

Report of the Department of Health / New Zealand.

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THE PUBLIC HEALTH

REPORT OF THE DEPARTMENT OF HEALTH FOR THE YEAR ENDED 31 MARCH 1971

*Presented to the House of Representatives Pursuant to
Section 10 of the Health Act 1956*

BY AUTHORITY:

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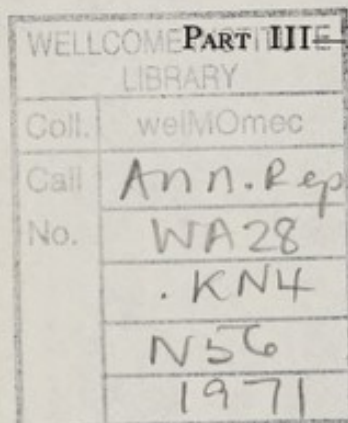
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See also:

Annual Report—King George V Memorial Children's Health Camps Federation.

Annual Report—Medical Research Council—H. 31B.



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REPORT

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

Pursuant to section 10 of the Health Act 1956, I have the honour to lay before you the annual report of the department for the year 1970-71.

The report is in three parts: I—Bureau of Administrative Services, II—Bureau of Public Health Services, III—Bureau of Medical Services. Legislative developments are referred to under the bureau concerned.

Two special appendices are included. As in previous years¹ the first is a review of a major public health programme. This year marks the fiftieth anniversary of the establishment of the dental nurse programme² reviewed in appendix II. Appendix III lists the New Zealand membership of WHO expert advisory panels.

BOARD OF HEALTH

In performing its principal function of advising on public health policy, the Board reviews all WHO Expert Committee reports from the viewpoint of their possible application in New Zealand.

The membership of the board and its main standing committees are listed in appendix IV.

The Air Pollution Committee reported to the board³ and recommends the introduction of new legislation. Following release of its first report⁴ the Committee on Drug Dependency and Drug Abuse has continued to receive submissions. Work is proceeding on the preparation of a second report. The Food and Nutrition Advisory Committee investigated a suggestion of a drop in consumption of iodised salt, but preliminary inquiries revealed that consumption was being maintained. A statistical survey is being undertaken. The committee will continue to provide objective scientific guidance on broad food and nutritional policy.

The Local Authority Affairs Committee published its report⁵ "1970 Grading of Public Water Supplies in New Zealand". The results showed a substantial improvement over those obtained in the provisional grading survey published in 1962.⁶ These surveys will continue to be undertaken at 5-yearly intervals. The committee was called upon to consider the desirability of regional water boards delegating to local authorities their functions under the Water and Soil Conservation Act. It considered that such work should be regional in emphasis, and that it could not support any proposal for delegation of these functions to local authorities in any revision of the waters pollution legislation.

¹Environmental Health (1969), Maternal and Child Health (1970), Disease Control (1971).

²Kennedy, D. P. (1970). School Dental Nurses in New Zealand. N.Z. med. J., 72, 301-303.

³N.Z. Board of Health. Air Pollution. (Report Series No. 15.) Wellington, Govt. Printer, 1970.

⁴N.Z. Board of Health. Committee on Drug Dependency and Drug Abuse in New Zealand. First Report. (N.Z. Board of Health. Report Series No. 14.) Wellington, Govt. Printer, 1970.

⁵N.Z. Board of Health. Grading of Public Water Supplies in New Zealand. (Report Series No. 16.) Wellington, Govt. Printer, 1970.

⁶N.Z. Board of Health. Provisional Grading of Public Water Supplies in New Zealand. (Report Series No. 5.) Wellington, Govt. Printer, 1962.

The Maori and Polynesian Health Committee undertook a review of Maori health which will be printed in the board's cyclostyled series.¹

The Maternity Services Committee supported the payment of a child benefit from the sixteenth week of pregnancy onwards in submissions to the Royal Commission on Social Security. A survey of obstetric facilities is being undertaken and nearly two-thirds of the maternity hospitals in New Zealand have so far been covered. A comprehensive and valuable report will be prepared from information gathered. Because of continuing concern for assisting children whether born with, or later suffering from, some form of handicap, a committee was established to assess the present situation and make recommendations covering the needs of the future. The terms of reference allow the problem to be examined in its overall context, including those with multiple handicaps, rather than dealing with specific areas in isolation.

Loss of specialist staff in public hospitals and the increasing cost of private laboratory services to the social security fund and the need to improve national reference facilities led to the establishment of a committee to inquire into clinical and public health laboratory services. Examination of the role of the dietetic profession is being considered by a newly established committee.

HOSPITALS ADVISORY COUNCIL

The council met three times during 1970.

A report from the Special Committee on Spinal Injury Centres was adopted. The recommendations supported the upgrading, in establishment and facilities, of two spinal injury centres at Auckland and Christchurch. Planning for the establishment of these units is now in hand.

At the request of the Otago Hospital Board, consideration of the establishment of a third cardiac surgery unit at Dunedin was deferred.

A comprehensive visiting cerebral palsy therapy service to be instituted by hospital boards was supported and steps taken to implement these proposals.

With a view to encouraging medical registrars to consider general practice, council recommended the introduction of a "pilot" scheme whereby an additional registrar would alternate with an approved general practice. This programme is being introduced in Southland and, if successful, will be extended to other provincial hospitals.

Extensive discussions on the maternity services in the south Wairarapa area culminated in a recommendation that the maternity hospitals at Martinborough and Greytown be closed, and that the closures be the subject of a directive from the Minister of Health under section 5 of the Hospitals Act 1957. These hospitals are to be closed on or before 1 April 1971. Also considered were applications to close the maternity hospitals at Temuka and Tokanui, but the applications were declined.

The initiative by the Wairoa Hospital Board to voluntarily amalgamate with Hawke's Bay Hospital Board was supported. Council also made recommendations regarding the charge to inmates of hospital

¹N.Z. Board of Health. Cyclostyled Series No. 4.

board old people's homes and persons classified as "non-hospital" cases. This charge had not been reviewed since 1961. It was recommended that the previous charge of \$1.75 be increased to \$2.75 per day and that the liquid assets level be reduced to \$1,000. These recommendations were approved and became effective from 1 August 1970.

HOSPITAL WORKS COMMITTEE

The Hospital Works Committee met 13 times during the year, making recommendations to the Minister of Health on the following subjects:

(1) Hospital boards—			
Development schemes	.....	.....	4
Building and engineering projects	.....	.....	157
Land purchase and sale	.....	.....	4
Hospital works loans	.....	.....	19
General items	.....	.....	34
(2) Private hospital loan applications	.....	.....	2
(3) Group practice loan schemes	.....	.....	6
(4) Old people's homes and pensioners' flats	.....	.....	37
(5) Mental health building and engineering projects	.....	.....	39

Although 157 hospital board building and engineering projects were considered by the committee, 36 of these were examined on more than one occasion. The committee examines each project at the various stages from approval in principle to the acceptance of tenders and also examines and makes recommendations on projects for the mental health service, private hospital loans, old people's homes, and pensioner flats. With the introduction this year of the group practice loan scheme, the activity of the committee has been extended to include the consideration of applications for loans. As in the past, all building proposals for the care of the sick and aged are co-ordinated through the committee.

