosis only.
(*d*) Laboratory services for bacteriological or pathological purposes.
(*e*) Any treatment afforded to an out-patient in his own home or place of residence.

In respect of the services covered by out-patient benefits there are payable from the Social Security Fund to any Board affording out-patient treatment, and to the State Departments which administer Queen Mary Hospital and Rotorua Sanatorium, amounts based on the expenditure incurred in affording services. Out-patient services which are the subject of benefits are entirely free of cost to the individual.

There is no provision for payment of hospital benefits in respect of out-patient services afforded at licensed private hospitals.

Medical Benefits.

Scope of Benefits.—Medical benefits, which, pursuant to the Social Security (Medical Benefits) Regulations 1941, were introduced on the 1st March, 1941, are defined as all proper and necessary services of medical practitioners, except—

(*a*) Medical services afforded in relation to maternity benefits.
(*b*) The administration by medical practitioners of anæsthetics in any case where a medical practitioner by whom an anæsthetic is administered acts in assistance of or in collaboration with any other medical practitioner or registered dentist.
(*c*) Medical services that involve the application of special skill and experience of a degree or kind that general medical practitioners as a class cannot be reasonably expected to possess.

General Arrangements.—In broad outline the medical-benefits scheme provides for medical practitioners to enter into agreements with patients to afford them medical services as defined in return for payment from the Social Security Fund on a *per capita* basis.

In detail the scheme provides for the uplifting by persons entitled to benefits of forms of application and agreement which are available at any post-office or District Health Office throughout the country. The form of application is completed by the person desiring benefits and presented to the doctor of his choice. If the doctor is willing to afford medical benefits to the applicant he signs the form of agreement embodied in the card and forwards it to the Medical Officer of Health for the district in which the patient resides. On receipt of the card the Medical Officer of Health issues to the person concerned a medical-benefits card which constitutes evidence of the person's right to medical benefits from the doctor named in the card.

Remuneration of Doctors.—The issue of medical-benefit cards is recorded by the Medical Officer of Health, who causes to be prepared at regular intervals each month a statement of additions to and deletions from the patients list of each doctor. These statements are forwarded to the doctor concerned and are intended to serve as his record of patients. The statement for the period ended 15th of each month is the basis of payment to the doctor by way of capitation fees, which are at the rate of 15s. per patient per annum. In addition to the annual capitation fee, the doctor is entitled to payment of mileage fees in respect of certain patients not resident in the borough in which he resides or has his main surgery.

In respect of patients whose residence is more than three miles distant from the residence or surgery (whichever is the nearer) of the nearest general medical practitioner, the doctor is entitled to receive mileage fees from the Fund at the rate of 2s. per mile (counted one way) per annum, with a maximum of seventeen chargeable miles, except in special circumstances. Such travelling distance as is not the subject of payment from the Fund may be the subject of payment by the patient directly to the doctor. Provision is made for variation of mileage rates where the Department is satisfied that the nature of the route of travelling results in the travelling being unusually expensive or unusually time-consuming.

Termination of Agreement in respect of Medical Benefits.—In any case where a patient desires to change his doctor, the transfer becomes effective immediately if both doctors agree to the transfer. If, however, the doctor affording benefits does not consent to the transfer, the transfer does not become operative until the expiration of the month following the month during which notice of the proposed transfer is received by the Medical Officer of Health.

The foregoing provisions apply where the patient resides in the area of practice of both doctors. If the patient removes to a locality not visited by the doctor on whose list his name appears, he may transfer immediately on obtaining the acceptance of a doctor in the new locality. The transfer of patients to the lists of doctors who resume civilian practice in their old district after being absent on military service is made specially easy.

A doctor may terminate his agreement in respect of a particular patient by giving due notice to the Medical Officer of Health, who is obliged to inform the patient accordingly. The patient's name is removed from the doctor's list of patients as from the date of his acceptance as a patient by another doctor or on the expiration of the month following the month during which the original doctor's notice is received by the Medical Officer of Health. Provision is made in the regulations to safeguard the position of a person who is in need of treatment. Accordingly, it is the duty of a doctor who gives notice of his desire to terminate an agreement in respect of a person who in is need of treatment to inform the Medical Officer of Health of this fact. In such a case the patient's name is not removed from the doctor's list until he has been accepted by another practitioner or until the expiration of the month following the month in which the medical practitioner advises the Medical Officer of Health that the patient is no longer under treatment or in immediate need of treatment.

Provision is contained in the regulations enabling a doctor to withdraw from the scheme by giving three months' notice. Shorter notice may be accepted at the discretion of the Minister. Shorter notice may properly be given by a doctor if material alterations are made in the general arrangements for the provision of benefits.

General.

Milk-in-schools Scheme.

Pasteurized bottled milk is now available to 217,727 pupils attending 1,256 schools; malted-milk powder to 6,793 pupils attending 130 schools, and milk for cocoa-making purposes to 4,443 pupils attending 29 schools. In other words, over 81 per cent. of the school population have an opportunity of obtaining milk in one form or another through the milk-in-schools scheme. These figures represent a substantial increase on those for the previous year. Reports continue to be received as to the beneficial effects of this free issue of milk.

There is evidence of an increase in sales to the public of pasteurized milk, particularly of pasteurized bottled milk. Whilst it is not claimed that the milk-in-schools scheme has been responsible for this, yet it is reasonable to believe that the Department's insistence on the use of pasteurized milk for school-children has been a contributing factor. It will be a distinct gain when only bottled pasteurized milk is available to the public.

Apples-in-schools Scheme.

This scheme was inaugurated early in 1941, and apples are being supplied during the present apple season free of all cost to pupils attending some 2,700 schools. The supply will probably continue for a ten-weeks period and will involve the distribution of some twelve thousand cases of apples per week. All types of schools are included in this scheme. The cost of the apples is being met by the Department.

Health Camps.

Health camps were extended so as to meet the needs of children who would be expected to benefit from a stay in this type of institution. The King George V Memorial Fund Board, which is responsible for the capital expenditure, has contracted to build or extend existing camps at the following locations: Auckland, Port Waikato, Wanganui, Gisborne, Otaki, Nelson, Christchurch, Roxburgh, and Invercargill. Negotiations are also in progress to acquire health-camp sites in North Auckland and the centre of the North Island.

Despite the many other appeals, funds from the sale of health stamps and collections and donations this year reached the substantial total of £6,610 4s. 5d. This sum, with the subsidy of £2 for £1 to be received from art-union funds, makes a total of £19,830 13s. 3d. available for the maintenance of children. There is a growing appreciation among district executives and the public generally of the benefits which children derive from health-camp life.

Health Education.

Public-health education has engaged increasing attention. The principal methods followed were—

(*a*) Publication of pamphlets, leaflets, circulars, annual reports, &c. Through the co-operation of the Education Department some eight thousand copies of "Healthy Youth" were supplied to school-teachers throughout the Dominion. There was a steady demand from the public and educational authorities for "Good Nutrition," which was placed in the hands of a wholesale firm for sale to booksellers. The first edition of ten thousand having almost been disposed of, a second is now in course of preparation. The Plunket Society booklet "The Baby's First Month" was revised and ten thousand copies printed. A pamphlet on artificial respiration was produced in co-operation with the Department of Internal Affairs and some thirty thousand copies distributed.

(*b*) The preparation of special articles for newspapers and journals. Information and articles of public-health interest have been supplied to the newspaper press, and monthly articles continue to be contributed to the *Journal of Agriculture*. The Department has also representation on the publications committees of the *New Zealand Nursing Journal* and the journal of the New Zealand Branch of the Royal Sanitary Institute.

(*c*) Lectures and addresses, educational classes, and conferences. Divisional officers, Medical Officers of Health, School Medical Officers, Inspectors of Heath, and members of the nursing staff have operated actively in this field. The services of officers have been availed of in Emergency Precautions Scheme.

(*d*) Health exhibits and demonstrations. In addition to the hydatid-disease-prevention exhibits organized by Dr. Bennett, a successful health exhibit and demonstration was held at the A. and P. Association Winter Show at Rotorua.

(*e*) Projectors have been supplied to district officers, and a number of health films are available.

(*f*) Broadcasting. Radio talks have been delivered, a special feature being those given to children in the educational sessions arranged by the Education Department. It is the intention of the Department to extend this sphere of its work as far as practicable under present conditions. Provision is being made in the Department's estimates for increased expenditure on this service. Further reference to this subject will be found in the report of the Director of the Division of School Hygiene, Dental Hygiene, and the Nutrition Officer.

Boards associated with the Department.

The Board of Health, Medical Council, Medical Research Council, Nurses and Midwives Registration Board, Opticians Board, Masseurs Registration Board, and the Plumbers Board continued their work during the year. Reference to the work of the Nurses and Midwives Registration Board appears in the report of the Director of the Division of Nursing.

Medical Research Council.

The Medical Research Council continued its work during the year. The following Committees submitted reports to the Council:—

(1) Obstetrical Research Committee: Dr. F. O. Bennett, Medical Officer for Obstetrical Research, completed his second volume of the "Statistical Inquiry into the Incidence, &c., of the Toxæmia of Pregnancy in New Zealand."

(2) Tuberculosis Committee: The work of typing tubercle bacilli was commenced. Information is being obtained of the incidence of pulmonary tuberculosis in certain occupations.

(3) Hydatid Committee: This Committee is closely associated with the Department of Hydatid Research and Prevention, Medical School, Otago University. The Chairman of both bodies is Sir Louis Barnett, who publishes annually in the *New Zealand Medical Journal* his investigations on the incidence of hydatid disease in man and animals, and in the journal of the Australasian College of Surgeons the Hydatid Registry of clinical records (now numbering 1,550).

(4) Committee for Study of the Physiology and Pathology of the Thyroid Gland: Researches on thyroid problems outlined in previous reports have been steadily prosecuted. Definite progress was recorded in various directions, particularly in the elucidation of the goitre-producing action of the Brassicæ. Reports on these studies by T. H. Kennedy, H. D. Purvis, W. E. Griesbach, and V. I. E. Whitehead are to be submitted for publication to the *British Journal of Experimental Pathology*.

(5) Nutrition Committee: Attention has already been drawn to the activities of Dr. Muriel Bell, which are closely linked up with those of this Committee. Miss Elizabeth C. G. Wilson continued her studies, and presented a report comparing white bread, 10 per cent. germ bread, and wholemeal bread made from the same wheat. These were compared as to their vitamin B_1 content. The report was sent to the Wheat Research Institute, and will be published in due course. A dietary survey among the Maori population is contemplated. It may be possible to do simultaneously some work on dietaries in farming areas among the European population. The assessment of the nutritional status of the population in respect of vitamin B_1 and vitamin C is to be undertaken.

The work of the Medical Research Council, although handicapped by war conditions, has gone steadily forward. The policy has been to encourage the continuance of investigations, and the Council is grateful for assistance given by the members of the Committees.

Staff.

I regret to record the death of Dr. Mary Champtaloup, an able and sympathetic officer. As School Medical Officer she was stationed in various centres, and for a time was Medical Officer of Health for the Taranaki Health District. Dr. Champtaloup carried out several health surveys of school-children, and was responsible for the formation of the Mothers' Health League in Wellington.

Dr. Elizabeth Gunn retired after twenty-eight years of devoted service as a School Medical Officer. For the last three years she acted as Director of this Division of the Department's work. On her retirement Dr. H. B. Turbott was appointed to the position.

Dr. Baker-McLaglan, Dr. Emma Irwin, and Dr. R. B. Phillipps retired after long and valuable service as School Medical Officers. Dr. Baker-McLaglan's name will always be associated with the pioneer research work into the incidence of goitre among school-children in the Canterbury district. Dr. Irwin was a highly esteemed officer who for a time held the position of Medical Superintendent of the Otaki Tuberculosis Sanatorium when administered by the Department. The introduction of open-air schools in this country owes much to the support given to this movement by Dr. Phillipps.

In conclusion, I wish to express my thanks for the support rendered me by officers during the year.

M. H. Watt,
Director-General of Health.

PART II.—PUBLIC HYGIENE.

I have the honour to submit my annual report for the year ended 31st March, 1941.

SECTION I.—VITAL STATISTICS.

(Exclusive of Maori unless otherwise stated.)

POPULATION.

The mean population of the Dominion for 1940 was estimated to be 1,546,312, an increase of 6,892 over the corresponding figure for 1939.

BIRTHS.

The births of 32,771 living children were registered during 1940, an increase of 3,938 over the previous year. The birth-rate per 1,000 of mean population was 21·20.

DEATHS.

Deaths registered during 1940 numbered 14,282, an increase of 124 over the number of deaths in the previous year. The crude death-rate was 9·25 per 1,000, compared with 9·20 in 1939.

STILL-BIRTHS.

A still-born child is defined as one "which has issued from its mother after the expiration of the twenty-eighth week of pregnancy, and which was not alive at the time of issue." In 1940 still-births numbering 965 were registered, an increase of 65 over the figure for the previous year. The still-birth rate per 1,000 total births was 28·60 and per 1,000 live births 29·45.

THE PRINCIPAL CAUSES OF DEATH.

The following table gives the main causes of death during the year, the actual number of deaths therefrom, and the death-rates per 10,000 of mean population for each of the last five years :—

Cause.	1940.		1939.	1938.	1937.	1936.
	Number.	Rate.	Rate.	Rate.	Rate.	Rate.
Heart-disease (all forms)	4,565	29·52	27·80	27·45	26·25	24·43
Cancer	1,858	12·02	11·79	11·76	11·82	11·81
Violence	879	5·68	5·72	6·57	5·99	5·79
Pneumonia	247	1·60	2·02	4·03	3·36	2·68
Pneumonia (secondary to influenza), whooping-cough, and measles	44	0·28	0·58	1·23	0·47	0·68
Bronchitis	173	1·12	1·36	1·32	1·14	1·35
Broncho-pneumonia	277	1·79	2·00	2·33	1·72	1·61
Tuberculosis (all forms)	600	3·88	3·98	3·93	3·91	4·56
Kidney or Bright's disease	492	3·18	3·47	3·82	3·89	3·96
Apoplexy or cerebral hæmorrhage	1,307*	8·45*	5·77	5·61	5·37	5·09
Diseases of the arteries	152*	0·98*	3·46	3·62	3·62	2·99
Senility	406	2·63	2·16	2·64	2·37	2·55
Diabetes	306	1·98	2·23	1·88	1·83	1·59
Hernia and intestinal obstruction	121	0·78	0·70	0·72	0·81	0·66
Diseases and accidents of childbirth (puerperal mortality)	96	0·62	0·68	0·72	0·63	0·62
Appendicitis	90	0·58	0·69	0·77	0·77	0·80
Diarrhœa and enteritis	77	0·50	0·45	0·64	0·33	0·40
Epilepsy	52	0·34	0·26	0·32	0·37	0·33
Common Infectious Diseases.						
Influenza (all forms, including pneumonic)	119	0·77	1·10	0·88	0·73	0·94
Diphtheria	15	0·10	0·16	0·20	0·16	0·13
Whooping-cough	23	0·15	0·01	0·14	0·08	0·32
Scarlet fever	1	0·01	0·01	0·01	0·04	0·05
Typhoid and paratyphoid	6	0·04	0·02	0·05	0·06	0·05
Measles	1	0·01	0·05	1·07	0·02	0·02

* Owing to an alteration in the international agreement as to the allocation of deaths to various causes, the figures for these two conditions are not separately comparable with those of earlier years.

Tuberculosis (all Forms).

Year.	Number of Deaths from Tuberculosis.	Death-rate from Tuberculosis per 10,000 of Mean Population.	Year.	Number of Deaths from Tuberculosis.	Death-rate from Tuberculosis per 10,000 of Mean Population.
1935	576	3·89	1938.. ..	597	3·93
1936	680	4·56	1939.. ..	613	3·98
1937	589	3·91	1940.. ..	600	3·88

Of the 600 deaths from tuberculosis in 1940, 501 (3·24 per 10,000 of mean population) were assigned to tuberculosis of the respiratory system, and 99 (0·64 per 10,000) to other forms of the disease.

Tuberculosis other than that of the Respiratory System.—The 99 deaths last year so assigned were distributed as follows (the figures for 1939 being given in parentheses) :—

Tuberculosis of the meninges and central nervous system ..	39	(34)
Tuberculosis of intestines and peritoneum	13	(12)
Tuberculosis of vertebral column	12	(7)
Tuberculosis of bones and joints	2	(2)
Tuberculosis of lymphatic system	2	(1)
Tuberculosis of genito-urinary system	10	(7)
Tuberculosis of other organs	1	(3)
Disseminated tuberculosis	20	(25)
	99	(91)

Infant Mortality.

Deaths of infants numbered 990, and the infant-mortality rate was 30·21 per 1,000 live births, compared with 31·14 in 1939.

Infant Mortality in New Zealand, 1935–40 (per 1,000 Live Births).

Year.	Under One Month.	One Month and under Twelve Months.	Total under Twelve Months.	Year.	Under One Month.	One Month and under Twelve Months.	Total under Twelve Months.
1935 ..	22·03	10·23	32·26	1938 ..	24·15	11·48	35·63
1936 ..	22·31	8·65	30·96	1939 ..	21·85	9·29	31·14
1937 ..	22·22	8·99	31·21	1940 ..	22·03	8·18	30·21

Analysis of Deaths of Infants under One Month of Age, 1940.