There has been a substantial increase in the number and value of projects for which tenders have been accepted during the year. For the year ended 31 March 1970, 47 tenders were accepted, the total value being \$12.37 million. During the year ended 31 March 1971, 63 tenders totalling in value \$31.53 million were accepted. These include several major hospital buildings which, together with those already under construction, will provide an additional 1,900 patient beds over the next 5 years. In addition, these buildings and associated engineering services will also provide modern clinical and outpatient facilities, including diagnostic X-ray pathology services, physiotherapy and occupational therapy departments.

THE ENVIRONMENT

In recent years, new emphasis reminds us that the quality of our environment is degradable to unacceptable levels. Increasing population and the problems of expanding technology threaten to create great quantities of waste products and exhaust vital resources.

This current concern is not new. My predecessor in the department's first annual report of 1901 referred to pollution of rivers and streams by sewage. The several Health Acts since passed have provided for

the abatement of nuisances and the control of pollution. Sections of this report dealing with environmental health and public health scientific services are relevant.

Arising from the current public concern has been the calling of the conference on the physical environment, May 1970, and the establishment of an Environmental Council under the National Development Council. The department made an important contribution to the conference and is represented on the council. It looks forward to assisting the council in the future.

Cigarettes have been described as "the biggest single avoidable menace to health"¹ and it can be estimated here that smoking-induced diseases in New Zealand account for over 8,000 deaths or more than 1 in each 3 deaths which occur. Of these, nearly 10 percent are due to lung cancer.

The increased awareness of environmental pollution needs to be extended to the most dangerous personal pollution by cigarette smoking.

EDUCATION FOR THE HEALTH PROFESSIONS²

The United Nations declaration of 1970 as International Education Year focuses on the educational demands³ to maintain and develop national health services.

Steps taken during 1970 to increase the number of doctors graduating are given in the report of the University Grants Committee.⁴ The development of a post-graduate course in public health engineering commencing at Auckland University in 1971 now enables post-graduate training in public health to be undertaken by doctors and dentists (Otago), veterinarians (Massey), and engineers (Auckland). A university programme in higher health service administration at the post-graduate level is urgently needed. The University of Otago has an encouraging interest in developing such a programme.

Nursing education is a matter for serious concern. Almost half of the students who enter training fail to complete. Less than 30 percent of the tutors are qualified. Those qualified are thinly spread over 46 schools of nursing and in many schools which teach only a small number of students.

Too few of the students who qualify remain in nursing. Nursing has become unattractive to both student and qualified nurses. The solution does not lie with lowering education prerequisites as the loss is higher from nursing programmes that have no pre-entry educational requirements. Problems in nursing education are not peculiar to New Zealand. In New South Wales a committee has made similar recommendations to those outlined in the Carpenter Report. Many countries have made,

¹Gt. Brit. Dept. of Health and Social Security on the State of the Public Health; the Annual Report of the Chief Medical Officer of the Department of Health and Social Security, 1969. London, H.M.S.O., 1969.

²N.Z. Dept. of Health, Staff Training Branch. Qualifications: Medical, Dental, Nursing, Paramedical in the Health Services. Wellington, Govt. Printer, 1971.

³Education and Training of Health Workers. (1970.) WHO Chronicle, 24, 439-486.

⁴N.Z. University Grants Committee. Reports of the University Grants Committee and University Institutions. Wellington, Govt. Printer.

or are in the process of making, changes in the educational system for nurses—the United Kingdom, Australia, Canada, and South Africa are examples.

Nursing is at a cross-roads, and reform or failure to take appropriate action will result in continuing deterioration of this aspect of our health services. With a view to obtaining an independent assessment of the situation, arrangements were made through the World Health Organisation for a consultant in nursing education to examine the present situation and make recommendations to Government. This report has been completed and published.¹

Closely allied is the view developing that all education for the health professions should be established under the educational authorities. The teaching in occupational therapy at the Central Institute of Technology is an example. From 1971 the technical institutes and polytechnics will be providing educational training for an increasing number of groups, viz, pharmacy, chiropody, dental technician, and occupational therapy in the Department of Health Sciences of C.I.T.; laboratory technology in the four main centres; health inspector training at the Wellington Polytechnic. Other disciplines such as physiotherapy and radiography have yet to be closely examined before a decision can be made regarding their appropriate educational location.

MEDICAL RESEARCH

The Medical Research Council was reconstituted² in 1966. Established in 1937 under the Health Act, it was incorporated by the Medical Research Council Act of 1950. The 1965 Act completed its separation from its parent the Department of Health. The first chairman elected, Mr T. H. C. Caughey, O.B.E., has been annually re-elected but, in terms of the statute, retires from the council in March 1971. Medical research development in recent years owes much to Mr Caughey's leadership. It is also in debt to Dr. W. M. Hamilton (Director-General, Department of Scientific and Industrial Research), who retires having been a member of the council since 1953.

The council is represented on the War Pensions Medical Research Trust Board;³ advises the department on therapeutic trials of new drugs⁴ and on research undertaken in public hospitals.

The Scientific Secretary of the Medical Research Council has replaced the Director-General of Health as medical adviser to the Medical Research Distribution Committee of the Lottery Profits Board of Control.⁵ The department is of the view that this distribution could best be handled by the Medical Research Council.

The annual reports⁶ of the council indicate it is the major organisation supporting medical research and acts as the central co-ordinating body.

¹Carpenter, Helen: *An Improved System of Nursing Education for New Zealand* (Assignment Report June to September 1970) Wellington (Govt. Printer for) N.Z. Dept. of Health, 1971.

²N.Z. Laws, Statutes, etc. Medical Research Council Amendment Act 1965.

³N.Z. Report of the Secretary of War Pensions, H. 9A. Wellington, Govt. Printer.

⁴N.Z. Laws, Statutes, etc. Food and Drugs Act 1969. Section 15.

⁵N.Z. Lottery Profits Board of Control. Report. Wellington, Govt. Printer.

⁶Medical Research Council of New Zealand. Annual Report and Accounts. Wellington, Govt. Printer.

INTERNATIONAL HEALTH

World Health Organisation

While International Health first developed through the need for international control of communicable disease, it is becoming increasingly concerned with the international control of drugs of addiction and there has been developed international standardisation in subjects such as vital statistics and biological preparations. It is also concerned with medical aid to developing countries, including the training of health staff, advice on national health planning, and provision of services under emergency situations.

New Zealand was represented at the Twenty-third World Health Assembly held in Geneva¹ and at the Twenty-first Session of the WHO Regional Committee held in Manila.²

During the year, departmental officers acted as consultants for WHO. Dr C. N. D. Taylor, Deputy Director-General of Health (Public Health), followed up an earlier visit to Ghana for a period of some 2½ months to assist in the preparation of public health legislation. Dr J. F. Copplestone, Assistant Director (Occupational Health), completed two short-term assignments with WHO headquarters in Geneva on the subject of toxic hazards of insecticides. Mr R. R. L. Harcourt, Assistant Director (Environmental Health), lectured at the WHO Public Health Engineering Training Course held at Osaka and has also been appointed to a WHO panel of experts to travel at short notice within South-east Asia and the Pacific Basin region in the event of an emergency.

Radiation Protection

The officer in charge of dosimetry at the National Radiation Laboratory represented New Zealand on a IAEA/WHO panel of experts studying "The Absolute Determination of Radiation Dose and Absorbed Dose Standards" held in Denmark, and visited the Primary Radiation Standards Organisation for the United Kingdom and for Australia to undertake intercomparison measurements.

The laboratory provided Mr E. J. Browne as a consultant to Thailand to assist in the establishment of a school for medical physicists and Mr B. D. T. Williamson spent approximately 1½ months in Thailand assisting in the establishment of a radiation protection service.

Medical Aid

The Commonwealth Medical Aid Programme was extended for a further 5 years to 1976. To date, 19 awards for post-graduate study have been granted under the scheme which contains provision for 10 clinical and 2 public health awards annually. Fellows holding the clinical awards are appointed to established hospital posts. In general, the training will lead to a higher qualification but where this is not possible the New Zealand Post-graduate Medical Federation has agreed to issue a certificate testifying to the additional training and experience of the award holder.

¹World Health Organisation. Official Records, No. 184, 185. Geneva, 1970.

²World Health Organisation. Regional Office for the Western Pacific. Report of the Regional Committee Summary Records of the Plenary Sessions. (WPR/RC21/15.) Manila, 1970.

In public health, four doctors have completed their diploma in public health and one remained a second year for his diploma in industrial health. There is provision for the award holders to undertake a period of practical experience under the control of the department and this is usually availed of. So far these awards have proved popular, but the full complement of 10 clinical awards has not yet been made in any one year. The expenditure under the scheme is included in New Zealand's international aid statistics.

Under other sponsorships such as WHO, Colombo Plan, or on a Government to Government basis, the department assists with the placement of overseas students for both academic courses and observation tours.

Nursing Aid

Six students from South-east Asia, Africa, and the South Pacific region undertook the diploma in nursing programme at the School of Advanced Nursing Studies in Wellington.

Eight nurses from South-east Asia completed the special programme developed by the school's WHO Sponsored Fellowship Training Centre. Established in 1969 under an agreement with WHO, the centre provides post-basic training specially designed to cater for the variety of background and educational attainments of the students. Ten candidates have been accepted for the 1971 programme and WHO has recommended the appointment of a second tutor to provide for increased student numbers in future years.

The department also continues to arrange a wide variety of programmes for overseas students, in formally prescribed post-basic nursing courses and for observation visits within New Zealand.

Dental Aid

During the year Mr R. K. Logan, Assistant Director, Division of Dental Health, attended the Third Joint WHO/SPC Seminar on Dental Health Services. Mr M. J. Hollis, Principal Dental Officer (Research), was awarded 2 years' leave to take up an appointment with the South Pacific Commission as Dental Public Health Officer. Mr J. G. Fraser was seconded to the Cook Islands Health Department as Principal Dental Officer.

Five senior officers of the School Dental Service fulfilled teaching assignments at training institutions for dental auxiliaries in Tasmania, South Australia, Papua/New Guinea, and Thailand.

Special study and observation programmes have been arranged for public health dentists from Ceylon, Singapore, Thailand, Vietnam, Taiwan, Guam, the Trust Territories of the Pacific Islands, Western Samoa, Tonga, Cook Islands, Jamaica, and Trinidad.

Extension training at dental tutor sister level was given to school dental nurses from Ceylon, Indonesia, Singapore, Hong Kong, and Brunei. In the same period six students, four from Vietnam, one from Sierra Leone, and one from the Cook Islands, commenced basic school dental nurse training in New Zealand.

The department continues to receive inquiries about the New Zealand dental public health programme from countries all over the world.

Vietnam

The appointment of an environmental health officer and a public health nurse to the New Zealand Surgical Team at Qui Nhon will assist in developing the public health work of the team in such areas as tuberculosis control and child health and provide for advice and assistance in respect of rural water supplies, garbage disposal, food hygiene, etc.

South Pacific Board of Health

The department was represented at the twenty-fourth annual meeting of the South Pacific Board of Health held in Suva.¹

Principal items of discussion were medical research needs in the South Pacific area, health hazards of radioactive fallout, and the future of the South Pacific Health Service.

The agreement constituting the board is due for renewal and the question of changes in the board's function and structure has been receiving consideration and is to be raised at the next meeting. Factors influencing the need for revision as expressed at the twenty-fourth meeting ranged from the changing nature of the scope of individual health services to the new political status of Tonga and Fiji with independence.

There was unanimous agreement of the value of continuing the South Pacific Board of Health in a form more appropriate to the changing health services and political situation.

Fiji and Western Samoa

In 1969, Government agreed to provide free specialist treatment to patients from Fiji where this was not available in their own country. The three categories in which it was expected the majority of cases would require treatment are congenital heart defects, neurosurgery, and deep X-ray therapy. A maximum of 10 patients in any one year is allowed and each case must be referred to New Zealand by the Director of Medical Services of Fiji. Since implementation of the scheme treatment has been given to nine patients by the Auckland Hospital Board.

The department is continuing to assist the Government of Western Samoa with professional advice on the redevelopment of Apia Hospital. A recent comprehensive report prepared by Western Samoa giving essential data will enable detailed planning of stage I of the reconstruction of the hospital to commence.

South Pacific Commission

The tenth conference of the South Pacific Commission held at Suva in September was attended by the Deputy Director-General of Health. The health component of the Commission's programmes continues to be an important aspect of its work and the department, through the Ministry of Foreign Affairs, provides advice, and, where possible, personnel on short-term consultant assignments.

¹ South Pacific Health Service. South Pacific Board of Health. Minutes of the Meeting held at Suva, 22-23 July 1970. Suva, Govt. press, 1970.

Overseas Visitors

During the year an increasing number of visitors were received:

Australia—Mr D. G. Dunlop, First Assistant Director-General, Department of Health, Canberra; Sir Abraham Fryberg, ex Director-General of Medical Services, Queensland; Professor B. S. Hetzel, Department of Social and Preventive Medicine, Monash University, Victoria; Mr A. E. Shields, Pharmacist, Department of Health, Canberra; Dr P. S. Woodruff, Director-General of Public Health, Adelaide.