The following table gives the causes of these deaths during the year :—

Cause of Death.	Under One Day.	One Day and under One Week.	One Week and under Two Weeks.	Two Weeks and under Three Weeks.	Three Weeks and under One Month.	Total.
Diphtheria	..	..	..	..	..	..
Whooping-cough	..	..	..	..	..	..
Influenza	..	..	..	..	..	..
Syphilis	..	1	..	..	1	2
Convulsions	..	1	..	..	..	1
Broncho-pneumonia	..	2	2	3	1	8
Pneumonia	..	..	1	1	3	5
Diarrhœa and enteritis	..	..	1	..	1	2
Congenital malformations	36	40	22	11	8	117
Congenital debility	2	6	2	..	..	10
Injury at birth	31	75	12	1	1	120
Premature birth	185	125	17	2	1	330
Other diseases of early infancy	28	63	12	4	..	107
Other causes	6	5	3	4	2	20
Totals, 1940	288	318	72	26	18	722
Totals, 1939	272	249	64	30	15	630

The following table shows for the past five years the death-rate per 1,000 total births for still-births and for live births at various ages up to one month :—

Rates per 1,000 Total Births.

Year.	Still-births.	Under One Day.	One Day and under Two Days.	Two Days and under One Week.	One Week and under Two Weeks.	Two Weeks and under One Month
1936	28·63	8·88	3·01	5·55	2·54	1·68
1937	28·42	9·11	2·32	6·61	2·20	1·35
1938	26·54	7·93	3·04	7·93	2·54	2·07
1939	30·27	9·15	2·32	6·05	2·15	1·52
1940	28·60	8·54	3·14	6·28	2·13	1·30

SECTION 2.—NOTIFIABLE DISEASES.

Attached are tables showing the notifications of infectious and other notifiable diseases during 1940. Tables A, B, and C deal with Europeans only.

The year was a quiet one, with less than the usual prevalence of infectious disease, the total number of notifications of these and other notifiable diseases being 331 less than during the previous year.

From Table D it will be seen that notifications of infectious diseases amongst the Maoris increased from 452 in 1939 to 784 in 1940. Tuberculosis of the respiratory system showed an increase of 164 cases. The marked increase in notifications of tuberculosis is not considered to be due to greater incidence of the disease, but to more cases coming to the notice of the Department with increasing development of district-nursing services in Maori areas.

TABLE A.—NOTIFIABLE DISEASES IN NEW ZEALAND FOR YEAR ENDED 31ST DECEMBER, 1940, SHOWING DISTRIBUTION BY MONTHS

Month.	Scarlet Fever.	Diphtheria.	Enteric Fever.		Tuberculosis (Pulmonary.)	Tuberculosis (Other.)	Cerebro-spinal Meningitis.	Poliomyelitis.		Influenza.	Erysipelas.	Puerperal Fever.		Eclampsia.	Tetanus.	Hydatids.	Dengue Fever.	Trachoma.	Ophthalmia Neonatorum.	Lethargic Encephalitis.	Food Poisoning.	Bacillary Dysentery.	Undulant Fever.	Actinomycosis.	Chronic Lead Poisoning.	Beri-beri.	Anthrax.	Phosphorus Poisoning.	Ankylostomiasis.	Totals, 1940.	Totals, 1939.	Totals, 1938.
			Typhoid.	Paratyphoid.				Paralytic.	Non-paralytic.			Ordinary.	Following Abortion or Miscarriage.																			
January	24	23	3	..	76	..	1	5	..	..	28	15	13	3	2	8	..	..	1	..	2	7	1	..	..	..	..	..	..	212	309	266
February	35	25	7	..	86	..	2	3	2	3	22	7	10	5	..	2	..	..	1	3	2	11	2	..	1	..	..	..	..	229	225	237
March	42	47	7	1	76	..	2	1	2	..	21	3	7	3	..	2	..	..	..	..	12	18	..	2	..	..	..	..	..	246	301	336
April	31	48	3	..	88	..	1	..	..	1	20	8	11	3	..	4	..	..	1	..	6	6	1	..	..	2	..	..	..	234	230	369
May	37	32	2	1	106	..	2	1	..	8	33	13	13	6	2	2	..	..	1	..	..	4	5	..	..	..	1	..	..	269	320	403
June	41	39	4	1	95	..	2	..	..	3	29	9	12	8	..	2	..	..	3	..	4	2	..	..	..	..	..	..	..	254	321	354
July	39	38	6	1	103	..	2	2	..	..	42	15	11	4	1	5	..	..	1	..	3	11	1	1	1	..	..	..	1	288	285	365
August	33	44	5	1	93	..	1	2	..	9	37	13	7	6	1	2	..	..	1	..	..	5	2	2	..	..	..	..	..	264	284	342
September ..	27	21	4	..	106	..	1	1	..	1	29	15	15	8	4	4	1	..	..	..	1	6	2	..	..	..	..	..	..	246	242	253
October	17	22	2	..	114	37	..	3	..	..	35	12	12	11	..	..	..	..	1	1	1	..	3	..	2	..	..	..	..	273	261	279
November ..	21	16	6	..	83	36	1	..	..	2	21	6	9	2	1	2	..	..	..	..	5	7	3	1	..	..	..	..	..	222	277	295
December ..	10	12	5	..	67	20	4	..	..	..	22	12	7	10	2	3	..	..	3	..	1	11	2	..	1	..	..	..	..	192	205	291
Totals, 1940 ..	357	367	54	5	1,093	93	19	18	4	27	339	128	127	69	13	36	1	..	13	4	37	88	22	6	5	2	1	..	1	2,929	..	..
Totals, 1939 ..	480	517	46	15	989	..	22	41	8	57	552	131	120	67	12	39	..	6	20	1	53	39	26	4	13	1	..	1	..	..	3,260	..
Totals, 1938 ..	662	786	57	7	1,031	..	24	20	2	36	522	125	138	74	10	46	..	6	21	7	23	161	21	3	8	..	..	..	..	..	..	3,790

Table B.—Notifications of Cases of Notifiable Diseases by Health Districts for Year ended 31st December, 1940.

Name of Disease.	North Auckland.	Central Auckland.	South Auckland.	Thames-Tauranga.	Taranaki.	East Cape.	Wellington-Hawke's Bay.	Central Wellington.	Nelson-Marlborough.	Canterbury.	West Coast.	Otago.	Southland.	Totals.
Scarlet fever	4	56	36	1	30	7	42	59	11	40	11	37	23	357
Diphtheria	80	55	49	10	14	12	41	84	5	2	..	9	6	367
Enteric fever—														
(*a*) Typhoid	7	20	8	6	1	5	3	1	1	2	..	..	..	54
(*b*) Paratyphoid	..	..	..	..	3	..	1	..	..	..	..	1	..	5
Tuberculosis—														
(*a*) Pulmonary	35	178	69	11	57	24	125	201	34	183	19	84	73	1,093
(*b*) Other	..	22	..	1	10	6	9	16	..	2	..	23	4	93
Cerebro-spinal meningitis	..	4	2	1	2	2	4	3	..	..	..	..	1	19
Poliomyelitis—														
(*a*) Paralytic	..	5	..	..	1	1	6	..	2	1	..	1	1	18
(*b*) Non-paralytic	..	..	..	..	..	..	..	..	..	2	..	2	..	4
Influenza	..	..	1	..	..	..	9	13	..	2	..	..	2	27
Erysipelas	1	83	19	1	25	8	42	88	6	31	..	23	12	339
Puerperal fever—														
(*a*) Following childbirth	..	23	18	1	8	4	13	9	1	30	1	9	11	128
(*b*) Following abortion or miscarriage	..	44	4	..	1	..	2	24	..	52	..	..	..	127
Eclampsia	2	17	..	1	6	6	5	5	1	13	..	9	4	69
Tetanus	..	3	2	2	..	3	1	..	..	1	..	1	..	13
Hydatids	..	2	..	..	2	1	13	6	..	12	..	..	..	36
Trachoma	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ophthalmia neonatorum	3	8	1	..	1	..	..	..	..	..	..	..	..	13
Lethargic encephalitis	1	..	..	..	..	..	2	..	..	1	..	..	..	4
Food poisoning	..	7	..	3	..	2	2	21	..	2	..	..	..	37
Bacillary dysentery	5	19	10	..	9	35	8	2	..	..	..	..	..	88
Undulant fever	..	5	3	..	1	1	8	1	..	2	..	..	1	22
Dengue fever	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Actinomycosis	..	1	1	..	1	..	1	..	..	2	..	..	..	6
Chronic lead poisoning	..	1	..	..	..	..	..	4	..	..	..	..	..	5
Beri-beri	..	2	..	..	..	..	..	..	..	..	..	..	..	2
Anthrax	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Anchylostomiasis	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Phosphorus poisoning	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	138	557	223	38	172	117	337	537	61	381	31	199	138	2,929

Table C.—Notifiable Diseases in New Zealand for Year ended 31st December, 1940, showing Distribution by Age and Sex.

Disease.	Under 1 Year.		1 to 5 Years.		5 to 10 Years.		10 to 15 Years.		15 to 20 Years.		20 to 25 Years.		25 to 30 Years.		30 to 35 Years.		35 to 40 Years.		40 to 45 Years.		45 to 50 Years.		50 to 55 Years.		55 to 60 Years.		60 to 65 Years.		65 to 70 Years.		70 to 75 Years.		75 to 80 Years.		80 Years and over.		Total Cases at all Ages.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Scarlet fever	1	..	33	27	62	73	24	45	12	16	4	9	9	13	1	8	1	3	2	..	2	..	2	2	2	4	..	1	1	..	..	..	..	..	..	..	156	201
Diphtheria	5	2	51	42	67	67	28	23	8	12	7	12	4	9	8	5	3	7	2	..	..	2	..	..	..	3	..	..	..	..	..	..	..	..	..	..	183	184
Enteric fever—																																						
(*a*) Typhoid	..	..	1	2	3	3	..	4	4	2	2	8	1	1	4	3	1	2	2	2	2	..	3	..	..	..	1	2	1	..	..	..	..	..	..	..	25	29
(*b*) Paratyphoid	..	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	3	2
Tuberculosis—																																						
(*a*) Pulmonary	..	..	4	..	9	7	10	8	54	43	86	91	100	85	75	58	69	39	65	31	41	26	43	16	49	11	20	11	17	6	5	3	5	3	1	2	653	440
(*b*) Other	1	..	3	1	7	2	2	5	9	3	7	3	10	9	3	2	1	5	2	1	4	2	..	2	2	2	1	1	..	..	..	1	2	..	..	..	54	39
Cerebro-spinal meningitis	1	..	2	1	6	1	1	..	2	..	2	..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16	3
Poliomyelitis—																																						
(*a*) Paralytic	..	..	3	..	2	3	2	1	1	..	2	1	..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	7
(*b*) Non-paralytic	..	..	1	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2
Influenza	..	1	1	3	1	1	1	1	..	..	..	..	1	1	1	..	3	..	2	1	1	2	1	1	1	..	..	..	1	2	..	..	..	..	..	..	14	13
Erysipelas	6	1	8	4	4	..	4	5	1	9	6	8	11	12	11	21	10	15	12	12	12	8	17	20	11	21	12	23	15	10	8	9	3	3	6	1	157	182
Puerperal fever—																																						
(*a*) Following childbirth	..	..	..	..	..	..	..	..	..	15	..	30	..	48	..	21	..	10	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	128
(*b*) Following abortion or miscarriage	..	..	..	..	..	..	..	..	..	12	..	23	..	43	..	27	..	14	..	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	127
Eclampsia	..	..	..	..	..	..	..	..	..	7	..	17	..	19	..	18	.	4	..	3	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	69
Tetanus	..	..	1	..	3	..	..	1	1	..	..	1	..	..	..	..	..	..	1	..	1	..	1	..	..	2	..	..	..	..	1	..	..	..	..	..	9	4
Hydatids	..	..	1	..	1	..	3	1	3	1	1	5	1	2	4	..	2	..	2	..	2	..	1	1	1	..	1	..	1	1	..	1	..	..	..	..	24	12
Trachoma	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ophthalmia neonatorum	9	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	4
Lethargic encephalitis	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	3	1
Food poisoning	..	..	1	..	2	..	..	1	2	..	2	2	2	1	1	..	..	1	5	5	1	3	2	1	..	..	..	1	1	..	1	..	1	1	..	..	21	16
Bacillary dysentery	3	2	11	7	9	8	4	1	..	1	4	1	1	2	2	2	2	3	..	1	..	3	1	1	5	3	..	2	3	2	2	..	1	1	..	..	48	40
Undulant fever	..	..	..	1	2	..	..	..	1	..	2	..	..	2	2	1	2	..	1	1	3	..	1	..	..	1	..	..	..	1	..	..	1	..	..	..	15	7
Dengue fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Actinomycosis	..	..	..	..	1	..	..	..	1	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	5	1
Chronic lead poisoning	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	5	..
Beri-beri	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Anchylostomiasis	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Phosphorus poisoning	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	26	10	122	89	182	166	79	95	100	122	128	211	143	250	114	166	97	105	97	70	70	47	73	45	73	47	36	41	41	22	17	14	13	8	7	3	1,418	1,511
																																					2,929	

TABLE D.—MAORIS: NOTIFICATIONS OF CASES OF NOTIFIABLE DISEASES FOR YEAR ENDED 31ST DECEMBER, 1940.

Name of Disease.	North Auckland.	Central Auckland.	South Auckland.	Thames-Tauranga.	Taranaki.	East Cape.	Wellington-Hawke's Bay.	Central Wellington.	Nelson-Marlborough.	Canterbury.	West Coast.	Otago.	Southland.	Totals.
Scarlet fever	..	..	1	..	..	..	..	..	..	..	..	..	..	1
Diphtheria	19	1	2	..	4	2	2	..	1	1	..	..	..	32
Enteric fever—														
(*a*) Typhoid	6	4	4	..	5	38	9	..	..	1	..	..	..	67
(*b*) Paratyphoid	..	..	..	..	..	..	1	..	..	..	..	..	..	1
Tuberculosis—														
(*a*) Pulmonary	155	14	65	6	43	62	63	16	9	11	1	1	1	447
(*b*) Other	5	1	..	..	..	16	7	..	..	..	..	..	..	29
Cerebro-spinal meningitis	..	..	..	..	..	1	..	..	..	..	..	..	..	1
Poliomyelitis—														
(*a*) Paralytic	..	..	..	..	..	..	1	..	..	..	..	..	..	1
(*b*) Non-paralytic	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Influenza	..	..	..	..	..	..	3	..	..	..	..	..	..	3
Erysipelas	2	1	1	..	..	6	2	1	..	..	..	..	..	13
Puerperal fever—														
(*a*) Following childbirth	..	1	..	..	..	4	4	..	..	..	..	..	..	9
(*b*) Following abortion or miscarriage	..	..	..	..	..	..	1	..	..	..	..	..	..	1
Eclampsia	..	..	..	..	..	3	..	..	..	..	..	..	..	3
Tetanus	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hydatids	..	..	..	..	..	5	3	..	..	..	..	..	..	8
Trachoma	7	..	9	2	..	..	5	..	1	..	..	..	..	24
Ophthalmia neonatorum	1	..	..	..	..	..	1	..	..	..	..	..	..	2
Lethargic encephalitis	..	..	..	..	..	1	..	..	..	..	..	..	..	1
Food poisoning	..	..	..	..	..	1	..	..	..	..	..	..	..	1
Bacillary dysentery	6	..	4	..	1	120	3	3	..	..	..	..	..	137
Undulant fever	..	..	1	..	..	..	1	..	..	..	..	..	..	2
Dengue fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Actinomycosis	..	..	..	..	..	..	1	..	..	..	..	..	..	1
Chronic lead poisoning	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Beri-beri	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ahthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Anchylostomiasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Phosphorus poisoning	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	201	22	87	8	53	259	107	20	11	13	1	1	1	784

TABLE E.—VENEREAL-DISEASE CLINICS: CASES TREATED DURING THE YEAR ENDED 31ST DECEMBER, 1940.

—	Auckland.		Wellington.		Christchurch.		Dunedin.		Totals.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Number of persons dealt with for first time and found to be suffering from—										
Syphilis	63	37	77	58	12	8	22	8	174	111
Soft sore	..	..	..	..	9	..	2	..	11	..
Gonorrhœa	474	118	310	53	286	79	78	89	1,148	339
No venereal disease	160	36	99	110	41	18	35	..	335	164
Total attendance of persons suffering from—										
Syphilis	1,426	1,850	3,500	1,679	874	321	409	344	6,209	4,194
Soft sore	..	..	..	..	64	..	2	..	66	..
Gonorrhœa	12,989	1,385	14,254	4,336	9,681	2,889	2,987	2,987	39,911	11,597
Number of persons suffering from—										
Syphilis	758	736	1,027	872	251	132	122	118	2,158	1,858
Gonorrhœa	1,262	711	1,118	394	854	529	450	539	3,684	2,173

SECTION 3.—WORKING OF THE SALE OF FOOD AND DRUGS ACT.