United Kingdom—Sir George Godber, Chief Medical Officer, Department of Health and Social Security.

Vietnam—Dr J. J. Enright, Surgeon/Leader, New Zealand Surgical Team, Qui Nhon; Dr N. K. Ngoc, Special Assistant to the Minister of Health for Planning and Foreign Aid.

World Health Organisation—Dr H. Abad-Gomez, Short-term Consultant in Education and Training; Dr D. E. Barnes, Epidemiologist, Dental Health Division, Geneva; Dr J. Hirshman, Representative, Fiji; Dr B. A. Lebedev, Director of Mental Health, Geneva; Miss M. Lenoir, Regional Nursing Officer; Dr K. Newell, Director, Division of Research in Epidemiology and Communication Science, Geneva.

Ministers of Health—Hon. A. M. Nyasulu, Malawi; Hon. Fuimaono Moasope, Western Samoa.

Other visitors included Dr J. C. J. Burkens, President, International Hospital Federation; Professor A. J. Patterson, Professor of International Health, Tulane University, New Orleans, U.S.A.; Dr B. K. Sen, Deputy Chairman, Singapore Public Service Commission; Dr J. Williams, Chief Medical Officer, Cook Islands.

Organisation of Medical Care

The Department of Social and Preventive Medicine of the University of Otago conducted a 3-day seminar in July, attended by over 100 people, on some of the more significant aspects in New Zealand today of the Organisation of Medical Care. Several officers of the department contributed papers to the seminar. The success of the seminar was contributed to by two visiting speakers, Professor Milton Roemer, of California, and Professor Last, of Toronto. The proceedings of the seminar have been published by the University of Otago.¹

ACKNOWLEDGMENTS

Mr I. C. Steinmetz, Chief Executive Officer (Health), retired on 3 April 1970, after completing 40 years' service, including 25 years in the department, and I acknowledge the fine contribution he made towards efficiency in the department.

Dr J. P. Kennedy, Director of the Division of Hospitals, retired on 29 June 1970, after 23 years in public health and medical service posts in the department. Dr Kennedy was held in the highest regard both within the department and in hospital board circles, and thoroughly deserved the many tributes to him on retirement.

¹ The organisation and evaluation of medical care: the proceedings of the post-graduate seminar held in Dunedin, N.Z., on 22, 23, and 24 July 1970. Edited by J. S. Dodge, Dunedin, Dept. of Preventive and Social Medicine, University of Otago, 1970.

It is with regret that I record the death on 6 January 1971 of Dr E. R. T. Overton, Medical Officer of Health, Rotorua, after 14 years' valuable service in public health principally in Napier and Rotorua.

I also extend my warm appreciation to the representatives of the Hospital Boards' Association, State Services Commission, Public Service Association, and the department for their efforts in the negotiations to determine conditions for the transfer of psychiatric hospital staff to hospital boards. Despite reservations still held by some staff, I am sure that agreements reached and the goodwill generated during the lengthy and involved negotiations will greatly enhance the success of the amalgamation of the two services to provide integrated and more efficient treatment facilities to general and psychiatric patients alike.

In concluding, I express my deep appreciation of the high standard of performance of the department's staff at all levels. During the year, shortages of personnel in many areas has placed heavy demands on officers in head office, districts, institutions, and other units and their response was highly commendable.

D. P. KENNEDY,
Director-General of Health.

PART I—BUREAU OF ADMINISTRATIVE SERVICES

Legislation

Pursuant to Section 7 of the Mental Health Act 1969, discussions continued during the year between representatives of the department, the Hospital Boards Association, the State Services Commission, and the Public Service Association on the transfer of staff of psychiatric hospitals to hospital board control. Apart from one or two matters which are still under consideration, full agreement was reached between all parties on conditions for the transfer.

As required by the proviso to section 7 (3) of the Mental Health Act, these agreements have been translated into legislative form and in November 1970 the Hospital Employment (Transitional and Miscellaneous Provisions) Bill was introduced into the House of Representatives. Because some individual staff groups expressed concern at some of the agreements reached on their behalf, the Bill has been referred to the Parliamentary Select Committee on Social Services to enable representations to be heard from these groups and others affected. The committee is to sit in April 1971 to hear submissions and is expected to report to the House soon after that date.

All eight hospital boards with psychiatric hospitals in their areas have signified their willingness to accept responsibility for administering these hospitals.

Accommodation

In May 1970 the head office of the department moved into the newly constructed Macarthy Trust Building on Lambton Quay, Wellington, where it occupies 10 of the 16 floors. In addition to the raising of staff morale because of the move to modern accommodation, another benefit has been the bringing together of previously separated divisions and branches into one building. A feature of the new accommodation is the adoption of "open planning" which has been widely accepted by staff.

The problems of movement of documents have been overcome by the recently completed installation of a pneumatic tube system, servicing all 10 floors. Telephone dictation to a bank of tape recorders in a central typing pool has also proved to be very successful.

Whangarei District Health Office moved into new accommodation in the State Advances Corporation Building during March. Nelson office will be transferring into a new Post Office block to be built and new premises are being prospected for the Timaru and Palmerston North offices.

Electronic Data Processing

This has been the first complete year of activity for the National E.D.P. Committee (Health), and has resulted in the adoption of a national plan for hospital board E.D.P. developments, the commencement of negotiations for installation of the first major hospital computer, the holding of a second seminar on electronic data processing for hospital boards, and significant progress with many other projects within the hospital service.

The national plan adopted by the committee divides New Zealand into four regions. Eventually, each hospital having more than 200 beds will have access to computer facilities centred on Auckland, Wellington, Christchurch, or Dunedin. The position of the small hospitals will be determined later.

The major hospital computer referred to above will be the first regional one and will be located at Auckland. Also, tenders have been called for the supply of the process control computer to be installed in Christchurch Hospital.

The second seminar, like the earlier one held in 1969, was highly successful, the theme being "The use of computers in hospitals". Those attending were from certain hospital boards not represented at the 1969 seminar.

Progress is also being made towards standardisation of systems and procedures in all hospitals to be affected by E.D.P. A common payroll system, and a common manual for computer operation and system investigation and documentation, are in the course of preparation.

Management Services

During the past year several aspects of the department's work have been the subject of Management Services reviews.

An examination of the Public Health Division in Head Office was completed, including reviews of maternal and child health, disease control, environmental health, occupational health and toxicology, health education, and some administrative activities. Planning is now well advanced for a review of public health activities in district offices.

Following the review of the work of the National Health Statistics Centre, proposals were made to extend the range of information collected in health resources, pollution, morbidity, and other areas, taking into account improvements in electronic data processing systems which will be available to the department and hospitals.