TABLE 1.—SHOWING SAMPLES RESPECTIVELY OF MILK AND OTHER FOODSTUFFS TAKEN AND DEALT WITH DURING THE YEAR ENDED 31ST DECEMBER, 1940.

Health District.	Number of Samples taken.		Number of Vendors.		Samples not complying.					
					Number of Samples.		Number of Warnings issued.		Number of Prosecutions recommended.	
	Milk.	Other.	Milk.	Other.	Milk.	Other.	Milk.	Other.	Milk.	Other.
North Auckland	120	39	78	38	4	8	6	8	..	..
Central Auckland	3,654	521	3,344	460	95	34	86	34	9	..
South Auckland	1,283	238	1,122	209	48	55	41	55	7	..
Thames-Tauranga	84	8	67	8	..	..	..	..	..	..
Taranaki	278	1	130	1	3	..	2	..	6	..
East Cape	173	22	153	14	12	4	4	2	..	..
Wellington - Hawke's Bay	740	134	383	..	51	13	8	1	18	2
Central Wellington	1,691	183	1,500	128	86	24	21	4	10	9
Nelson-Marlborough	110	40	79	32	1	3	1	..	..	..
Canterbury	1,690	223	1,604	223	181	42	147	28	19	11
West Coast	391	88	377	82	14	15	9	9	3	5
Otago	1,430	128	754	37	106	9	44	1	3	2
Southland	310	53	139	31	110	9	19	..	4	..
Totals	11,954	1,678	9,730	1,263	711	216	348	142	79	29

TABLE 2.—SHOWING INSPECTION OF PREMISES ENGAGED IN SELLING OR MANUFACTURING FOODSTUFFS DURING THE YEAR ENDED 31ST DECEMBER, 1940.

(Not inclusive of Inspections performed by Officers employed by Local Authorities.)

Health District.	Inspections.		
	Number of Premises inspected engaged in manufacturing Foodstuffs.	Number of such Premises where Defects occurred.	Number of Instances Goods were "seized" or "destroyed."
North Auckland	414	63	..
Central Auckland	627	63	1
South Auckland	1,342	292	12
Thames-Tauranga	264	38	2
Taranaki	560	65	1
East Cape	799	104	1
Wellington - Hawke's Bay	1,668	146	31
Central Wellington	536	360	18
Nelson-Marlborough	556	32	6
Canterbury	1,137	77	.
West Coast	654	64	3
Otago	1,257	169	5
Southland	620	109	1
Totals	10,434	1,573	81

T. R. RITCHIE,
Director, Division of Public Hygiene

PART III.—SCHOOL HYGIENE.

I have the honour to submit the annual report of the Division of School Hygiene for the year 1940.

Staff.

At the end of the year the medical personnel comprised thirteen full-time and eight half-time School Medical Officers. The half-time officers, drawn from the ranks of married or single medical women, are giving splendid service at a time when it is impossible to maintain complete full-time strength. In addition, the four Medical Officers of Health at East Cape, Taranaki, North Auckland, and Nelson-Marlborough act as School Medical Officers in their areas.

Figures relating to Work accomplished in 1940.

The following summary serves to indicate the extent of work accomplished during the school period February to December, 1940 :—

Schools inspected—	
Of roll under 100	729
Of roll 100 to 500	366
Of roll over 500	108
Children examined—	
Complete examinations	61,225
Partial examinations	26,867
Number of children notified as defective	35,290
Number of addresses to school-children	362
Number of parents interviewed	13,429
Number of lectures or addresses to parents	83

Summary of Complete Examinations.

	European.	Maori.
Number of children examined	52,560	7,038
Percentage found to have defects	55·23	57·47
Percentage with defects other than dental	32·63	22·62
Percentage of children showing evidence of—		
Subnormal nutrition	4·23	1·36
Pediculosis	0·37	2·46
Uncleanliness	0·71	0·41
Skin—		
Impetigo	0·71	2·02
Scabies	0·53	12·48
Ringworm	0·15	0·06
Other skin-diseases	1·59	0·62
Heart—		
Organic disease	0·54	0·43
Functional disturbance	0·79	0·61
Respiratory	0·89	1·12
Total physical deformities	7·46	4·27
Mouth—		
Deformities of jaw or palate	2·69	0·51
Dental caries	30·95	42·15
Extractions of permanent teeth	6·24	2·47
Fillings	59·54	22·52
Perfect sets of teeth	4·52	13·26
Nose and throat—		
Nasal obstruction	2·12	0·60
Enlarged tonsils	19·06	10·58
Enlarged glands	7·72	2·13
Goitre—		
All degrees	13·74	8·68
Incipient	10·94	7·51
Small	2·54	0·91
Medium	0·22	0·17
Large	0·04	0·09
Eye—		
External eye-disease	1·79	0·91
Total defective vision	3·72	1·52
Corrected	2·11	0·27
Uncorrected	1·61	1·15
Ear—		
Otorrhœa	0·17	0·54
Defective hearing	0·35	0·28
Defective speech	0·54	0·06
Mental—		
Feeble-mindedness	0·26	0·09
Epilepsy	0·04	0·03
Other nervous defects	0·15	Nil
Tuberculosis—		
Total	0·03	0·20
Pumonary	Nil	0·09
Other tissues	0·03	0·11

Kindergarten and Pre-school Children.

There is great need for work in this age-group. The School Medical Officers in their areas continued to examine kindergartens, parents being present with their children in most cases. They also saw numbers of pre-school children brought by parents to the primary-school examinations. The work done reveals a high incidence of defect. Most of this defect should be preventable. There is need for instruction among parents on infant and toddler diet, on the necessity for earlier bedtime in some and extra daytime rest in other cases, and on the duty of caring for teeth at these ages.

During the latter half of the year the Department decided to endeavour to cover the gap in child welfare that occurs between the ages of one and five years. The agencies in this field were the school doctors in the extremely limited manner already described, and the Plunket Society nurses, who in a few pre-school clinics gave nursing advice only to mothers. This age-group in the mass was untouched. It was finally agreed that the Department and Plunket Society should combine and open clinics staffed by school doctors and Plunket nurses, to be held at regular intervals in the Plunket rooms. Actually only one clinic operated by the end of the year, but plans are made for rapid development in 1941, and it is hoped systematically to extend clinics as rapidly as personnel allows.

Native Children.

Officers working in Maori areas continue to report better general physique among Maori children than among pakehas, coupled with less tonsillar and glandular enlargements, less goitres, less heart abnormalities, and fewer deformities of trunk and chest. There are more preventable troubles than among pakehas; more scabies and skin troubles, more discharging ears, more respiratory disease and dental caries. Trachoma does occur, but acute conjunctivitis outbreaks are more common in Maori schools, the common causative organism being *Haemophilis lacunatus* (B. of Morax-Axenfeld).

Dental clinics for Native children are badly needed, the teeth being very neglected and gingivitis extremely common. The need will be met partially as clinics become established at Native schools. About half of the Maori children in the land attend Education Board schools, and mostly do not attend the dental clinics provided. The problem is an economic one, of which a solution is urgently needed to combat the extensive caries in these Maori children.

Co-operation with Dental Hygiene Division.

School Medical Officers this year were asked to institute inquiries wherever a school was not receiving the benefit of a dental clinic, and to do all that lay in their power to stimulate interest in non-clinic areas. Some officers have definitely succeeded, and the purpose of very close co-operation with School Dental Officers generally is being fostered. All School Medical Officers will welcome the extension of dental-clinic work to cover Standards V and VI as soon as this is possible. From the north to the south of the land they report a rising percentage of dental defect in these classes, where the parents again become responsible for the care of their children's teeth. Dental defects are serious in candidates for entrance to the teaching profession, even although as children they attended dental clinics.

Already it has been pointed out that in pre-school ages, in school ages when not attending dental clinics, and post-dental clinic ages, New Zealand parents pay insufficient attention to teeth. One officer reports that it was a pleasure to look into the mouths of children attending schools with dental-clinic services, whereas the children attending clinicless schools exhibited, with few exceptions, extensive caries, foul breath, and a general lack of vigour. Another remarks that in one area, the month during which a bridge from an outlying district into a town was opened could be related to a rise in dental caries. Too easy access to sweets, improper feeding, as seen by inspection of school lunches, together with lack of proper cleaning, are factors in dental caries within the control of parents.

Medical Examination of Entrants to Teaching Profession.

The following is a summary of the examination of 1,073 applicants for entrance to training college last year:—

Number of applicants examined	1,073
Number with any defect of vision	184
Number wearing glasses	157
Number with defective hearing	6
Number with any past or present aural disease	15
Number with nose defect	19
Number with throat defect	54
Number with enlarged thyroid	146
Teeth—	
Number with any caries when seen	125
Number with one artificial plate	85
Number with upper and lower plates	30
Number with malocclusion	9
Number with any heart or lung condition	15
Number deferred for immediate treatment	157
Number considered as excellent	199
Number considered as average	691
Number considered as fair	132
Number accepted	1,014
Number deferred for further treatment	38
Number rejected	21

It is proposed next year to extend the scope of the teacher entrance medical examination to include radiology of the chest. Arrangements to this end have been made.

Nutrition.

As in past years, School Medical Officers continue to report dissatisfaction with the nutrition of our children. It is not that there is much variation in the subnormal nutrition reported over the whole country, for this remains low. It is rather that the percentage of average and just below average children persists as the bulk finding, while so few are graded annually as excellent. That it is within the power of parents to alter this state of affairs is evident from the almost universal findings of the Medical Officers of dietary deficiencies and mistakes, dental caries, insufficient sleep, too much radio and restlessness, and poor ventilation of bedrooms.

That the parental dietary control is commonly at fault is proven by the benefits derived from supplementing that diet at schools as reported below *re* milk in schools. Again, one officer in the North and one in the South Island had given at a school a daily dose of cod-liver oil, and the general health improved markedly. That extra rest is needed for children was proven by the officer in Christchurch, who arranged for primers twenty-minute rest periods after lunch before afternoon school, the teachers getting dividends in fitter, brighter children.

A positive picture is painted by Great Barrier Island school-children. These children live, eat, and sleep more naturally. Candy-shops and cinemas are very rare mainland pleasures. They have a high percentage of fish and sea foods in a more natural diet. There is generally a high standard of nutrition and a good condition of the teeth compared with children of the mainland.

Country parents should heed the findings of the year—as reported of past years—that nutrition is better in town than in country children. There is in many areas almost twice the subnormal nutrition in small country schools as in town ones. Unfortunately, many country School Committees scorn the milk-in-schools scheme as unnecessary in rural areas ; the medical findings tell another story.

Milk in Schools.

Milk-consumption in schools continues satisfactorily. About 19 per cent. of the New Zealand school roll miss the daily ration, being still outside the scheme. The success of the scheme depends on the class-teacher's attitude. Most children who do not take milk can be persuaded to do so at school. Too frequently the child persuades the parent to write seeking exemption. To bring milk-consumption in schools nearer maximum level, parents require a better realization of the value of milk, so that the teacher is supported in his drive for full consumption. Teachers require to adopt a positive, active attitude towards the scheme and to give quiet yet efficient supervision *re* distribution and drinking ; School Medical Officers have been asked to take a lively interest in each individual school supply and consumption, and to help the scheme in any way opportunity provides or the need indicates. It is hoped to issue a pamphlet on milk to aid teachers in furthering milk-consumption.

The general impression of teachers and parents over the whole Dominion is favourable, dividends from milk-consumption being recorded in better health and brightness. Sixteen schools, including city, rural, and Maori types, in both Islands actually checked the weights, some against controls, and universally record advantages in favour of milk-drinkers. Some of the weighings were fortnightly, some monthly. The controlled weight-recording in every case shows additional gains for milk-takers, varying in amounts, but never less than over 1 lb. to the advantage of the milk-consumer in the year. Wherever this accurate type of record has been kept the teachers are able to record not only weight gains, but are also emboldened to ascribe to the milk scheme additional benefits in improved school health and attendance, less fatigue especially among weaker children, increased playground activity, and generally more alertness in the scholars.

Health Camps.

Health camps are reported on elsewhere. Most children improve in camp, and most maintain this improvement on return to their homes. After a while a proportion revert to below-par physique or health. Follow-up work shows that adult health education is needed, the reversions being due to overcrowding or the parents' refusal to continue the camp routine that wrought the benefit—regular balanced meals of wholesome foods, sufficient rest and sleep, adequate sunshine by day and fresh air by night. Permanent health camps provide time after time that stimulus towards better health missing in the home. Holiday health camps are of too short period to do more than provide a change and temporary benefit in most cases.

Tuberculosis Contacts.

As in the past, child contacts of tuberculous contacts attending school have been given special supervision, arrangements for X-rays of the chest and specialist advice being made as required.

This work is to be extended. During the latter half of the year arrangements have been made to include the complete tuberculous household within the scope of preventive and educative control. This work will begin next year, and will be reported in detail then. A new departure this year was the X-raying of every Maori secondary-school pupil as a tuberculous preventive measure. A few hidden cases were detected.

Diphtheria Immunization.

The School Medical Service, in the latter half of the year, assumed the task of offering, as a routine measure, diphtheria protection to children under seven years of age. This work will become effective in 1941, when details of the scheme will be given. Meantime, during the present year a considerable amount of immunization work was accomplished. Of pre-school children, 1,279 were given a course of anatoxin injections. Of school-children, 6,449 were accepted and underwent the protective course.

An outbreak of diphtheria at Onerahi proved stubborn and difficult to control by the normal isolation and swabbing methods. Mass immunization of pre-school and school children quickly brought control and termination of the epidemic.

Health Education.

School Medical Officers have lectured widely to children, to parent groups and gatherings, to Maori groups, to mothers' meetings, women's institutes, School Committees, and teachers' training colleges. One district sponsors mothercraft classes, another a teaching clinic in a Maori pa. Officers are alive to the need for adult and child health education.

Plans to enter the field of health education in a systematic way have been elaborated during the latter part of the year, and it is hoped to use the air, the printed word, films, and exhibits in furthering health education in 1941.

H. B. Turbott,
Director, Division of School Hygiene.

PART IV.—HOSPITALS.

I have the honour to submit the annual report of the Division of Hospitals.

Military Hospitals.

In order to cope with returning sick and wounded soldiers, the Department has planned and erected the following hospitals: At Auckland a 150-bed hospital on the Auckland Domain, with operating-theatres and other services; at Wellington a 100-bed attached to the main hospital; at Christchurch a 62-bed block attached to the Burwood Hospital. These three buildings are very near completion. In Dunedin a contribution was made toward the cost of providing additional accommodation at the Caversham Infirmary.

In the cases of Christchurch and Dunedin, medical and chronic cases are to be transferred to the above-mentioned buildings in order to provide accommodation in the main hospitals for returned soldiers. In addition, the Department was consulted about the hospitals for various military camps and the military hospital at Suva, and consultations were also held with Military Authorities on the fitting-out of the hospital ship.

Tuberculosis Accommodation.

A 32-bed institution has been planned and should shortly be erected at Cashmere Hills; and the Waipawa Hospital Board is about to erect at Pukeora Sanatorium additional buildings for th treatment of returned soldiers, the charges on part of the loan for this being guaranteed by the Government.

Gymnasia and Plaster-rooms.

A new gymnasium and a new plaster department have been provided at Wellington and Christchurch Hospitals. A new gymnasium has been built at Dunedin Hospital.

Departmental Military Hospitals.

In addition to the above buildings, which will be staffed and administered by Hospital Boards, the Department is prepared to take about 150 convalescent soldiers at the Queen Mary Hospital, Hanmer; and plans have been prepared for the erection of a 150-bed convalescent hospital at Rotorua. The nurses for the latter institution will at first be housed in Arawa House, which has been generously loaned to the Government by Sir Ernest Davis.

The first contract has been let for the construction of a permanent 120-bed hospital at Rotorua which will eventually replace the Government Sanatorium, but which will, if necessary, also house convalescent returned soldiers.

A clearing hospital of 300 beds is rapidly nearing completion on Aotea Quay, Wellington, in which returning soldiers may be examined and boarded and held for a few days pending transfer to other institutions.

Maori Tuberculosis.

Recognizing that Maori tuberculosis presents a special problem in certain districts, the Government has offered in some cases to pay the cost of, or, in other cases, to contribute to the cost of, the erection of buildings to accommodate Maori tuberculosis cases in the following Hospital Board districts: Mangonui, Whangaroa, Bay of Islands, Kaipara, Hokianga, Tauranga, and Waiapu. The Government's offer has been accepted by all these Boards except the Bay of Islands Hospital Board. Sites have been selected in each case, and the preparation of plans is in hand.

Civilian Hospital Accommodation.

There is still a definite shortage of hospital accommodation in the majority of the Hospital Board districts in New Zealand. While some Hospital Boards are making commendable efforts to overcome this shortage, others are showing some reluctance to meet their obligations.

The following are some of the principal schemes undertaken or completed during the year:—

North Auckland District.

The Whangaroa Hospital Board hopes shortly to proceed with the building of a new hospital at Kaeo.

A new ward block has been planned for the Kawakawa Hospital, for the Bay of Islands Hospital Board.

Progress with the urgently-needed building programme for the Kaipara Hospital Board has been held up by a controversy about the site for the new buildings.

Central Auckland District.