A comprehensive review of departmental forms has been made, several studies of office machine needs completed, and approval has been obtained to extend the department's telex system.

Current Management Services investigations include examination of clerical and secretarial services provided by the department to statutory boards and committees, and a review of the Division of Dental Health.

Planning, Programming, and Budgeting System

In accordance with Government policy of improving the techniques of financial management and planning in departments, a Planning, Programming, and Budgeting System was introduced in the department, from 1 April 1970.

The department's estimates of expenditure are now set out in standard expenditure groups for each of the eight major activity programmes, namely administrative services, dental services, hospital services, family health services, medical research, medical services, public health services, and welfare services. These programmes are further subdivided under 90 subactivity headings involving some 47 responsibility centres. This finer analysis under subactivities and responsibility centres will enable a better evaluation of performances to be made in future years, leading to greater efficiency and economy.

Staffing

Last year the department expressed concern that the full extent of staff increases sought, in order to meet demonstrated needs, had not been approved and pointed out that continued curtailment could adversely affect its efficient and economic operations. Nevertheless, it fully appreciates the purpose of the more stringent restrictions on staff employment levels in all departments of State, which Government imposed in February 1971; and, in full acceptance of its responsibilities, will endeavour to manage within the new limitations. In the circumstances, the department can see little hope of improving on the present standard of health services, but should their maintenance at the present level impose an unreasonable burden on personnel, it will certainly seek Government approval to essential staff increases.

The departmental theme for 1971 is "Leadership" and this is very appropriate to the circumstances. More than ever, strong leadership and direction at all controlling officer levels will now be needed to obtain the greatest possible co-operation and contribution from the restricted staffing resources.

Staff Health Service

The Pilot Staff Occupational Health Service, which operates for departmental staff in the Wellington area, has operated successfully for another year. A total of 240 examinations and interviews were carried out, an increase of 55 (29.8 percent) on the previous year.

This increase was entirely due to staff requesting to be seen by the service, the number of these rising from 27 to 126. This illustrates clearly that the service is acceptable to the staff and is valued by them.

The service operates in accordance with the ethics of industrial medical services and its records are entirely confidential.

The Health Services Research Unit

One of the most far-reaching and costly decisions made in the organisation of medical care relates to the numbers of hospital beds which should be provided in the various specialties in public hospitals. The basis employed for New Zealand hospitals originated from a survey made in 1962 by the unit conjointly with the North Canterbury Hospital Board.¹

The numbers of beds needed may vary greatly with respect to time and it is important to review periodically the basis of assessing need. During the year the unit designed a survey which has now been undertaken conjointly with the Wellington Hospital Board. The data of the survey have been collected and they are now being analysed. It is expected that a new series of reports will be published in the coming year.

The Medical Council of New Zealand was assisted in publishing its second report on the employment characteristics of medical practitioners.² The unit also provided information for further discussions dealing with doctor-population ratios.³

¹ N.Z. Department of Health. Special Report Series, Nos. 12 to 16 and 21 to 23.

² N.Z. Medical Council. The Employment of Medical Practitioners in New Zealand; a report on the 1967 questionnaire survey of the Medical Council of New Zealand. Wellington, 1968.

³ N.Z. Department of Health, Annual Report, 1970. Wellington, Govt. Printer, 1970, pp. 5-8.

After studying with the Division of Hospitals the characteristics of the waiting lists of several hospital boards, the unit and the division discussed with boards generally some recommendations for improving their management.

The unit assisted the Family Health Branch of the Division of Public Health in planning a survey and analysing information relating to the heights, weights, and maturation characteristics of children. A report on the survey has been prepared for publication in the Special Report Series of the department.

Also published during the year was a report on the survey of health needs of a group of aged persons in the Napier Health District. The study, made conjointly with the Medical Officer of Health, analyses the information gathered by Dr T. Blair Harvey in a series of clinical assessments.¹

The study made with the Superintendent of Cornwall Hospital on the prescribing and handling of drugs in a hospital ward was completed during the year and a report is ready for publication. As a result a new system of handling drugs has been installed in two wards using prototype drug trolleys. The possibility of extending the system to Auckland Hospital is being considered.

The study on the use of convenience foods in Rotorua Hospital will be completed when the data of the study are processed in 1971. The results will be useful in developing studies undertaken with the Division of Mental Health on the use of convenience foods in Oakley and Mangere Hospitals. A study on the feasibility of using central kitchens for food services is being made at Porirua and Tokanui Hospitals.

In the field of ergonomics the unit investigated the needs of disabled persons in the Pukeora Home in taking meals; and tenders have been called for the manufacture of prototype tables and chairs. A study involving some equipment needed to help multihandicapped children is in the preliminary stage.

A committee of the Board of Health has asked the unit to assess the needs of confused elderly persons in the community. The survey which would be necessary to provide the information sought could well be used to review the accommodation needs of elderly persons which were last assessed in 1962.² At the request of a committee representing the Plunket Society and the department, the unit also designed a study to compare the activities of the several nurses involved in caring for young children.

During the year the Senior Principal Medical Officer conducted the second seminar dealing with the use of electronic computers in a patient-oriented hospital communication system. Representatives of nine of the larger hospital boards have now met with the department to discuss this important subject.

¹ N.Z. Health Services Research Unit. A Clinical Study of Aged Persons in Old People's Homes and Hospitals in Hawke's Bay. N.Z., Govt. Printer, 1970.

² N.Z. National Health Statistics Centre. Elderly Persons Accommodation Needs in New Zealand, 1962. (N.Z. Department of Health Special Report Series, No. 10.) Wellington, Govt. Printer, 1963.

PART II—BUREAU OF PUBLIC HEALTH SERVICES

LEGISLATION

An amendment to the Health Act 1956 established the post of Deputy Director-General of Health (Public Health) and made provision for payment to local authorities of subsidies for sewerage works and water supplies.

The Dietitians Act 1950 was amended to allow flexibility in the choice of Registrar of the Dietitians Board. It also enables regulations to be made permitting the results of projects, assignments, or tests undertaken by students at a training school to be considered when deciding results of any examination conducted by the board.

Three notices were issued pursuant to the Health Act 1956 applying the Smoke Restriction Regulations 1964 to an additional six local authorities.

1. ENVIRONMENTAL HEALTH

Water and Sewerage Subsidy Schemes

During this first year of the extended scheme for subsidies there has been a steady flow of applications from local authorities for financial assistance towards their projects for main water supplies and sewage disposal.

Forty applications for subsidy for proposed works at a ratio of \$1:\$2 were approved to a total value of \$1,032,116. Of those approved 12 applications were for subsidy on sewage treatment (\$290,665), 12 for initial sewerage reticulation (\$401,887), and 16 for main water supply works (\$339,564).