Auckland Hospital Board: At the Epsom Infirmary site some addition has been made to the temporary tuberculosis shelters, work has been commenced on the foundations of a new six-floored 250-bed block, while additions to the nurses' home of this institution should be commenced in the near future.

Some relief was given to the serious deficiencies of accommodation at Auckland Hospital by the generous offer of Sir Ernest Davis to loan Cargen as a nurses' home, but a comprehensive rebuilding plan for Auckland Hospital is long overdue.

South Auckland District.

Waikato Hospital Board: Plans have been completed for, and building should shortly commence of, an infectious-disease ward at the Waikato Hospital, a Superintendent's house at this hospital, a maternity hospital at Taupo, and additions to the nurses' home at Te Kuiti.

Plans are being prepared for extensive additions to the nurses' home at Hamilton and for the complete rebuilding of Rotorua Hospital.

Bay of Plenty District.

The Tauranga Hospital Board is erecting a tuberculosis ward, additions to the nurses' home, and also a maternity hospital at Katikati.

The Bay of Plenty Hospital Board has completed an addition to its maternity ward.

The Opotiki Hospital Board has not as yet made any progress with its building programme.

Hawke's Bay District.

The Cook Hospital Board has completed the additions to the nurses' home and is about to commence building a new tuberculosis block.

The Hawke's Bay Hospital Board is building a teaching block, a new medical ward, and extensions to the massage department, while work should begin shortly on a new X-ray block.

At Hastings a new children's ward and a new nurses' home are in course of erection. Extensive additions to the Waipukurau Hospital and nurses' home are in progress for the Waipawa Hospital Board.

Taranaki District.

The Taranaki Hospital Board is erecting a maternity hospital at Waitara and a maternity ward at New Plymouth.

The Stratford Hospital Board is making additions to its boilerhouse and laundry and nurses' home.

Wellington District.

Wanganui Hospital Board: Works in progress are a new nurses' home and additions to the hospital at Raetihi; also a new laundry and the remodelling of Taihape Hospital.

Palmerston North Hospital Board: The new isolation ward is being erected. Work on the additions to the nurses' home is about to begin. A proposal to erect an out-patient department has been approved by the Board.

Wellington Hospital Board: A nurses' home for the new Hutt Hospital is nearing completion, but progress on the new 210-bed Hutt Hospital has been slow because of various factors.

At Wellington Hospital a new bulk store has been built, wards 5 and 6 were remodelled, the plaster and operating-theatre departments are being extended, and the Exhibition Hotel was purchased as a relief to the problem of nurses' accommodation. The excavations for blocks B, C, and D, of the Centennial block have remained in an unfinished state throughout the year.

Marlborough, Nelson, and West Coast Districts.

For the Marlborough Hospital Board additions and alterations have been made to the nurses' home and ward 1 and to Holmdale Maternity Home, while plans have been completed for a new administration and ward block.

The Nelson Hospital Board has almost completed maternity hospitals at Takaka and Collingwood, but progress with plans for the additions to Nelson Hospital has been slow.

The Westland Hospital Board has added to its maternity hospital.

The tuberculosis block has been completed for the Grey Hospital Board, and other works are contemplated.

Canterbury District.

The North Canterbury Hospital Board has adopted an extensive scheme for the remodelling of Christchurch Hospital, and has added a new boiler, additions to the nurses' home, and other facilities at Burwood; and additions are being made to Kaikoura Hospital and to the Essex Home. The additions to the nurses' home at Christchurch Hospital are nearing completion.

The South Canterbury Hospital Board has made additions and alterations to the Waimate Hospital, and plans have been completed for a new kitchen at Timaru Hospital.

Otago and Southland Districts.

The Otago Hospital Board has continued work on the additions to its nurses' home, and has almost completed plans for a new X-ray department and two additional wards.

The South Otago Hospital Board has added to its nurses' home, and is building a children's ward and a teaching suite at Balclutha Hospital.

The Waitaki Hospital Board has built a Superintendent's house, and is building additions to its nurses' home, boilerhouse, and laundry, and has completed plans for additional wards, operating-theatres, X-ray, massage, and out-patient blocks.

The Southland Hospital Board has almost completed a new children's ward at Gore Hospital, and has repaired the fire damage to the Kew Hospital.

Deaths under Anæsthetics.

The annual report for 1935 gave a summary of the deaths under anæsthesia for the previous five years. The following is the summary for the past six years:—

Total deaths under anæsthetic for year ending—	
31st December, 1940	31
31st December, 1939	37
31st December, 1938	26
31st December, 1937	34
31st December, 1936	35
31st December, 1935	31
Total deaths for six years	194

The total number of deaths under anæsthetic during the previous five-year period was 90.

Nature of Anæsthetic.	1935.	1936.	1937.	1938.	1939.	1940.	Total.
Chloroform	3	1	2	..	1	..	7
Chloroform and ether	6	8	3	2	4	7	30
Ether	4	4	6	1	3	3	21
Ethyl chloride and ether	6	7	5	2	3	6	29
Gas and oxygen	4	1	3	4	4	5	21
Avertin alone or followed by ether	2	2	1	1	3	1	10
Paraldehyde and ether	..	3*	..	..	..	1	4
Cyclopropane	..	..	..	..	2	2	4
Evipan	..	1	1	..	1	2	5
Morphine and hyposeine	..	..	..	1	..	..	1
Spinal with or without gas and oxygen	3	..	1	2	2	1	9
Nature of anæsthetic not stated	3	8	12	13	14	3	53
Total	31	35	34	26	37	31	194

Deaths under Anæsthetic, according to Age-groups.

Age.	1935.	1936.	1937.	1938.	1939.	1940.	Total.
0–5	3	4	3	4	8	5	27
6–10	1	7	2	3	5	2	20
11–20	6	3	2	3	3	5	22
21–30	4	4	3	2	6	2	21
31–40	3	2	2	3	2	6	18
41–50	4	4	6	3	7	2	26
51–60	2	4	4	5	2	4	21
61–70	3	3	5	1	3	3	18
Over 70	2	1	3	2	1	1	10
Age not stated	3	3	4	..	..	1	11

Location of Deaths under Anæsthetic.

Place.	Total Deaths under Anæsthetic in Six Years.	Place.	Total Deaths under Anæsthetic in Six Years.
Dental surgeries	6	Public hospitals—	
Doctors' surgeries.. ..	1	Timaru	7
Private hospitals	36	Waipukurau	3
Private houses	2	Rotorua	3
Maternity hospitals ..	1	Hastings	2
Public hospitals—		Oamaru	3
Auckland	16	Dannevirke	1
Wellington	25	Greymouth	2
Christchurch	18	Ashburton	3
Dunedin	18	Riverton	4
Hamilton	9	Gore	2
Palmerston North ..	6	Greytown	2
New Plymouth ..	5	Thames	1
Napier	3	Blenheim	1
Gisborne	5	Taihape	1
Invercargill	1	Kawakawa	1
Wanganui	6		

The table showing deaths according to age-groups was not given in previous returns. A definite number occurred in children during operations for tonsillectomy, correction of deformities, treatment of fractures, and other simple conditions. In the absence of fuller information it is impossible to give a complete analysis of the figures. It may be stated, however, that few of the deaths occurred during induction. In only a few cases did a toxic condition contribute to death.

R. A. Shore,
Director, Division of Hospitals.

PART V.—NURSING.

I have the honour to submit my annual report for the year ended 31st March, 1941.

During the past year, owing to the war and the subsequent calling up of nurses for overseas services, plus the retirement of several senior officers, a great deal of internal reorganization of staff has taken place. Every one concerned with these changes has wholeheartedly made every endeavour to overcome the difficulties presented.

The activities of the Nursing Council increased the work of the Division to a large extent, while additional work has also been involved in connection with the inauguration of the courses in occupational therapy and dietetics, and in assistance to hospitals in planning for sufficient staff to meet the needs of increasing bed states.

Obituary.

Miss M. Mangakahia and Miss M. O. Gould passed away during the year.

General Hospitals.

The usual inspection of hospitals has been carried out. A conference of general hospital training-school matrons was held at the time of the Registered Nurses' Association Conference. A report circulated to hospitals regarding a special study made by the Department of the teaching of dietetics to pupil-nurses was the basis of discussion at this meeting. The principal conclusion arrived at was the necessity for increased interest in and a knowledge of the subject both by pupil-nurses and registered staff.

The problem of securing adequate and efficient staff for maternity annexes of general hospitals was also discussed, and it was agreed that suitable nurses should be selected for midwifery training and that such nurses could then be used, if necessary, on the staff of the annex.

Though the Sister in charge of the annex requires to be a specialist and a permanent officer, the remainder of the trained staff should be rotated through this service, as is done with ward Sisters in the general hospital.

Additional classes of pupil-nurses have been taken on during the year in order to provide adequate staffing for the anticipated increased number of patients resulting from social security medical benefits and war casualties. In taking in such large classes there is a danger that the ratio of registered staff to pupil staff will fall too low. To ensure efficient nursing and teaching in a training-school it is necessary to maintain a ratio of 1 registered nurse to 2·5 pupil-nurses.

The block system of arranging the theoretical and practical instruction is now working successfully in two hospitals.

A. *Daily Average Occupied Beds for all Training-schools.*

31st December, 1932	3,981·72
31st December, 1933	4,059·30
31st March, 1935*	4,220·05
31st March, 1936	4,467·41
31st March, 1937	4,734·85
31st March, 1938	4,911·26
31st March, 1939	4,981·39
31st March, 1940	5,331·80
31st March, 1940	6,040·01

*Statistics changed from calendar to financial year.

B. *Total Nursing Staff for all Training-schools.*

	1932.	1933.	1934.	1935.	1936.	1937.	1938.	1939.	1940.
Total nursing staff ..	1,769	1,967	2,116	2,264	2,442	2,534	2,710	3,028	3,504
Total pupil nurses on staff	1,257	1,412	1,502	1,640	1,803	1,849	1,985	2,219	2,590
Total registered nurses on staff ..	512	555	614	624	639	685	725	809	914

C. *Total Number of Nurses Sitting and Passing State Examinations.*

	1932.	1933.	1934.	1935.	1936.	1937.	1938.	1939.	1940.
Number sitting ..	385	448	403	354	380	478	455	490	569
Number passing ..	272	338	280	262	315	366	364	374	458
Number obtaining partial passes ..	..	..	..	..	..	..	..	..	74

Obstetric Hospitals.

At the meeting of the Matrons of St. Helens Hospitals held during the year, it was agreed that a proportion of vacancies in each term should be reserved for those hospitals who wished to nominate selected nurses for midwifery training.

Refresher courses for obstetric nurses have been held in thirty centres during the year, and the attendance at these, on the whole, was satisfactory.

MATERNITY NURSES.

Registered Nurses.

	1932.	1933.	1934.	1935.	1936.	1937.	1938.	1939.	1940.
Number sitting ..	152	158	170	190	195	201	218	216	241
Number passed ..	143	148	108	180	189	193	207	212	232

Unregistered Nurses.

	1932.	1933.	1934.	1935.	1936.	1937.	1938.	1939.	1940.
Number sitting ..	35	43	33	34	43	36	46	43	48
Number passed ..	30	35	30	33	37	30	44	40	44

MIDWIVES.

Registered Maternity Nurses who are also Registered Nurses.

	1932.	1933.	1934.	1935.	1936.	1937.	1938.	1939.	1940.
Number sitting ..	45	48	53	57	58	55	54	49	48
Number passed ..	39	44	47	53	56	54	52	49	48

Registered Maternity Nurses who are not Registered Nurses.

	1932.	1933.	1934.	1935.	1936.	1937.	1938.	1939.	1940.
Number sitting ..	14	14	18	14	9	19	11	17	16
Number passed ..	11	12	13	13	7	17	10	15	12

POST-GRADUATE COURSE.

Two meetings of the Committee were held during the year. Twenty-one students completed the course; six undertook the work independently; fifteen had bursaries—viz., five Department of Health, one Plunket Society, and nine Hospital Boards. Of these, three took the course in medical social work, seven in public-health nursing, and eleven in hospital and nursing-school administration.

Since the passing of the social security legislation, the social significance of illness and disease has received more emphasis, and it is necessary for nurses wishing to take up social-work positions to receive special preparation. It is also important for nurses, especially those in senior and administrative positions, to be more conversant not only with legislative procedures, but with the social implications of illness. To this end a third course was introduced in 1940 in medical social work, three students successfully completing it, and at the same time additional instruction in social work and social legislation was made available to all of the students. As the need for trained medical social workers on hospital staffs becomes essential, Hospital Boards are asked to keep this special course in mind when granting bursaries. Students should also be selected to take the public-health-nursing course where Hospital Boards require staff for district nursing services, tuberculosis annexes or sanatoria, and out-patients departments.

Opportunity for more intensive practical and observation work was made possible by extending the course to seven months. A period of five weeks is now spent in various fields, and the value of this additional experience cannot be overestimated. It is gratifying to be assured of co-operation by social agencies, public-health nurses, and hospitals in this aspect of the work, as only by this means is success possible.

DISTRICT NURSES.

The number of district nurses employed by the Department is ninety-two.

Various aspects of the nurses' work have been extended this year. Diphtheria immunization has been increased, and additional responsibility in tuberculosis follow-up work has been assumed by the nurse. The results received so far are encouraging and promise well for the future.

Several conferences of district nurses have been held. They have proved an excellent method of staff education and can be used to advantage in maintaining uniform practices throughout the service.

NURSING EDUCATION.

In conjunction with the Nursing Education Committee of the Registered Nurses' Association, a study was made of the preparation of surgical dressings for wards and operating-theatres in general and obstetric hospitals and of ward technique in obstetric hospitals. Questionnaires were circulated and results summarized. The result of "preparation of ward dressings" was completed, submitted to medical opinion, and circulated to hospitals. The results of the other studies will be completed early this year.

The same Committee also arranged for a nursing case study to be the subject for competition by pupil-nurses, and "The Nursing of a Patient suffering from Chronic Heart-disease" was selected. This was the means of increasing the appreciation of such a method of learning in the nursing-schools.

TUBERCULOSIS.

It was felt that nurses engaged in tuberculosis work required further knowledge on the advances which have been made in this important branch of medicine and nursing, particularly in respect of the technique essential to prevent spread of infection to other patients and to staff. In view of this the Department arranged for a refresher course in tuberculosis nursing, which was held in November and extended over four days and a half (including three evening sessions). The keen interest shown was evident by the attendance of seventy, which included medical men and women.

Health of Nursing Staffs.

The study begun by the International Council of Nurses has been continued by the Department and has resulted in an increased interest being taken in this important subject.

The yearly questionnaire was circulated to all training-schools, and the answers show that all hospitals are now requiring a chest X-ray examination of pupil-nurses on admission, while the number carrying out subsequent X-ray and Mantoux tests is increasing. The incidence of minor illness is still high.

The National Emergency and Nursing Service.

The receipt of applications and the selection of suitable nurses for overseas service has involved increased work; over 1,200 applications have been received, and 192 nurses have been sent overseas, while 39 are serving in New Zealand military camps. In addition, there were a large number of New Zealand nurses overseas at the outbreak of war, many of whom have remained and are being used for military duties.

A special meeting of Matrons was held early in the year for the purpose of discussing various matters regarding the selection of nurses from hospital staffs for overseas service.

Miss E. M. Nutsey, Lady Superintendent of Auckland Hospital, was appointed as Matron-in-Chief of the New Zealand Army Nursing Service overseas, and took over her new duties at the end of the year. Miss E. M. Lewis, Matron of Wairau Hospital, Blenheim, was appointed Matron of the first New Zealand hospital ship.

A clearing hospital of 300 beds is being built at Aotea Quay, Wellington; patients from hospital ships will be discharged to this building before proceeding to their respective districts. As their duration of stay will be short, the staffing is to be undertaken by registered nurses who have retired or who are not engaged in regular occupation. Voluntary aids of the St. John and Red Cross Societies will supplement the staff.

Nurses and Midwives Registration Board.

The Nurses and Midwives Registration Board met three times during the year. The following members have retired: Miss E. P. Tennant, after twelve years' service; Miss E. M. Nutsey, upon her appointment to the New Zealand Army Nursing Service; and Miss Trotter, upon the expiration of her term of office. The Board is indebted to these members for their service so generously given. They have been replaced by Miss L. M. Banks, Matron, Palmerston North Hospital; Miss M. E. Lindsay, Matron, Timaru Hospital; and Miss I. G. Owen, Matron, Hastings Memorial Maternity Annexe.

A system whereby pupil-nurses may obtain a partial pass in the State Final Examination has been inaugurated this year. Approval has been given for additional hospitals to function as training-schools for nursing aids. There are now twenty-seven A Grade and seven B Grade general hospitals under the jurisdiction of the Board, as well as four midwifery, thirty maternity-training schools, and four schools for nursing aids.

Dietetics.

The course of training in dietary for registered nurses commenced this year. It is to be taken at the Home-science School of Otago University and at Dunedin Hospital, and will cover a period of two years.

Occupational Therapy.

The course for training in occupational therapy which has been established at Avondale Mental Hospital is working satisfactorily, and the students will shortly be ready to take up positions in hospitals. Bursaries have been given by the Government, Hospital Boards, and the Joint Council of the New Zealand Red Cross and the Order of St. John.