The scheme for providing assistance to local authorities which had raised loans for water supply and sewerage works before 30 September 1969 is based on 10 per cent of the loan capital charges. Expenditure on this part of the scheme amounted to \$702,422.

Provision of Water Supplies

The Department examined and made recommendations to the Local Authorities Loans Board upon water supply schemes valued at \$4,125,340. This is \$4,143,260 less than last year.

Public water supplies serving the majority of the population continued to be satisfactory and the provision of subsidies on main water supply works has already encouraged a number of smaller local authorities to provide better water treatment facilities.

Most public water supplies were able to provide sufficient water to meet the demand during an unusually dry year, but all local authorities should be considering whether the existing sources of water will be sufficient for the next 20 years. If not, they should be looking for supplementary sources and arranging for the conservation of its quality and quantity.

1970 Grading of Public Water Supplies

During the year the public health risks of public water supplies were again assessed and a report made to the Board of Health¹. The report notes a substantial improvement since the original survey in 1961, but 42 per cent of all public water supplies (serving 15 per cent of the population) are still in some degree unsatisfactory by WHO standards. The majority of the unsatisfactory supplies are in small communities and reflect the difficulty such communities have in meeting the high cost of reticulation and treatment and in providing suitable staff for management and operation.

Fluoridation of Water Supplies

There has been an apparent drop in the percentage of New Zealand's population on a reticulated water supply who have fluoridation. The figure quoted last year was 66 per cent and this year it is 58 per cent. This is entirely due to the fact that the 1970 grading of public water supplies showed that there are now over 2,300,000 people on a reticulated water supply, whereas the previous figure, based on the 1965 grading, was just over two million.

Eutrophication

A research grant of \$1,700 for 2 years has been made to the University of Auckland to assist an investigation into the spread of algae in Lake Rotorua and the Waikato River, and the likely effects on the quality of the waters as sources of drinking water and for bathing.

Swimming Pools

The department is represented on a committee of the Standards Association which is considering a code of practice for swimming pools. Recommendations were made to the Local Authorities Loans Board in respect of proposals for swimming pools totalling \$587,000.

Local Emergencies

Although rainfall in the year was generally low, local heavy falls caused flooding, and emergencies were declared at Whakatane, Nelson, and New Plymouth.

Little danger to public health resulted from flooding in Whakatane and New Plymouth, although there were potential dangers from burst pipes and sewers. In Nelson, the public water supply became contaminated, and required the prompt installation of mobile chlorinators provided by the Ministry of Works.

Sewage Disposal

The department examined and made recommendations to the Local Authorities Loans Board on sewage and stormwater disposal schemes valued at \$18,727,880. This is \$9,539,180 more than last year.

¹N.Z. Board of Health. Grading of Public Water Supplies in New Zealand. (Report Series, No. 16). Wellington, Govt. Printer, 1970.

Environmental Pollution

During the year the Minister of Health approved the establishment of a Departmental Committee on Pollution of the Environment. The members of the committee are departmental staff, representative of all aspects of the department's responsibilities for control of environmental quality, together with three representatives of the Ministry of Works. This committee is investigating aspects of environmental pollution which directly affect human health, and will deal with matters referred to the department by the Environmental Council.

At present the committee is studying the disposal of solid wastes, particularly refuse disposal, under the terms of the Health Act, and will prepare a guide for the better operation of refuse disposal facilities.

Microwave and Laser Hazards

The potential dangers to health associated with the use of microwave cookers and lasers have been under review, and recommendations will be made for regulations to be made for the protection of the public.

Housing

Submissions were made to the Commission of Inquiry into Housing on matters affecting human health.

UN Conference on the Human Environment 1972

The department has made a substantial contribution to New Zealand's national report, which will form part of the background data for this important conference.

Training of Public Health Engineers

For some years the department has noted the shortage in New Zealand of trained public health engineers, and is pleased to record that the University of Auckland will commence a post-graduate diploma course in this discipline during 1971.

Rock Oyster Farming; Water Quality Control¹

Increasing attention is being given to the possibility of exporting farmed rock oysters, especially to the U.S. The U.S. health authorities insist on certification by the exporting country's health department of the quality of the water in which oysters for export are grown.

The Department of Health has been conducting a pilot survey of the quality of water and shellfish in the oyster growing areas of the Bay of Islands for the Marine Department to establish whether these waters meet the requirements of the Code of Practices of the Shellfish Sanitation Bureau of the United States Department of Health, Education, and Welfare.

¹See also National Radiation Laboratory, p. 51.

District Seminars

In accordance with the recommendations of the Board of Health Committee on the Care of the Aged¹ seminars were held at Auckland, Palmerston North, Christchurch, and Hamilton to which were invited local body and voluntary organisation officials concerned with this aspect of community responsibility.

Plumbers and Gasfitters Board

The board, acting upon the advice of the Department of Health, unanimously decided to seek the support of the Minister of Health for legislation, to be introduced in 1972, which will enable it to become autonomous. The conduct of examinations, hitherto conducted by the board, was, in 1970, transferred to the Trades Certification Board.

Health Inspection Services

The number of local authorities for which the Department of Health supplies inspectors continues to decline, though at a slower rate than formerly. Since 1961, when the department first examined local authority inspection services and found that it was serving more than 30 percent of the population, the percentage served has diminished to 3.1 percent.

Food Hygiene

Education in food handling techniques and the hygiene of premises to prevent food poisoning outbreaks is available and given by all health inspectors. In general these measures, together with regular inspections, and with the co-operation of most occupiers of food premises have led to a continuing upgrading of premises.

The evaluation method of measuring the degree of compliance is now used by the majority of local authorities. The improved service of processing the results at the Government's computer centre has resulted in more regular evaluation with returns now made available at quarterly intervals.

Hairdressers' Premises

Following the introduction of the Health (Hairdressers) Regulations 1967, which came into force in July 1968, the Department of Health, in conjunction with local authorities, undertook a survey of hairdressers premises during the latter half of 1970. This will establish a baseline against which future developments and progress can be measured.

Several health districts have reached a satisfactory standard but there is still some work required to bring all premises up to a suitable level.

¹N.Z. Board of Health. Committee on Care of the Aged in New Zealand. Report. (N.Z. Board of Health. Report Series, No. 13). Wellington, Govt. Printer, 1967.

Air Pollution¹

A comprehensive report on air pollution in New Zealand was published in August by the Board of Health.² The work of a 14-man technical committee under the chairmanship of Dr H. B. Turbott, summarises and comments on the effectiveness of existing legislation and the now considerable amount of information available about air quality in this country. The conclusion reached is that, while air pollution at present poses "no grave problem to physical health" the time is appropriate for enactment of legislation which "recognises air conservation as a guiding principle". The Minister of Health has directed the Department of Health to draft legislation as far as possible incorporating the detailed recommendations of the committee.

Rapid changes are taking place in the relative importance of various air pollutant sources, in control technology and in public attitudes to pollution. The Board of Health Committee therefore recommended legislation based on a broad general requirement to adopt all practicable measures to reduce discharge of any air pollutant to the atmosphere. It sees this requirement as applying to industry, motor vehicles and, in some circumstances to domestic premises. Few countries have, as yet, ventured such a comprehensive approach to air conservation. Inevitably there are included sources of pollution for which, at present, fully satisfactory control procedures are not available. The legislation to this extent will have to be enabling, rather than specific, but it is intended to move as quickly as possible towards effective control of all major sources of air pollution.

To assist the Department of Health in its task an Air Conservation Council is proposed. Pending enabling legislation a seven-man Board of Health Committee with Dr Turbott as Chairman will, as far as possible, exercise the functions of the proposed council. Technical panels under this committee are already studying problems involved in control of domestic heating and motor vehicle pollution and also the monitoring of the air of New Zealand to give warning of any undesirable changes which need correction.

Typical of the problems which require further investigation before effective legislation can be written is that of diesel smoke. Although in total quantity not an important pollutant it is the cause of much nuisance. The various causes of such smoke are well known but also vary in significance in different countries. The Ministry of Transport has an engineer working with the Department of Health's Air Pollution Unit and with the co-operation of diesel truck operators in Auckland to establish the New Zealand situation, knowledge of which is essential to the setting of reasonable performance standards. Similarly information has to be gathered on petrol engined vehicles, domestic heating, incineration, and several other problems to provide the firm basis on which the Air Conservation Council can make recommendations.

The provision of the technical background to legislation is mainly the responsibility of the chemical inspectors of the Department of Health. They have statutory responsibility for some 250 chemical works processes

¹N.Z. Division of Public Health. Air pollution section. Annual report of the Chief Chemical Inspector, Wellington, 1970, gives more detailed information on air pollution in New Zealand.

²N.Z. Board of Health. Air pollution. (Report Series, No. 15). Wellington, Govt. Printer, 1970.

which involves them carrying out annually many hundreds of tests for dust and fume emission and they are also much involved in monitoring air pollutants around major industries and in urban communities. Such test work is the only way of ensuring that good standards of pollution control are being exercised by industry, but no less important it provides the experience and information on which advice to industry and local authorities can be given.

During this year the chemical inspectorate carried out 238 statutory emission tests on scheduled industries, 4 of which were non-complying and corrective action was required; 169 non-statutory tests on scheduled industries and 32 tests on non-scheduled industries.

Mainly to meet the commitment for surveillance of the major aluminium smelter being built near Bluff an assistant chemical inspector was appointed to the South Island, bringing the Chemical Inspectorate to five persons. The programme of plant and animal sampling initiated last year to establish base levels for fluoride around the smelter area has been brought near completion with many hundreds of specimens analysed or held in cold storage. The D.S.I.R. and Department of Agriculture have also been involved but the supervision of air monitoring and process operation rests solely with the Department of Health. Two air monitoring stations have also been operated to establish background levels and three more are planned together with more numerous but simpler air quality test points. A scheme for internal supervision of the control within the smelter is being worked out with New Zealand Aluminium Smelters Ltd. Similar, though not as extensive, monitoring programmes are in operation around the steel plant at Waiuku and for other major industrial sites. Monitoring of air quality has been continued in Auckland, Christchurch, and several smaller urban communities. The small environmental laboratory in Auckland consisting of one chemist and two technicians has now been assimilated into the air pollution section.

2. PUBLIC HEALTH SERVICES

(a) Disease Control and Quarantine

Diphtheria

Notifications (two) for 1970 were the lowest for 5 years. Neither of these cases was serious. One was obtained from a leg infection in an 18-year-old, and the other from the throat of an 11-year-old in hospital for a viral infection.

Enteric Fever

Total notifications for the year were 22 cases, and these occurred in family groupings rather than as outbreaks. Three immigrant Polynesian families (including eight positives), were investigated in Auckland, and at each investigation, the carrier was found and given successful treatment. At Rotorua a similar situation was found with three children affected in one family and a relative was identified as the carrier.

In January, the s.s. *Oronsay* was detained at Vancouver with cases of typhoid aboard. At the invitation of the New Zealand Shipping Company, the Medical Officer of Health, Auckland, joined the ship

for its voyage from Suva to Auckland to clear passengers and grant pratique. No further cases were reported in this country in relation to the ship.

A small outbreak occurred at Wairoa in November, when two children were found to be suffering from typhoid through eating shell-fish gathered from an area polluted by the town's sewage outfall, and a month later, an adult case presented in the same township. A contact of this latter case was found to be a carrier.

Another group of cases (three) were found in the New Plymouth Health District and the carrier found was one of long standing. Surgical treatment cleared his condition.

Food Poisoning

The system of notification of outbreaks was continued from last year. There was a total of 13 outbreaks of this nature, some involving up to 56 persons, and others much smaller numbers. The majority were of bacterial causation, the commonest being due to *Clostridium perfringens*, invariably concerning ham and chicken. Only two outbreaks appeared to be due to chemical poisoning. As in previous years, the pattern appeared similar with receptions and institutional cooking being associated with the larger outbreaks. Unfortunately in some cases, notification was delayed, with the result that a conclusive investigation was not possible. Investigation of outbreaks is always followed up with health education and attempts to improve food handling and storage and knowledge of food hygiene.

Infective Hepatitis

Infective hepatitis figures (3,963) have shown a slight reduction on those for the last few years. Further work from the Christchurch District Office has emphasised the value of immunoglobulin in preventing secondary cases of hepatitis, lowering the attack rate four fold.¹ Generally, distribution is even throughout the country, and 64 percent of cases are under 25 years. Control remains difficult because of the limited knowledge we have of this disease, its causation, and mode of transmission.

Influenza²

A moderately severe epidemic occurred throughout the country in June and July. This began explosively and large numbers were involved, much more so than in 1969. In some centres, up to 30 percent of the population were involved. Voluntary reporting groups of general practitioners in three centres maintained a national surveillance programme similar to 1969. The virus was identified as A2/HK/68 and this was the same as had been detected in West Europe in the winter of 1969-70.

Leprosy

Five cases were notified and were all from the Pacific Islands. Close surveillance is continued of all these cases and contacts by the departmental consultant. No secondary cases were reported.

¹ANDREWS, D. A.: Immunoglobulin Prophylaxis of Infectious Hepatitis. *N.Z. med. J.* 73:467.

²See also National Health Institute Virus Laboratory, p. 44.

Poliomyelitis

The record of no cases since April 1962 came to an end in 1970 with the notification of two cases; one from Auckland and one from Tauranga. There were three other suspect cases but these did not prove to be positive. The need for protection by this simplest of vaccines has been again stressed during the year.

Salmonellosis

There was an increase in the number of cases with biggest numbers in the Auckland province. None appeared to be due to any food outbreak. Over 65 percent of notified cases were under 15 years of age.