Acknowledgment.

In conclusion, I wish to express my gratitude for the loyal and helpful support given me not only from the nursing staff of the Department, but also from the various members of the other Divisions, the Matrons of public hospitals, and the nursing profession as a whole.

M. I. Lambie,
Director, Division of Nursing.

PART VI.—MATERNAL WELFARE AND MATERNITY SERVICES.

I have the honour to present my report for the year 1940.

During the year all the private hospitals and public maternity hospitals have been periodically inspected and reported upon by the Nurse Inspectors acting under the instructions and supervision of the Medical Officers of Health. These reports were all reviewed by me, and any additional action considered necessary was advised or taken. Most of the districts were visited and any special problems discussed with Medical Officers of Health and their officers.

Thirteen new maternity hospitals, two new medical and surgical hospitals, and ten new medical and convalescent hospitals were licensed, fourteen licenses were surrendered, and the license of one maternity hospital was revoked.

In addition to the above routine work, the following pamphlets were revised and reprinted: H.–Mt. 18, "Technique of Isolation, Medical Asepsis and Disinfection of Maternity Hospitals," and H.–Mt. 20, "The General Principles of Maternity Nursing, including the Management and Aseptic Technique of Labour." The Department also published a pamphlet, H.–Mt. 14, entitled "Maternity Exercises," which was the joint work of Professor Dawson, of the Otago Medical School and University, and Dr. Sylvia Chapman, Medical Superintendent of St. Helens Hospital, Wellington, to whom the thanks of the Department are tendered.

The year was marked by a material increase in the birth-rate, a fall in the maternal death-rate, and by an increasing demand on maternity-hospital accommodation.

Sections I, II, and III deal in detail with maternal welfare, maternity services, and private medical and surgical hospitals respectively.

SECTION I.—MATERNAL WELFARE.

Table I shows, for the period 1927 to 1940—

(1) The number of births for both Europeans and Maoris:
(2) The birth-rates per 1,000 of the population for both Europeans and Maoris:
(3) The European still-birth rates per 1,000 total births:
(4) The European neo-natal death-rates per 1,000 total births:
(5) The European still-birth and neo-natal death-rates combined:
(6) The percentage of first births to total births for the European population only:
(7) Maternal-mortality rates, including septic abortion, for both Europeans and Maoris:
(8) Maternal-mortality rates, excluding septic abortion, European and Maori:
(9) Death-rates from septic abortion, European and Maori.

The European death-rate from all puerperal causes for the whole period under review is set out in a graph on page 32, which also shows the variations from year to year in the various causes of death. Further details are given in Tables II and III.

The outstanding facts to be noted are a marked increase in the European birth-rate, which, from the lowest rate of 16·17 per 1,000 of the population in 1935, has risen to 21·19 in 1940; the increased birth-rate in 1940 accounted for 3,938 more births than occurred in 1939. Coincident with the rise in the birth-rate and an increase in the proportion of first births to total births, the death-rate from diseases and accidents of childbirth, pregnancy, and the puerperium has fallen to 2·93, and if septic abortion, which is not an obstetric problem, is excluded, the death-rate is 2·50, the lowest rates ever recorded in New Zealand. The death-rate from septic abortion has also fallen slightly.

The fall in the maternal death-rate from 2·95 in 1939 to 2·50 in 1940 is due to the reduction in the number of deaths from accidents of labour which include deaths from hæmorrhage, embolism, shock, and other accidents of childbirth, and in a reduction in the deaths from puerperal sepsis following childbirth.

Table III gives in further detail the causes of deaths occurring in 1940, grouped according to the new International Standard of Classification. This method of classification has not been adopted for Table II and the graph, as in the new classification deaths from embolism, thrombosis, puerperal pyelitis, and pyelonephritis not accompanied by puerperal sepsis, previously classified as accidents of labour or toxæmia, are now classified as puerperal infections. To adopt this classification and to include these in puerperal sepsis following childbirth for the graph and Table II would give an incorrect picture of the variations in these causes of death from year to year.

Table IV gives the numbers and rates of the maternal deaths of Maoris from 1930 to 1940 grouped as they are for Europeans in Table II.

European and Maori death-rate is 2·67. Owing to the widely-different obstetric standards of the two races, the combined maternal death-rate is of little value except for comparison with other countries having similar conditions.

Table I.—Births, Birth-rates, Still-birth Rates, Neo-natal Death-rates, and Maternal Death-rates.

——		1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.	1938.	1939.	1940.
Number of births	European	27,881	27,200	26,747	26,797	26,622	24,884	24,334	24,322	23,965	24,837	26,014	27,249	28,833	32,771
	Maori	1,495	1,845	2,216	2,124	2,312	2,745	2,948	2,981	3,251	3,630	3,971	3,693	4,116	4,265
Birth-rate per 1,000 population	European	20·29	19·57	19·03	18·83	18·45	17·12	16·63	16·51	16·17	16·64	17·29	17·93	18·73	21·19
	Maori	23·22	28·36	33·58	31·56	33·74	39·28	41·20	40·67	43·34	43·79	46·64	42·37	46·20	46·87
Still-birth rate per 1,000 total births	*	30·53	29·92	31·50	31·27	29·49	29·11	28·82	27·47	29·87	28·63	28·42	26·54	30·27	28·60
Neo-natal death-rate per 1,000 total births	*	21·94	22·65	19·59	21·18	19·83	18·49	19·92	20·80	19·55	19·99	20·24	21·44	19·67	20·09
Still-birth rate and neo-natal death-rate combined	*	52·47	52·57	51·09	52·45	49·32	47·60	48·74	47·27	49·42	48·62	48·66	47·98	49·94	48·69
Percentage of first births to total births	*	31·99	31·65	32·62	34·47	33·71	44·02	33·81	34·60	35·63	38·04	39·87	40·88	41·40	41·69
Total maternal mortality, including septic abortion (per 1,000 live births)	European	4·91	4·93	4·82	5·08	4·77	4·06	4·44	4·85	4·21	3·70	3·61	4·07	3·64	2·92
	Maori	8·70	13·55	5·87	9·89	6·92	7·65	8·14	6·04	7·38	5·51	6·55	5·41	4·62	4·69
Maternal mortality per 1,000 live births, excluding septic abortion	European	4·41	4·42	4·11	3·96	3·68	3·02	3·37	3·12	3·25	3·14	2·69	2·97	2·95	2·50
	Maori	†	†	†	9·42	6·92	7·65	7·46	5·03	6·46	4·96	5·79	5·41	4·13	3·99
Death-rate from septic abortion per 1,000 live births	European	0·50	0·51	0·1	1·12	1·09	1·04	1·07	1·73	0·96	0·56	0·92	1·10	0·69	0·43
	Maori	†	†	†	..	..	..	0·68	1·01	0·92	0·55	0·76	..	0·49	0·70

* European only. † Not available.

Table II.—Puerperal Deaths and Death-rate per 1,000 Live Births.

——		1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.	1938.	1939.	1940.
Puerperal sepsis following childbirth	No.	56	42	30	27	18	13	14	17	8	9	14	21	16	13
	Rate	2·01	1·54	1·12	1·01	0·68	0·52	0·58	0·70	0·33	0·36	0·54	0·77	0·55	0·40
Accidents of labour (hæmorrhages, shock, embolism, and accidents of childbirth not otherwise defined)	No.	35	30	39	36	31	30	29	19	24	25	12	29	42	28
	Rate	1·26	1·10	1·46	1·34	1·16	1·21	1·19	0·78	1·00	1·01	0·46	1·06	1·46	0·85
Toxæmia and eclampsia ..	No.	27	40	34	36	38	23	29	30	34	30	35	29	24	30
	Rate	0·97	1·47	1·27	1·34	1·43	0·92	1·19	1·24	1·42	1·20	1·35	1·06	0·83	0·92
Accidents of pregnancy (non-septic abortion and ectopic gestation)	No.	5	8	7	7	11	9	10	10	12	14	9	2	3	11
	Rate	0·18	0·29	0·26	0·26	0·41	0·36	0·41	0·41	0·50	0·57	0·34	0·07	0·11	0·34
Total maternal deaths (excluding septic abortion)	No.	123	120	110	106	98	75	82	76	78	78	72	81	85	82
	Rate	4·41	4·42	4·11	3·96	3·68	3·02	3·37	3·12	3·25	3·14	2·69	2·97	2·95	2·50
Septic abortion—															
Married women	No.	14	14	19	26	26	24	16	29	17	13	16	20	11	9
Single women	No.				4	3	2	10	13	6	1	7	10	9	5
Totals		14	14	19	30	29	26	26	42	23	14	23	30	20	14
Rate		0·50	0·51	0·71	1·12	1·09	1·04	1·07	1·73	0·96	0·56	0·92	1·10	0·69	0·43

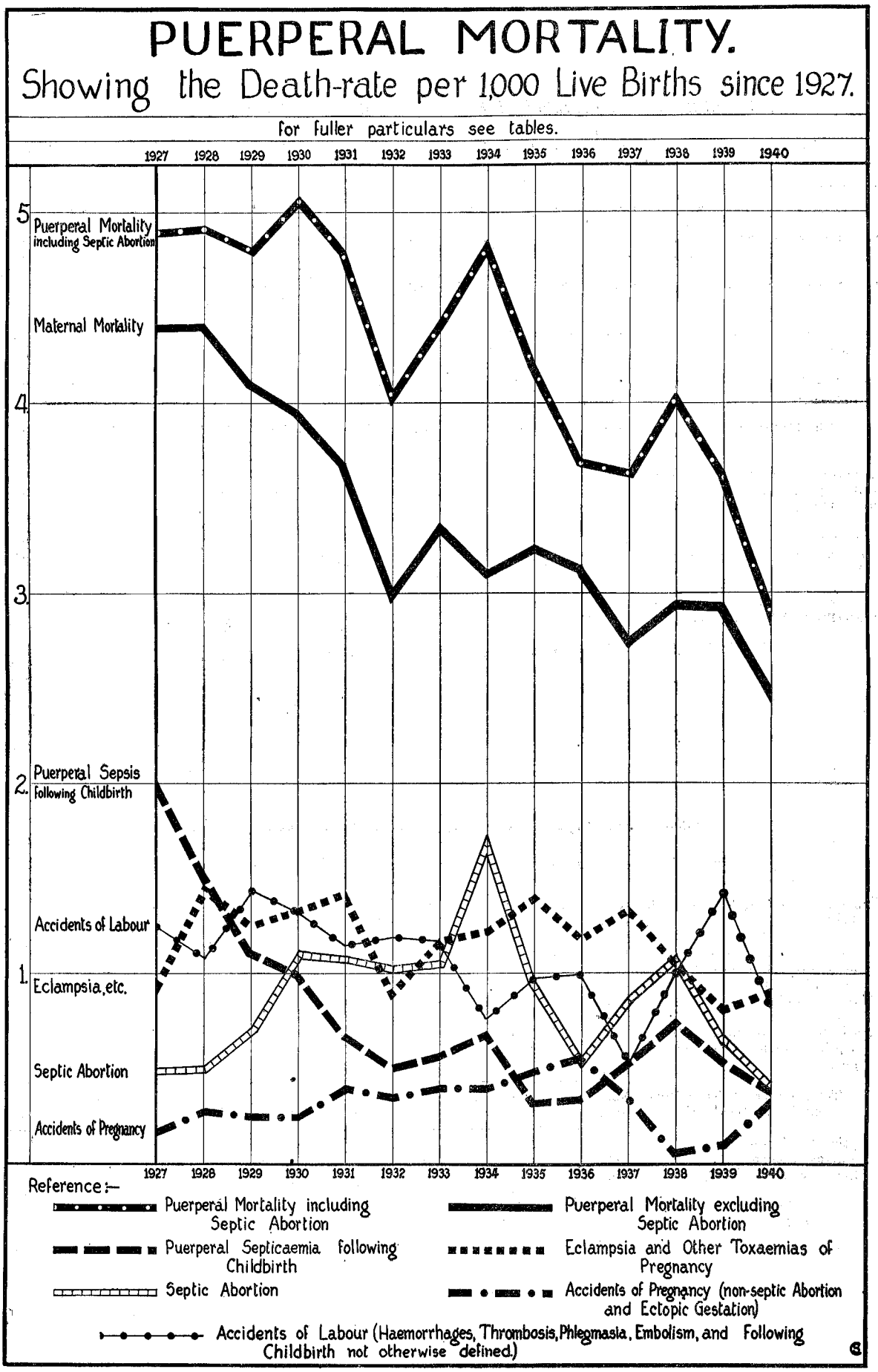
PUERPERAL MORTALITY.
Showing the Death-rate per 1,000 Live Births since 1927.
for fuller particulars see tables.
1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940
5
4
3
2
1
Puerperal Mortality including Septic Abortion
Maternal Mortality
Puerperal Sepsis following Childbirth
Accidents of Labour
Eclampsia, etc.
Septic Abortion
Accidents of Pregnancy
Reference:—
Puerperal Mortality including Septic Abortion
Puerperal Mortality excluding Septic Abortion
Puerperal Septicaemia following Childbirth
Eclampsia and Other Toxaemias of Pregnancy
Septic Abortion
Accidents of Pregnancy (non-septic Abortion and Ectopic Gestation)
Accidents of Labour (Haemorrhages, Thrombosis, Phlegmasia, Embolism, and Following Childbirth not otherwise defined.)

Table III.—Diseases of Pregnancy, Childbirth, and the Puerperal State, 1940.
(Grouped in accordance with the new International System of Classification.)

Cause.		Number of Deaths.	Death-rate per 1,000 Live Births.
Post-abortive infection—			
(*a*) Spontaneous, therapeutic, or of unspecified origin with mention of pyelitis	4		
(*b*) Spontaneous, therapeutic, or of unspecified origin without mention of pyelitis	8		
(*c*) Self-induced abortion	1		
(*d*) Induced by persons unknown	1		
	—	14	0·43
Abortion without mention of septic conditions—			
(*a*) Spontaneous, therapeutic, or of unspecified origin with mention of hæmorrhage	3		
(*b*) Spontaneous, therapeutic, or of unspecified origin with mention of toxæmia	4		
(*c*) Spontaneous, therapeutic, or of unspecified origin without mention of hæmorrhage or toxæmia	1		
	—	8	0·24
Ectopic gestation—			
(*b*) Without mention of infection		3	0·09
Toxæmias of pregnancy (deaths before delivery)—			
(*a*) Eclampsia of pregnancy	7		
(*b*) Albuminuria and nephritis of pregnancy	2		
(*c*) Acute yellow atrophy of liver (during pregnancy)	1		
(*d*) Other toxæmias of pregnancy	7		
	—	17	0·52
Other diseases and accidents of pregnancy (deaths before delivery)		2	0·06
Hæmorrhage of childbirth and the puerperium—			
(*a*) Placenta prævia during childbirth	2		
(*c*) Other and unspecified hæmorrhages of childbirth	8		
	—	10	0·31
Infection during childbirth and the puerperium—			
(*a*) Puerperal pyelitis and pyelonephritis	1		
(*b*) General and local puerperal infections	13		
(*c*) Puerperal thrombophlebitis	6		
(*d*) Puerperal embolism and sudden death	2		
	—	22	0·67
Puerperal toxæmias—			
(*a*) Puerperal eclampsia	8		
(*b*) Puerperal albuminuria and nephritis	1		
(*d*) Other puerperal toxæmias	4		
	—	13	0·40
Other accidents of childbirth—			
(*a*) Lacerations, rupture, or other trauma of pelvic organs	2		
(*b*) Other accidents of childbirth	4		
	—	6	0·18
Other or unspecified diseases of childbirth		1	0·03
Totals		96	2·93

Table IV.—Maori Puerperal Deaths and Death-rates for the Eleven Years 1930–40, inclusive.

Causes of Death.	1930.		1931.		1932.		1933.		1934.		1935.		1936.		1937.		1938.		1939.		1940.	
	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.
Puerperal sepsis following childbirth	5	2·35	5	2·16	5	1·82	7	2·37	3	1·01	7	2·15	6	1·65	4	1·01	6	1·62	3	0·73	6	1·41
Accidents of labour (hæmorrhage, thrombosis, phlegmasia, embolism, and following childbirth not otherwise defined)	12	5·65	9	3·89	14	5·10	14	4·75	8	2·68	10	3·07	12	3·31	13	3·27	10	2·70	12	2·92	7	1·64
Toxæmia, albuminuria, and eclampsia	..	..	..	..	1	0·36	1	0·34	..	..	1	0·30	..	..	1	0·25	2	0·54	2	0·49	1	0·23
Accidents of pregnancy	3	1·41	2	0·87	1	0·36	..	..	4	1·34	3	0·92	..	..	5	1·26	2	0·54	..	..	3	0·70
Total maternal causes (excluding septic abortion)	20	9·42	16	6·92	21	7·65	22	7·46	15	5·03	21	6·46	18	4·96	23	5·79	20	5·41	19	4·13	17	3·99
Septic abortion	..	..	..	..	..	..	2	0·68	3	1·01	3	0·92	2	0·55	3	0·76	..	..	2	0·49	3	0·70

CÆSAREAN SECTION.

Table V gives details of 238 deliveries by Cæsarean Section, of which one was a Maori, representing 0·71 per cent. of the total European deliveries as compared with 0·69, 0·73, 0·59, 0·64, 0·59, 0·53, and 0·44 in the seven previous years. The case mortality for mothers was 4·62 per cent., as compared with 6·40, 4·96, and 7·64; and the infant mortality was 16·82, as compared with 18·23, 14·85, and 21·65 in the three previous years.

Obstructed labour was the reason given for operating on 146 patients. Of these, 62 were stated to have contracted pelvis and 84 other obstructions without mention of contracted pelvis. Eight of the multiparæ had been delivered by Cæsarean Section in one or more previous pregnancies. The causes of obstruction given included fibroids, 6; breach, 6; brow and face presentation, 5; persistent occipito posterior, 1; transverse presentation, 1; prolapsed cord, 1; dermoid cyst, 2; ovarian cyst, 2; ectopic kidney, 2; rigidity of cervix, 1; failed forceps, 2 (one of these mothers died and the infant was still-born). The reason for one operation was a combination of obstruction with toxæmia.

The reasons for the operations in groups III to VI and the results are shown in the table. Eight of the eleven deaths were attributable to the conditions for which the operations were undertaken and three to post-operative sepsis. These latter are included in the recorded deaths from puerperal sepsis following childbirth.

The operations in Table VII were for the following conditions: 2 cases of pulmonary tuberculosis, 3 of diabetes, 3 of heart-disease, 1 asthma complicated by toxæmia, 1 bilateral hydronephrosis, 1 carcinoma of the cervix, 1 uterine inertia, 1 ruptured varicose vein on the surface of the uterus (died). Results to mothers and infants: 1 mother died, 3 infants still-born, 2 died.

Table V.—Cæsarean Section, 1940.

Group.	Reason for Operation and Parity.	Number of Cases.	Number of Deaths.		Cause of Deaths of Mothers.
			Infants.	Mothers.	
I	Contracted pelvis (1 para, 28; 2 para, 20; 3 para, 8; 4 para, 1; 5 para, 1; not stated, 4)	62	2	..	..
II	Obstructed labour (not attributed to contracted pelvis), (1 para, 51; 2 para, 16; 3 para, 7; 5, 6, and 8 para, 1 each; not stated, 7)	84	3	2	1 sepsis, 1 shock following failed forceps.
III	Placenta prævia (1 para, 14; 2 para, 4; 3 para, 7; 4 para, 4; 7 para, 2; 8 para, 1; 9 para, 2; not stated, 1)	35	12	1	Hæmorrhage.
IV	Accidental hæmorrhage (1 para, 5; 2 para, 3; 3 para, 1)	9	7	3	1 sepsis, 2 hæmorrhage.
V	Eclampsia (1 para, 4; 3 para, 4)	8	5	2	Eclampsia.
VI	Other toxæmias of pregnancy (1 para, 17; 2 para, 4; 5 para, 2; 6 para, 1; not stated, 3)	27	6	2	1 sepsis, 1 hyperemesis.
VII	Other conditions (1 para, 7; 2 para, 2; 5 para, 2; 7 para, 1; 11 para, 1)	13	5	1	Hæmorrhage from ruptured vein on surface of uterus.
	Totals	238	40	11	

SECTION II.—MATERNITY SERVICES.

Maternity services provided in 1940 consisted of 285 maternity hospitals providing 1,631 beds. Four of the maternity hospitals are State (St. Helens) hospitals, 79 public hospitals or maternity annexes controlled by Hospital Boards, and 202 private (licensed) maternity hospitals, 22 of these being subsidized by Hospital Boards.

St. Helens Hospitals.—The table giving details of the work of the four St. Helens Hospitals, which was previously included in the annual report, has been omitted owing to the necessity of conserving paper. A less-detailed survey is shown as group I, Table VI. These hospitals' main function is to give an extended training to maternity nurses to qualify them for the more responsible work of midwives. The details of this work are given in the report of the Director of the Division of Nursing.

In addition to the hospital services, 315 midwives and maternity nurses entered into contracts under Part III of the Social Security Act to provide either full-time or part-time domiciliary services. During the year these nurses attended 2,335 patients. Of these nurses, 275 attended under 10 patients each, 32 attended from 10 to 14, and 13 attended over 15 patients. In addition to the above ordinary services, 469 patients were delivered in general medical and surgical hospitals.

Table VI gives in detail the work of the maternity hospitals and Table VII that of the maternity services of the general hospitals. To the latter hospitals are sent the majority of abnormalities of pregnancy and parturition, while the three groups of maternity hospitals deal in the most part with patients in which the more serious abnormalities are not anticipated or do not occur before admission. The consequence is that the maternal mortality of the maternity hospitals is not comparable with that of the general hospitals or with the general maternal mortality for the whole Dominion. The high death-rate of 5·12 per cent. for patients admitted to the general hospitals shows the extreme gravity of the conditions for which these patients were admitted.

The number of admissions to the three groups of maternity hospitals (Table VI) shows that on the average their licensed or established beds were occupied at the rate of over 21 patients per bed per annum. A rate of 17 patients per bed per annum is regarded as a reasonable and safe number. The high rate of admissions recorded above which produced serious overcrowding was caused by—

(1) Free or subsidized maternity services provided by the Social Security Act.
(2) The increased European birth-rate, the number of births in 1940 having exceeded those of 1939 by 3,938.
(3) The increased demands on the part of Maoris for hospital accommodation.

By contrast with the overcrowding of the hospitals, the 315 midwives and maternity nurses in practice average less than 8 patients per nurse per annum. This service is little in demand by patients and less so by doctors, who find the facilities of a reasonably-equipped hospital give their patients and themselves advantages which are lacking in private houses.

It is probable that the reduction in 1940 in the maternal mortality rate for the Maoris can be ascribed to the fact that fewer of them have been attended under the crude conditions existing in their homes, and more of them in reasonably-equipped maternity hospitals, which give them the advantage of skilled medical and nursing attendance.

The shortage of beds was partly met by the addition of 13 new licensed hospitals providing 50 beds, but 5 hospitals surrendered their licenses and 1 had its license revoked. These surrenders reduced the number of beds available by 28. The net gain, therefore, was 22 beds. Nearly all of these newly-licensed hospitals were previously the homes of midwives or maternity nurses taking one patient at a time. Most of these were licensed as an emergency measure owing to the serious shortage of beds. Hospital Boards increased their maternity beds by 15 only.

To give full hospital service for both races, and to avoid the overcrowding of the existing hospitals, 500 or more beds are required, and these will have to be provided in the near future if the maternity services are to be brought up to a full degree of sufficiency and efficiency. A survey of all hospital districts is now being undertaken to determine the exact requirements of each district.

As will be seen by reference to the table, at the present time and in the past the majority of maternity beds have been provided by private enterprise. This is unlikely to continue, as the more expensive equipment and better accommodation now demanded has increased the cost per bed to a sum that is beyond the means of most private individuals, and, furthermore, it is impossible for a private investment to have the necessary degree of security which is usually demanded. It is obvious that the time has come when Hospital Boards will have to accept the responsibility of providing maternity hospitals. Many of these have been most active in doing so, but unfortunately a number of Boards have been unduly slow to recognize and accept the changed conditions and the urgent need that exists.

Table VI.—Statistics of Maternity Hospitals, 1940.

—	Number of Hospitals.	Number of Beds.	Patients Admitted.		Confined at Full Term.	Number of Patients confined Seventh Month and Full Term.	Total Confinements.	Number of Abortions, i.e., Delivery before the Seventh Month.	Number of Operations.									Hæmorrhages.			Eclampsia.	Number of Deaths of Infants who were born alive.	Total Still-births.	Number of Infants born Dead.		Adult Patients transferred to other Hospitals.		Maternal Deaths, including Deaths of Transferred Cases.		
			For Ante-natal Treatment.	For Delivery.					Instrumental Delivery.	Versions.			Dilatation of Cervix.	Manual Removal of Placenta.	Cæsarean Sections.		Other Operations.	Accidental.	Unavoidable.	Post-partum.				Probably before Labour.	Probably during Labour.	Before Delivery.	After Delivery.	Non-puerperal Causes.	Puerperal Causes.	Total.
										External.	Internal.	Combined.			Primary.	Secondary.														
Group I: St. Helens Hospitals	4	89	131	1,972	1,839	81	1,920	6	89	3	2	2	6	11	8	..	29	20	10	23	5	26	50	23	27	7	12	2	1	3
Percentage	..	..	..	..	..	..	..	..	4·64	0·16	0·10	0·10	0·31	0·57	0·42	..	1·51	1·04	0·52	1·20	0·26	1·35	2·60	1·20	1·41	0·36	0·63	0·10	0·05	0·16
Group II: Public hospitals	79	481	881	10,271	9,563	521	10,084	87	783	36	20	11	61	89	40	11	491	52	49	139	28	177	289	158	131	60	226	18	3	21
Percentage	..	..	..	..	..	..	..	..	7·76	0·36	0·2	0·10	0·60	0·88	0·40	0·10	4·87	0·51	0·49	1·38	0·28	1·76	2·90	1·56	1·3	0·60	2·24	0·18	0·03	0·21
Group III: Private hospitals	202	943	799	19,856	18,755	953	19,708	128	2,339	75	46	27	94	104	34	2	865	45	49	169	53	290	489	289	200	118	138	26	1	27
Percentage	..	..	..	..	..	..	..	..	11·87	0·38	0·23	0·14	0·48	0·53	0·17	0·01	4·39	0·23	0·25	0·86	0·27	1·47	2·48	1·47	1·01	0·59	0·70	0·13	0·01	0·14
Totals	285	1,513	1,811	32,099	30,157	1,554	31,712	221	3,211	114	68	41	161	204	82	13	1,385	117	108	331	86	493	828	470	358	185	376	46	5	51
Percentage ..	..	..	..	..	..	..	..	..	10·13	0·36	0·21	0·13	0·51	0·64	0·26	0·04	4·37	0·37	0·34	1·04	0·27	1·55	2·61	1·48	1·13	0·58	1·19	0·15	0·02	0·16

CAUSES OF DEATH.

Group I.—St. Helens Hospitals: Toxæmia in pregnancy, 1; post-partum hæmorrhage, 1; myocarditis of long-standing associated with pregnancy, 1.

Group II.—Public Hospitals.—Puerperal sepsis, 4; eclampsia, 6; toxæmia of pregnancy, 1; post-partum hæmorrhage, 2; pulmonary embolism (non-septic), 2; puerperal shock, 2: ruptured uterus 1; pulmonary tuberculosis 1; coronary thrombosis 1; appendicitis and peritonitis, 1.

Group III—Private Hospitals: Puerperal sepsis, 7; eclampsia, 6; toxæmia of pregnancy, 3; post-partum hæmorrhage, 2; pulmonary embolism, (non-septic) 2; placenta prævia, 1; inversion of uterus 1; puerperal shock 4; cardiac disease, 1 (undelivered).

Table VII.—Maternity Cases admitted to Medical and Surgical Hospitals.

	1936.		1937.		1938.		1939.		1940.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
For ante-natal treatment only	24	..	21	..	62	1	41	..	36	1
Admitted before delivery—										
For ante-natal treatment and delivery ..	29	..	13	..	10	1	25	2	37	2
For emergency cases without complications	20	..	27	..	52	1	60	..	43	..
For obstructive labour	109	3	117	7	131	4	153	5	168	6
Failed forceps	..	..	..	..	7	1	5	1	6	..
For accidental hæmorrhage	27	4	28	2	25	..	31	3	32	4
For placenta prævia	23	2	23	1	41	4	45	5	48	..
For eclampsia	29	3	25	2	19	..	20	2	21	5
For puerperal toxæmia without eclampsia	41	4	57	4	59	3	64	6	64	5
For other conditions	37	3	65	14	76	5	65	11	50	2
Totals	315	19	365	30	510	19	468	35	469	22
Method of delivery—										
Natural	133	7	146	11	173	10	197	8	159	6
Instrumental	16	..	23	..	24	..	43	6	40	2
Cæsarean section	128	4	154	12	184	7	192	11	243	11
Induction of labour	17	1	34	3	35	..	25	3	19	..
Other operations	4	..	5	1	2	..	7	3	5	2
Undelivered	7	7	3	3	2	2	4	4	3	3
Totals	315	19	365	30	510	19	468	35	469	24
Admitted after delivery—										
For eclampsia and toxæmia	7	1	9	6	12	2	13	3	10	3
For post-partum hæmorrhage, shock, and embolism	6	..	7	7	14	3	25	3	12	1
For puerperal pyrexia and sepsis ..	72	9	112	9	141	9	148	7	168	7
For other conditions associated with parturition	112	5	133	7	169	5	195	3	157	3
Totals	197	15	261	29	336	19	381	16	347	14

Ante-natal Clinics.

Table VIII shows that 8,853 women attended the public ante-natal clinics, an increase of 125 over last year's figures. The fact that the average attendance increased from 4·94 to 5·57 shows the increased appreciation by patients of these services. It is undoubtedly of considerable value to patients and use to the medical practitioners and is an excellent service, providing there is sufficiently close co-operation between the nurse conducting the clinics and the patients' medical attendants. The only clinics that have their own medical officers attached to them are those of the St. Helens and public hospitals. The others are dependent upon private practitioners for medical supervision of the patients, and there can be no question that on the average the medical ante-natal supervision is adequate.

Table VIII.—Ante-natal Clinics.

Year.	Number of Clinics supplying Returns.	New Cases.	Return Visits.	Total Attendances.	Average Number of Attendances per Patient.
1925	16	2,289	7,816	10,105	4·41
1926	20	3,238	12,554	15,792	4·88
1927	20	3,919	15,406	19,325	4·93
1928	21	5,050	20,740	25,790	5·11
1929	24	5,177	17,555	22,732	4·39
1930	25	6,027	22,078	28,105	4·66
1931	29	6,306	22,869	29,175	4·63
1932	31	5,882	22,594	28,476	4·84
1933	33	5,978	25,794	29,772	4·98
1934	34	6,191	24,929	31,120	5·03
1935	37	6,725	26,662	33,389	4·96
1936	39	7,069	29,103	36,272	5·13
1937	38	6,746	28,769	35,515	5·28
1938	48	8,221	33,808	42,029	5·11
1939	50	8,728	34,618	43,400	4·94
1940	48	8,853	40,419	49,272	5·57

Some clinics attached to the St. Helens and to the larger public hospitals have arranged classes for maternity exercises. The beneficial effect of the practice of these exercises is again shown by Dr. Sylvia Chapman in her report on St. Helens Hospital, Wellington. The forceps rate of the patients attending these classes as compared with those not attending was for the last two years as follows :—

1939 : 1·8 per cent. for 322 patients taking the classes. 9·76 per cent. for 215 not attending.
1940 : 3 per cent. for 424 patients taking the classes. 10·7 per cent. for 196 not attending.

Dr. J. B. Dawson, Professor of Obstetrics and Gynæcology at the University of Otago, has published his results observed in Queen Mary Hospital, Dunedin, of the deliveries of 296 patients trained in the exercises in 1940 and 502 patients not trained in them in 1938. His results were as follows, and are entirely different to those obtained by Dr. Chapman :—

Forceps Deliveries.

	Primiparæ.	Multiparæ.
1938 : Not exercised	26, or 17·3 per cent.	16, or 4·3 per cent.
1940 : Exercised	26, or 18 per cent.	11, or 8 per cent.

He comments on them thus—

> " It may properly be asked if the trouble entailed in teaching the ante-natal exercises is justified by the results as set out above. The answer is emphatically ' Yes.' The exercises have a psychological value of great importance, and there is no doubt the woman's whole approach to the ordeals of pregnancy and labour is improved. The patient is reassured by the interest that is being taken in her welfare ; she becomes accustomed to the institution and its staff ; she is in constant touch with those who will superintend her delivery, and it is impressed upon her that labour should be a natural physical function in which the exercises will assist. Further, there is no doubt that the general health and well-being of the women is improved by this regular physiotherapy."

PART III.—PRIVATE MEDICAL AND SURGICAL HOSPITALS.

The following table shows for 1939 and 1940 the number of licensed medical and surgical hospitals, mixed medical and surgical and maternity hospitals, and licensed chronic medical and convalescent hospitals. It should be noted that in the past year there was a reduction of over 100 beds in the licensed medical and surgical hospitals and a decrease of 25 in the medical and surgical beds in mixed hospitals. One of the largest private medical and surgical hospitals has, since the period covered by this report, transferred more than 40 of their beds from medical and surgical to maternity services. Last year it was noted that the operation of the hospital benefits provided by the Social Security Act gave rise to an increase of the medical and convalescent hospitals from 18 to 34, and of the beds available from 130 to 262. There has been a further increase this year of 9 hospitals and 42 more beds in this class of hospital.

Table IX.—Private Medical and Surgical Hospitals.

Classification by Number of Beds.	1939.		1940.	
	Number of Hospitals.	Number of Beds.	Number of Hospitals.	Number of Beds.
Private Medical and Surgical Hospitals.				
50 to 118 beds	4	398	4	378
20 to 35 beds	16	395	15	376
10 to 19 beds	31	425	32	341
5 to 9 beds	19	140	22	164
Under 5 beds	4	13	7	22
	74	1,367	80	1,281
Private Mixed Medical, Surgical, and Maternity Hospitals (Maternity Beds shown in Table VI).				
..	35	148	34	123
	109	1,515	114	1,404
Medical and Convalescent Hospitals.				
..	34	262	43	310

ACKNOWLEDGMENT.

I again wish to express my thanks to the many members of the New Zealand Obstetrical Society for the help afforded me ; also to the many voluntary associations too numerous to mention who have been of the greatest assistance in providing various amenities to the Department's St. Helens Hospitals. It is also a pleasure to record that in the majority of cases an excellent spirit of co-operation governs the relationship of the Department's inspecting officers with the licensees and staffs of hospitals.

T. L. PAGET,
Director of Maternal Welfare.

PART VII.—NUTRITION.

I have the honour to present my report.

At the conference held to consider public-health problems arising out of the war, the following statement was given forecasting any nutritional difficulties that might arise as a result of the war:—

"*Nutritional Errors in New Zealand and those that are likely to be accentuated as a result of the War.*

"It is first necessary to summarize what we suspect as being the existing errors: Judging by Year-Book figures, the *average* New-Zealander probably eats (*a*) too much meat, sugar, cakes, and confectionery; and (*b*) too little fish, raw vegetables, milk, eggs, unrefined cereals, and cheese.

"The use of too much meat is more accentuated in country districts than in towns. While meat has not been proved to be harmful *per se*, too much nevertheless tends to diminish the consumption of milk, cheese, and fish. This is a matter related partly to costs, partly to habit and inclination.

"It is likely that in the majority of homes there is a sub-optimal intake of vitamin B_1, for two reasons: The use of too little unrefined cereal lowers the absolute intake of vitamin B_1, of which it is the best source, added to which there is the fact that the total calories ingested in the form of sugar, cakes, confectionery, and white bread should be accompanied by a proportional increase in the vitamin B_1, the amount recommended being according to a scale of from 10 to 14 International Units for every 100 calories. By some the scale is put even higher—viz., up to 20 I.U. This can be remedied most easily by an improvement in the B_1 content of bread, the introduction of the new germ loaf being a step in the right direction. Ninety per cent. of the people are unmoved by propaganda about wholemeal bread, so that it becomes advisable to improve the white bread. The Nutrition Committee has under consideration the best method of doing this, taking our own particular conditions into account. It is hoped to evolve a method by co-operation with the Wheat Research Institute.

"The quantities of vitamin C recommended recently by nutritional authorities are probably not reached. Though there are few cases of scurvy, there is apparently need to go considerably beyond the antiscorbutic level, judging by saturation tests done elsewhere. The low intake is due partly to restricted supplies of oranges and other citrus fruits and to their cost, and partly to food habits.

"Food surveys in New Zealand have shown that there is a deficiency of calcium, to combat which there should be a greater use of milk and cheese.

"Similarly, food surveys have gone to show that the intake of iron is low in many homes. This could be overcome by the use of more whole cereals, eggs, and vegetables.

"The deficiencies which may be accentuated by the war are largely bound up with the following factors:—

"(1) The rise in costs and the tendency to rely more on bread and other carbohydrates as articles of diet. If present food habits persist, the necessity for B_1 will be emphasized. As previously stated, the Wheat Research Institute and the Nutrition Committee have in hand the matter of improvement of white bread. Addition of calcium is also under consideration.

"(2) The rise in costs will tend to diminish the intake of milk, fresh fruit, vegetables, and fish. Under such conditions of sub-optimal consumption of protective foodstuffs, it is possible that epidemics may find more fertile soil. It is recommended, therefore—

"(*a*) That nutrition should be kept up on the home front to prevent the spread of epidemics.

"(*b*) That provision of nutritional addenda, if not already provided for our troops in Egypt and the war front, be considered by the Army Authorities, for it is felt that if resistance is lowered in the war zone, by reliance on an incomplete ration, epidemics may occur among the troops, increase in virulence, and spread to the civil population."

Feeding of Pre-school and School Children.

The next conspicuous event was a meeting on 9th October with the Plunket Society executive, Dr. Deem (their medical adviser), and Dr. Turbott to consider organizing for the medical supervision of pre-school children. A very promising meeting was held, as a result of which collaboration between the Plunket Society and the Health Department was agreed upon. Arising from this, the Health Department's Nutrition Officer was asked to prepare sheets giving instructions on the feeding of pre-school children. These were to be distributed by School Medical Officers in the hope that they would reach homes not reached by the Plunket Society. Tentative instructions have been prepared and issued as cyclostyled sheets; these are already in use. It is hoped to expand and improve on them if permission for the expenditure is granted.

Diets for children of school age have also been issued, set out briefly on a cyclostyled sheet. Again it is hoped, with permission, to expand these.

Tours.

Two brief tours have been made to date. The first one was used chiefly to get initiated into Head Office procedure and to make contacts with appropriate Departments in Wellington. The latter were directed towards understanding such problems as the marketing of apples and oranges, and the problems relating to fisheries. Courtesy calls were also paid to appropriate Ministers of the Crown, such as the Ministers of Marketing, Health, Education, and Scientific and Industrial Research. The Directors of Education, Educational Research, and Physical Education were also visited.

The second tour was spent largely in Auckland, where an introduction was sought to such groups of people as are particularly interested in nutritional problems—*e.g.*, the Food Value League, the Housewives' Union, the Bakers' Nutritional Committee, and the Auckland Branch of the Home Science Alumnæ. Addresses were given to several of these bodies, and questions answered. Several schools, as well as the training college, were also visited.

Hospital Dietary Departments.

In all four main centres these have been visited at the request of the Director of Nursing. The particular aspects upon which information was sought were (*a*) the training of dietitians, and (*b*) the education of all nurses in the subject of nutrition and food preparation. A conference on the training of dietitians was attended at the end of November, and a further one to finalize arrangements was attended in the middle of March.

To the Grey River Hospital, who were rearranging their hospital menus and wished for supervision of their dietary schedules, some help was given.

Department of Scientific and Industrial Research.

The Director of the Dominion Laboratory has kindly offered facilities in regard to chemical analyses, methods, and literature.

With the Wheat Research Institute, there has again been reciprocation. Their new process for germ bread has now been publicized. A report on the nutritional qualities of this new loaf was submitted by Miss Wilson.

Other researches on bread are in progress. At present Miss Wilson is testing out the B_1 value of bread made from 80-per-cent.-extraction flour. According to the memorandum issued by the British Assessory Food Factors Committee last year, the vitamin content of high-extraction flour is trebled, compared with the white flour of 70 per cent. extraction; the colour is apparently little changed.

In addition, bread that has been made with baking-powder is being investigated for its B_1 content, for the same memorandum has stated that alkaline baking-powder destroys the B_1, and the Accessory Food Factors Committee has recommended that the use of baking-powders for making bread or cakes and biscuits should be discouraged.

It is hoped that a programme for the improvement of white bread will be put into effect, as 90 per cent. of the people persist in using white bread. This will not cause neglect of a simultaneous programme for encouraging the use of whole cereals.

For various reasons it is hoped to minimize the necessity for adding synthetic vitamin B_1, if other means can be found to improve the nutritional quality of bread in respect of this element.

The recommendations regarding improvement of bread will depend to some extent on the results of researches as to B_1 status of the population. To this end, an experiment is being conducted in a school in Dunedin to see whether evidence can be adduced that children are receiving sub-optimal amounts of B_1. Other experiments one has in mind depend on the use of a means of determining B_1 by chemical means. For this reason, it has been decided to suggest that this form the subject of a thesis of one of the candidates for the Master of Home Science degree.

Advice was sought by the W.R.I. on whether to release a new process for making a starch-reduced bread for diabetics. The dietitians in the various main hospitals were consulted, and their replies were definitely against the use of special breads for diabetics. In this and other matters there is value in having a liaison between the W.R.I. and the hospitals, for there are problems relating to breads for asthma cases, &c., with which the W.R.I. has been exceedingly helpful.

Further work contemplated in connection with bread involves checking up wholemeal and allegedly wholemeal breads, and other breads, for which special claims are made.

It is hoped, by appealing to the bakers on the one hand and to the public on the other hand, to restore confidence in the wholemeal loaf, a confidence which has been largely lost by reason of addition of caramelized sugar to colour the loaf and of second-rate technical skill, which results in a loaf of poor texture.

These and other problems relating to bread are at the forefront of our programme for research work and publicity.

Schools and Hostels.

A few appeals from schools and hostels have been received to help them with their dietaries and with their cafeteria problems. It is hoped that, given time, menus for schools and cafeterias will be issued.

Publicity.

The important problem of ensuring a wide dissemination of information regarding proper nutrition was considered. A series of broadcast talks were prepared, scripts for school educational broadcast sessions supplied, lectures delivered, and articles published in press and journals. A nutrition exhibit was arranged at the Medical School, Otago University, for popular education and teaching of medical students. It is hoped also to assist by offering to arrange nutrition exhibits or to show films to students at one of the training colleges. Progress was made in the designing of posters and preparation of diet lists and suitable literature. The subject of the expansion of the teaching of health subjects in training colleges and schools was discussed by Dr. Turbott and myself with officers of the Education Department.

Home-science Department and other University Departments.

Mutual aid between the home-science department and the nutrition research department is taking several forms. Apparatus purchased by the Medical Research Council is in use for research purposes, being used by candidates for their Masters degrees. This is an advantage to both University and Nutrition Research Committee, in that the apparatus allows students to take up advanced types of study and gives the Nutrition Committee the benefit of their experience with it.

A seminar has been instituted at which all those specially interested in the subject of nutrition meet at regular intervals and contribute the results of their reading, a valuable and much-needed means of distributing the burden of keeping up with the literature.

Miscellaneous.

Numerous letters from individuals have been received asking for help with their particular problems. Several reviews of books and papers have been asked for. The list of stores for men going into an isolated locality on a public-works scheme have been examined and criticized. At various times, one's opinion has been sought as to the dietaries of soldiers in training. Two children's health camps have been visited.

I wish to express gratitude for the spirit of willing co-operation that has been extended to me throughout the Dominion since my appointment.

Muriel Bell,
Nutrition Officer.

PART VIII.—DENTAL HYGIENE.

I have the honour to submit the following report on the work of the Dental Division for the year ended 31st March, 1941. Once again, on account of war conditions, the report is being made as brief as possible, and records only the main features of the year's activities.

The work of the Division has increased rapidly in recent years, and, in addition to the operation of the School Dental Service, there is increasing activity in other directions, especially in regard to the war section of the Department and in matters connected with dental legislation.

Staff of Dental Division.

On the 31st March, 1941, the professional staff of the Division, disposed as under, numbered 446 Of the 139 student dental nurses shown below, 28 had completed their training and were about to be transferred to districts, and a further 80 had been appointed for entry to the Dominion Training-school in 1941. Of this number, 40 were to commence training on 1st April (making the total strength at that date 486), and the remainder in October.

—	Dental Officers.	Matron and Home Sisters.	Senior Dental Nurses.	School Dental Nurses.	Student Dental Nurses.	Total.
Director	1	..	..	..	..	1
Principal Dental Officer	1	..	..	..	..	1
Districts—						
Senior dental officers	5	..	..	..	..	5
Senior dental nurses	..	..	4	..	..	4
School dental officers	4	..	..	..	..	4
School dental nurses	..	..	..	262	..	262
Dominion Training-school—						
Principal	1	..	..	..	..	1
Senior dental officer	1	..	..	..	..	1
Dental officer instructors	7	..	..	..	..	7
Matron	..	1	..	..	..	1
Assistant Matron	..	..	1	..	..	1
Senior dental nurse instructors	..	..	6	..	..	6
Home Sisters	..	2	..	..	..	2
Assistant Home Sister	..	1	..	..	..	1
School dental nurses	..	..	..	6	..	6
Student dental nurses	..	..	..	..	139	139
Reserve list (extended leave)	..	..	..	4	..	4
	20	4	11	272	139	446*

* Increased to 486 on the day following the period covered by this report.

School Dental Service.

Progress of Expansion Programme.

In December, 1935, the Department was instructed to proceed with the expansion of the School Dental Service as rapidly as possible, in an endeavour to make it available to all the primary schools in the Dominion within five years, and at the beginning of 1936 plans were put in train with a view to carrying out this task by 1941.

The Department has pressed on with the development of the Service, and a stage has now been reached where, with the establishment of a limited number of additional clinics, treatment can be made available to all primary schools. At the date of this report the minimum number of additional treatment centres required to achieve this purpose were—

Auckland District	8
South Auckland District	17 (includes Native centres).
Wellington District	2 and 1 sub-centre (includes 1 Native centre).
Canterbury District	3
Otago District	10 and 1 sub-centre.
Total	40 and 3 sub-centres (including Native centres).

These numbers represent centres where no action has been taken by the local people. Several centres where clinics are in view but are not yet established are not included.

Whether the additional centres represented by the above figures can be established and put into operation during 1941 will depend upon two factors: (1) The willingness of the local people concerned to undertake the financial obligations connected with the establishment and maintenance of school dental clinics, and (2) the ability of the Department to provide the necessary staff to make good the higher rate of loss through marriage since the outbreak of war, and at the same time build up additional staff for new centres. The latter difficulty can be gradually overcome by means of the increased number of dental nurses that are now being trained. The first factor, however, is beyond the control of the Department. Officers of the Department have been active in bringing to the notice of communities concerned the advantages of having a school dental clinic, and many centres have been established as a result. On the other hand, a number of the Committees who have been approached are, for various reasons, not prepared to co-operate. They must therefore accept the responsibility for the children of their districts not having the benefits of the School Dental Service. It is proving especially difficult to interest the Committees of Native schools in this matter. In very few cases are they willing to undertake the financial obligations that are involved.

Although the School Dental Service is within measurable distance of being available to all schools, it is not necessarily available in the best or most convenient way in every case. Regrouping of schools and the building of additional clinics will continue for some time yet, especially in view of the policy of extending the Service to include Standard VI. This in itself will involve much regrouping.

The following table summarizes the expansion that had been carried out up to November, 1940:—

	November, 1935.	November, 1940.
Treatment centres	252	351
Schools under treatment ..	1,590	1,881
Children under treatment ..	84,738	112,090
Staff	233 (including 53 in training)	446 (including 139 in training)

Extension of treatment to Standard V was recently authorized. This is not being carried out simultaneously at all centres, but is being applied wherever, in the opinion of the Department, local conditions render it possible. This represents a further step forward in the development of the Service.

An outstanding event in the year under review was the opening of the new Dominion Training-school for Dental Nurses and Wellington Dental Clinic. The new building is built and equipped on the most modern lines, and provides up-to-date facilities for the training of school dental nurses. It was officially opened on the 14th May, 1940, by Her Excellency Viscountess Galway, and it commenced to function on the following day. Until the expansion programme is further advanced, the Tinakori Road Clinic will continue to be used as an annexe to the training-school.

Summary of Expansion Activities for the Past Year.

Reference to the statistical section of this report shows a further increase in the number of schools served and in the number of children treated. The growth of the Service activities is indicated by the fact that for the first time in its history the number of operations for the year has passed the million mark. There has been a further marked increase in the number of schools under treatment and also in the number of children. New school dental clinics have been established at twenty-eight centres—namely, Boulcott (Lower Hutt), Clevedon, Dominion Road (Auckland), Elmwood (Christchurch), Foxton, Frankton, Hinds, Hikurangi, Kaeo, Kaikohe, Katikati, Maungaturoto, Mangawai, Mayfield, Orakei, Otira, Owairaka, Paraparaumu, Point Chevalier, Riccarton, St. Andrews, Te Haroto, Te Papapa, Timaru South, Waipu, Waiuku, Whakatane, and Wilson Home (Auckland).

The following six centres have been reinforced during the year by the appointment of additional staff in order to enable further schools to be included: Matamata, Otahuhu, Otorohanga, Pukekohe, Rangiora, and Tauranga.

Buildings are ready and arrangements are well in hand for clinics to be opened at the following three centres: Akaroa, Tokomaru Bay, and Waterloo (Lower Hutt).

In addition to the centres listed in the last annual report as having been approved as treatment centres, negotiations are proceeding for the establishment of clinics at the following twelve centres: Dunsandel, Hatters Terrace, Manutuke, Napier Street (Auckland), Patutahi, Ravensbourne, Seddon, St. Joseph's (Christchurch), Tapawera, Upper Takaka, Waiau, and Wakari (Dunedin).

Statistics.

Operations performed in the field and in the training-school from 1st January to 31st December, 1940:—

Fillings—		
In permanent teeth	317,602	
In deciduous teeth	381,320	
		698,922
Extractions—		
Permanent teeth	3,269	
Deciduous teeth	78,030	
		81,299

The following figures illustrate the progress made during the last eleven years :—

Year.	Number of Schools under Systematic Treatment.	Number of Children receiving Systematic Treatment.	Total Number of Operations.
1930	930	67,652	463,204
1931	1,180	68,995	562,759
1932	1,297	72,584	619,390
1933	1,430	78,391	623,625
1934	1,551	83,433	626,878
1935	1,590	84,738	674,374
1936	1,629	89,803	725,609
1937	1,568	89,483	759,873
1938	1,620	94,261	826,598
1939	1,749	101,701	912,370
1940	1.881	112,090	1,054,995

Total number of operations since the inception of the Service, 9,518,184.

Ratio of Extractions to Fillings.

After showing a fractional increase last year, the ratio of extractions to fillings—*i.e.*, of unsaveable to saveable teeth—shows a further reduction for the year under review. The ratio of 11·6 extractions per 100 fillings is the lowest yet recorded.

The following table shows the ratio of extractions to fillings since the inception of the Service :—

	Fillings.	Extractions.	Ratio : Extractions per Hundred Fillings
1921–22	13,047	14,939	114·5
1922–23	24,603	25,436	103·3
1923–24	47,610	37,978	79·7
1924–25	59,322	43,181	72·6
1925–26	61,506	41,339	67·2
1926–27	84,723	53,232	62·8
1927–28	116,916	66,523	56·8
1928–29	146,354	76,555	52·3
1929–30	190,934	71,128	37·2
1930–31	258,546	75,973	25·5
1931–32	334,827	80,389	24·0
1932–33	382,389	74,633	19·5
1933–34	397,437	69,208	17·4
1934–35	399,560	70,207	17·5
1935–36	450,727	72,782	16·1
1936–37	498,121	72,088	14·6
1937–38	535,441	68,832	12·9
1938–39	571,199	67,972	11·9
1939–40	615,514	75,993	12·3
1940–41	698,922	81,299	11·6

The above figures include both permanent and deciduous teeth. For permanent teeth alone, the ratio is 0·97 extractions per 100 fillings.

Training of Dental Nurses.

The following are extracts from the report of the Principal of the Dominion Training-school for Dental Nurses (Dr. J. B. Bibby) :—

"*Opening of New Dominion Training-school.*—The most notable event of the period under review, in fact the most notable event in the history of the Service, was the opening of the new Dominion Training-school and Wellington Dental Clinic.

"Preparation of sketch plans for the building had been commenced by the Public Works Department in 1935, but it was not until 1937 that the contractors, Messrs. Bodell and Co., began construction. On 30th April, 1938, the foundation-stone was laid by the late Prime Minister (Right Hon. M. J. Savage), and on the 14th May, 1940, the building was formally opened by Her Excellency Viscountess Galway.

"At this ceremony the Prime Minister and other speakers referred to the increased amenities to be offered to the public, and the likely extension of the Service and scope of treatment. Lack of equipment and shortage of staff, however, and the necessity of first organizing current work in the new building, have precluded any radical change in treatment during the past year.

"The transfer from the old clinic to a building many times larger and covering five floors, and from simple equipment to complicated new equipment, in itself involved concerted effort on the part of every member of the staff and the co-operation of all students. It speaks much for all concerned that in less than three days the transfer of staff was effected, the opening ceremony observed, the

training programme commenced, and treatment of patients under way; and, further, that in the last nine months work has proceeded smoothly in spite of the many unexpected difficulties that have arisen from time to time. During this time very definite progress has been made in bringing overdue work up to date and in calling up patients who were waiting for treatment; but much still remains, and until this is well in hand further extension would be unwise.

"*Annexe.*—Until October, 1940, the annexe in Tinakori Road was under the control of Mr. Leslie, with certain sections of the training of both first- and second-year students still being carried out in this building. At this stage it was decided to use the annexe for clinical instruction alone and transfer all junior students to the Willis Street Clinic. Under the new arrangement the loss of time incurred by the instructional staff in transit between the two institutions has been avoided, and a far more equitable disposition of the staff made possible. Miss A. E. Early, B.D.S., is now officer in charge.

"*Examinations.*—(*a*) Two final examinations were held during the year. The first, in September, 1940, was for the second group of the sixteenth draft, and all the 35 candidates were successful in passing.

"The second final examination was held in March, 1941, for the first group of the seventeenth draft. Of 40 in this draft, only 34 were considered sufficiently advanced in training to be eligible to sit the examination. Of those who sat, 28 passed, 3 received partial passes, and 3 failed.

"The external examiners on these two occasions were Mr. A. H. Weir, of Christchurch (September, 1940), and Mr. A. C. Macintyre, Christchurch (March, 1941).

"(*b*) Primary examinations were also held for the first and second groups of the eighteenth draft, the first being in September, 1940, and the second in March, 1941.

"In the first examination (September), 36 sat the examination, 30 passed, and 6 gained partial passes. In the second (March), 34 sat, 27 passed, 2 gained partial passes, and 5 failed.

"*The Course of Training.*—Mention was made in the last annual report of the reduction that had been effected in the length of certain lecture courses. From a review of the results of examinations held during the last twelve months, and from personal experience in examining all groups in training I am of opinion that a further reduction should be made in the subjects of the primary course, and more stress placed on those taken in the following intermediate period of training. Shorter courses with more intensive instruction and a higher standard of passes would make more effective officers than under the present plan.

"*Hostels for Student Dental Nurses.*—The three hostels, 'The Mansions' (Ghuznee Street), the Hobson Street hostel, and the 'Friends'' Hostel have all continued to function satisfactorily under the control of Miss Pengelly, Mrs. Wood, and Miss Searell respectively. The Department is indebted to the Society of Friends for the continuance of the arrangement whereby student dental nurses are so well cared for in the 'Friends'' Hostel, and also to Miss Pengelly, who retired in March after controlling 'The Mansions' for four years.

"It is unfortunate that plans for building a new hostel have had to be postponed. This makes it necessary to continue the use of 'The Mansions' for a further term. This hostel has very poor amenities and is much below the standard of Hobson Street and the 'Friends'.'

"*Statistics, Wellington Dental Clinic.*—Attendances recorded and operations performed in the Wellington Dental Clinic for the years from 1938–39 to 1940–41 are shown below:—

	Attendances.	Fillings.	Extractions.	Other Operations.
"1938–39	.. 52,997	42,419	3,894	33,894
"1939–40	.. 62,544	37,264	2,850	41,100
"1940–41	.. 65,861	40,413	3,395	44,966

"Total attendances recorded and operations performed to 31st March, 1941:—

Attendances.	Fillings.	Extractions.	Other Operations.
681,298	453,160	82,653	400,720

"The appointment of a small group of experienced dental nurses to the Wellington Clinic to deal with the more difficult patients and undertake work beyond the capability of a student dental nurse has been a long-felt want, and thus it is gratifying to be able to record that five trained dental nurses commenced duty in January of this year.

"*Waiting-list.*—The number of names on the waiting-list of the Wellington Clinic as at 31st March for the last four years is as follows: 1937, 3,398; 1938, 1,095; 1939, 229; 1940, 1,092; 1941, 587.

"During this year 1,341 new patients commenced treatment, and of the 587 now waiting, none have been listed for more than five months.

"The 'Unofficial' waiting-list containing the names of children under the age of two years and a half now stands at 630. Nearly 200 children were called up from this 'baby' list during the year."

Dental Health Education.

As the staff of the School Dental Service increases, more and more is being done in the direction of teaching children the importance of caring for their teeth and of observing the fundamental rules for preserving dental health. There is a steadily increasing interest being taken in this important aspect of the work not only by the school dental nurses and teachers, but by the children themselves. Experience shows that it is not difficult to interest the children in this matter, but that it is well-nigh impossible to reach the parents, and without their co-operation much of the teaching given to the children must of necessity be ineffective. Nevertheless, the work that is being carried out assiduously by school dental nurses in this direction is undoubtedly having beneficial results, and this is shown

by the reduction in the amount of recurrent treatment that is reported from many areas. While much good work is being done in the field of dental health education, there is need for much more time to be devoted to this work. It is the intention, as soon as the staff position warrants it, that every school dental nurse should work to a set programme of educational work. Unfortunately, the staff is not yet strong enough numerically to undertake such a programme in addition to coping with the vast amount of treatment that is urgently required. War conditions have adversely affected the rapid building-up of staff which was in progress, and so have deferred for some time at least the organization of health activities on the basis of a set programme. In the meantime, much is being done, and school dental nurses are expected to take every opportunity of carrying out this work. During the year under review 3,087 talks and addresses have been given to children and parents. Dental officers in charge of districts have also been active in this matter, and have taken every opportunity of addressing various organizations.

Dental Condition of the Adult Population.

The dental examination of the men entering the armed Forces is providing data which otherwise would not have been available in regard to the dental condition of the male portion of the community from twenty-one to forty-five years of age. The position disclosed is not reassuring. The Army Department has stated that approximately 60 per cent. of the men have artificial dentures. Of the remainder, about 80 per cent. require dental treatment. These are the broad facts as disclosed so far.

At first sight it might appear that these figures indicate that the School Dental Service has failed in its purpose. An examination of the facts, however, quickly disposes of this contention, because when the youngest of these men were of the age (five to six years) when they would have been eligible for enrolment at a school dental clinic, the School Dental Service had barely come into existence. Thus, of the men who have entered the armed Forces since the outbreak of war, the number who had had the opportunity of attending a school dental clinic is negligible. In any case, as school dental treatment ceased until recently at Standard IV (just under twelve years of age), the responsibility for an individual's dental condition from that time onwards has rested entirely either with the individual himself or with his parents.

The reason for the unsatisfactory dental condition of the country's man-power must therefore be ascribed to the failure of the public to appreciate the necessity for preserving dental health, and to an erroneous idea, apparently widely held, that the dental problem of the individual is solved by the complete removal of the natural organs and their replacement by artificial substitutes. An intensive and sustained health education campaign to enlighten the public in regard to these matters appears to be necessary.

The rapidly-expanding School Dental Service is teaching the children how to preserve dental health, but it alone can do little to influence the dental condition of the adult population.

Acknowledgments.

I wish to take this opportunity of expressing the thanks of the Department to Dental Clinic Committees, teachers, Education Boards and their staffs, and to all who have assisted the work of this Division during the past year.

I also wish to express my appreciation and thanks to the staff of the Division for their work throughout the year.

J. Ll. Saunders,
Director, Division of Dental Hygiene.

Centres at which School Dental Clinics were established as at 31st March, 1941.

Main Treatment Centres.	Authorized Sub-bases.	Main Treatment Centres.	Authorized Sub-bases.
	Auckland District.		
Avondale, Auckland	..	Ngatea	Kaihere, Kerepeehi, Turua, Waitakaruru.
Balmoral, Auckland	..		
Beresford Street, Auckland	..	Okaihau	..
Birkenhead	..	Onehunga	..
Blockhouse Bay	..	Orakei	..
Cornwall Park, Auckland	..	Otahuhu	..
Dargaville	Ruawai, Te Kopuru.	Owairaka, Auckland	..
Devonport	..	Paeroa	..
Dominion Road, Auckland	..	Papakura	..
Ellerslie, Auckland	Howick.	Parnell, Auckland	..
Epsom, Auckland	..	Ponsonby, Auckland	..
Gladstone Road, Auckland	..	Point Chevalier, Auckland	..
Glen Eden	..	Pukekohe	..
Grey Lynn	..	Rawene	..
Helensville	Huapai.	Sandringham, Auckland	..
Henderson	..	St. Heliers	..
Hikurangi	..	Takapuna	Wilson Home.
Kaeo	..	Tauranga	..
Kaikohe	..	Te Papapa, Auckland	..
Kawakawa	..	Te Puke	..
Mangawhau, Auckland	..	Thames	Coromandel, Mercury Bay.
Manurewa	Clevedon.	Tuakau	..
Maungaturoto	..	Waihi	Katikati, Tairua.
Meadowbank, Auckland	..	Waiuku	..
Mount Albert, Auckland	..	Warkworth	..
Mount Eden, Auckland	..	Wellsford	Mangawai.
Mount Roskill, Auckland	..	Whangarei	Horahora, Whau Valley.
New Lynn, Auckland	..	Whangarei (country)	Waipu.
Newmarket, Auckland	..		
	South Auckland District.		
Cambridge	..	Putaruru	..
Frankton	Raglan.	Rotorua	Mamaku, Murupara, Te Whaiti.
Gisborne No. 1	..		
Gisborne No. 2	..	Ruatoria	..
Hamilton East	..	Taumarunui	Kakahi.
Huntly	Pukemiro, Te Kauwhata.	Taupo	Tokaanu, Te Haroto.
Matamata	Tirau.	Te Aroha	Tahuna.
Morrinsville	..	Te Awamutu	..
Ngaruawahia	Glen Massey.	Te Karaka	Matawai.
Ohura	..	Te Kuiti	Waimiha.
Opotiki	Maraenui, Omarumutu, Torere.	Tikitiki	Te Araroa.
		Tolaga Bay	Tokomaru Bay.
Otorohanga	..	Wairoa	Tuai.
Piopio	Mahoenui.	Whakatane	Taneatua, Poroporo.
Paroa	Maketu, Matata, Pukehina, Ruatoki, Tawera, Te Teko, Waiohau.	Whitiora	..
		Unattached	Awakino.
	Wellington District.		
Carterton	Greytown.	New Plymouth No. 2	..
Dannevirke	..	New Plymouth (West End)	..
Eketahuna	Tiraumea, Woodville.	Ohakune	Raetihi.
Eltham	..	Okato	..
Featherston	Martinborough, Pirinoa.	Opunake	..
Feilding	..	Ormondville	Takapau.
Gonville	..	Pahiatua	..
Hastings No. 1	..	Patea	Waverley.
Hastings No. 2	..	Pongaroa	..
Hawera	..	Stratford	..
Hunterville	Mangaweka, Rangiwahia.	Taihape	..
Kaponga	..	Waipawa	Otane, Opapa.
Inglewood	..	Waipukurau	Porongahau.
Manaia	..	Waitara	Urenui.
Marton	..	Wanganui Central	..
Masterton	..	Wanganui East	..
Masterton (country)	..	Wanganui Mobile (country)	Schools from Nukumaru to Turakina.
Napier No. 1	..		
Napier No. 2	..	Whangamomona	..
New Plymouth No. 1	..		
	Inner Wellington District.		
Blenheim	..	Palmerston North (King Street)	..
Eastbourne	..		
Foxton	..	Palmerston North (Terrace End)	..
Levin	..		
Lower Hutt (Boulcott)	..	Pelorus Sound (Te Puru)	French Pass, Madsen, Manaroa, St. Omer, Te Towaka, Waikawa Bay.
Lower Hutt (Riddiford Park)	..		
Lower Hutt (Waterloo)	..	Petone	..
Otaki	Paraparaumu.	Shannon	..
Palmerston North (Central)	..	Sounds (Picton)	Deep Creek, Havelock, Rai Valley.
Palmerston North (College Street)	..		
		Thorndon	..
		Upper Hutt	..

CENTRES AT WHICH SCHOOL DENTAL CLINICS WERE ESTABLISHED AS AT 31ST MARCH, 1941—*continued.*

Main Treatment Centre.	Authorized Sub-bases.	Main Treatment Centre.	Authorized Sub-bases.
	Canterbury District.		
Addington	..	Papanui	..
Ashburton East ..	Tinwald.	Phillipstown	..
Ashburton West ..	Hinds.	Rakaia	Methven.
Beckenham	..	Rangiora	..
Brightwater	Richmond, Stoke, Tahunanui, Wakefield.	Riccarton	..
		Runanga	Blackball, Taylorville.
Christchurch East ..	..	Reefton	Inangahua Junction, Murchison, Waiuta.
Darfield	..		
Elmwood	..	St. Albans, Christchurch ..	..
Fairlie	Pleasant Point.	St. Andrews	..
Geraldine	..	Shirley, Christchurch ..	..
Greymouth	..	Somerfield, Christchurch ..	..
Hawarden	Cheviot, Hanmer.	Southbridge	Leeston.
Hokitika	Harihari, Kokatahi, Kumara, Otira, Ross, Waiho Gorge, Wataroa, Weheka.	Spreydon, Christchurch ..	..
		Sumner	..
		Sydenham, Christchurch ..	..
Hornby	..	Takaka	Collingwood, Upper Takaka.
Kaiapoi	Waimairi.	Temuka	Winchester.
Kaikoura	Oaro.	Timaru Main	..
Linwood, Christchurch ..	..	Timaru South	..
Linwood Avenue, Christchurch	..	Timaru West	..
		Waimataitai, Timaru ..	..
Lyttelton	..	Waimate	..
Mayfield	..	Westport	Denniston, Granity, Hector, Karamea, Millerton, Seddonville, Stockton, Waimangaroa.
Motueka	Tasman, Upper Moutere.		
Nelson	..		
New Brighton	..		
Opawa	..	Woolston	..
Oxford	..		
	Otago District.		
Alexandra	Clyde, Cromwell, Wanaka.	Oamaru (country) ..	..
Balclutha	Clutha Valley.	Otautau	Nightcaps, Ohai.
Caversham, Dunedin ..	..	Orepuki	..
Dunedin Central	..	Palmerston	Seacliff.
Forbury, Dunedin ..	..	Port Chalmers	..
Gore	Mataura.	Ranfurly	Middlemarch, Naseby, Omakau, Oturehua.
Invercargill	..		
Kaitangata	Clinton.	Riverton	..
Lumsden	Queenstown.	Tapanui	Lawrence, Roxburgh.
Milton	..	Tuatapere	..
Mornington, Dunedin ..	..	Winton	..
Mosgiel	Green Island	Woodlands	Bluff, Stewart Island.
Oamaru	Kurow.	Wyndham	Edendale.

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