Tuberculosis

There has been a further fall in the incidence of this disease with 91 cases less than the number of new cases notified last year. BCG vaccination and tuberculin testing of special groups were continued as in previous years. New entrants to post-primary schools are tested regularly and once again there was a fall in the tuberculin positivity rate among them from 1.11 percent in 1969 to 0.62 percent in 1970. The tuberculin positivity rate is regarded as a fairly accurate guide to the extent of tuberculous infection in the community so the continuing fall indicates a measure of success in the control programme.

Increasing numbers of persons are being x-rayed each year by the mass chest x-ray service.

During the year, a proposal to transfer the surveillance of tuberculosis patients to hospital boards was considered. Pilot schemes to assess the implications of such a transfer have been commenced in four health districts.

Venereal Diseases

There was a slight increase in the total number of gonorrhea notifications, but numbers are still below those of 4 years ago. The increase in female numbers at a time male numbers have diminished, reflects the continuing value in contact tracing.

Syphilis figures are still only half the number for 1966 and 1967, although there was a local increase of these cases in Wellington. The main increase in cases has been in non-specific urethritis in males and this has been the case throughout New Zealand.

Zoonoses¹

There was a small rise in the total number of leptospirosis cases, the majority being in the northern areas of the North Island and New Plymouth. Further work is continuing through district offices on the epidemiology of the various strains in this country.

The figures for hydatids were again low this year (21) but 4 of these were under 15 years of age.

Undulant fever showed a slight increase to 78 cases, largely from Auckland and Hamilton. Elsewhere, figures remain low. This disease is still found associated with occupational groups of farm and dairy products workers.

¹See also Occupational Health and Toxicology, p. 30.

Quarantine and Vector Control

No quarantinable diseases were reported, and regular inspections of aerodromes used for international traffic for evidence of mosquito breeding have been satisfactory.

The department is represented on the New Zealand Air Facilitation Committee. Following a recommendation made at its 1969 meeting, three members, including the department's representative, visited the international airports at Noumea, Fiji, American Samoa, and Tahiti. The objective of this visit being to inspect airport facilities and processing procedures, with a view to possible means of co-operation and the establishment of liaison with counterparts of the various Pacific Islands.

(b) Health Education

Programmes

World Health Day, 7 April. The Department of Health supported the Cancer Society in promoting the 1970 theme "Early Detection of Cancer Saves Lives". After intensive publicity during the first week in April, continuous educational programmes followed throughout the next 8 months. Informative material was distributed to schools, hospitals, pharmacies, large department stores, industrial clinics, and Government departments. Public meetings were held, and the news media gave every support in publicising the warning signs of cancer, and reiterating the theme.

The 1967 Poisons, 1968 Food Care, and 1969 Health, Work, and Productivity programmes were continued.

Poisons—The Chemists Guild and Pharmacy Board with support from the Department of Health held a National Poisons Week, to give the programme a timely boost. The follow-up of poisoning cases by public health nurses continues to give valuable information. However, the accidental poisoning of young children remains high, and methods need to be found to combat this.

Prevention of Child Blindness—A programme for the Auckland area was planned and carried out in conjunction with the New Zealand Society for the Prevention of Blindness.

Pacific Islanders—The orientation course for Pacific Islanders was discontinued with the establishment of the Ponsonby Citizens Advice Bureau by the Auckland City Council. Planned health education programmes were carried out in conjunction with the Bureau at Ponsonby and also the Cook Islanders Centre in Grey Lynn.

Throughout New Zealand, assistance was given with Conservation Week, Anti-Litter, and Education Week. The latter proved valuable in providing additional time with school children.

Special publicity was given to the availability of the rubella and measles vaccines.

Some districts continued promoting tetanus immunisation and most areas held in-service programmes on rescue breathing and venereal disease.

School Health—Three districts ran Form II health projects. Others concentrated on integrating the health handbook into primary schools, and assisting with family living programmes in secondary schools.

Training

Four students successfully completed the Royal Society of Health Diploma Course in Health Education. One student was from the British Solomon Islands Protectorate.

Training courses continue for nurses, inspectors, and hydatid control officers. In districts, in-service training was given to student nurses, teachers, kindergarten teachers, medical students, karitane students, and student psychiatric nurses. Assistance was also given with industrial and farm safety courses.

Visual Material—Publications

The *Health Bulletin* continues to provide a valuable service, with a circulation list now of 81,000.

There is a great demand for information material, and continuous culling of existing stocks and preparation of new material is a continuing task.

(c) Family Health

During the year the name of the Maternal and Child Health Branch was changed to Family Health. This more accurately describes the work of the branch and accepts that maternal and child health cannot be considered in isolation but is closely bound up with and influenced by the family as a whole.

The role of the father in the family has been receiving a great deal of emphasis in the past decade; the concept of the family is altering and more women are seeking employment outside the home, and new problems are emerging. Increasing attention too is being paid to the difficulties of adolescents and young adults out in the community who can present problems not only for themselves but for the family as a whole.

Included in the responsibilities of the branch is that of family planning. Regardless of population policy a nation must be concerned with the health of its women and children and family planning has been shown to be an important health measure. It is necessary for the reduction of infant, perinatal, and maternal mortality and essential to the management of many family health problems. Fertility rates in New Zealand are high compared with other developed countries and the Polynesian component is approximately twice that of the European. Although our fertility rate overall is decreasing because of the adoption by the community of family planning techniques, yet this is not taking place to any extent in the groups most at risk.

Maternal Mortality

The Maternal Mortality Research Act came into force on 1 April 1969. This Act requires a medical practitioner to notify any death that he suspects is a maternal death and it is then investigated by an assessor. All such deaths are reviewed by the Maternal Deaths Assessment Committee, the members of which are not aware of the identities of either the deceased or of the other persons involved. All medical practitioners will be circulated by newsletter to show the progress of the scheme.

The first effect of a strict notification system is to increase the number of reported maternal deaths and this is apparent from table 5 of the present report where maternal deaths for the year 1 January 1970 to 31 December 1970 are shown.

Aspects of the committee's findings have already been built into teaching programmes so that the feed back from the committee to the profession can be as rapid as possible. With improving notification rates it is anticipated that the committee will be able to make further recommendations on standards of care for pregnancy during the next few years.

Infant Mortality

The numbers and rates for neonatal, post-natal, total infant and still-births are set out in the table. The infant mortality rate established for the total and for the European population are the lowest recorded. The Maori rate has increased slightly but this could perhaps be anticipated in view of the dramatic decrease last year.

The neonatal death rates for both Maori and European have decreased. The discrepancy of less than 2 per 1,000 between them may be explained by such factors as for example the lower age of child bearing and the higher parity in the Maori.

The European post-natal rate has not moved in the last 8 years, in contrast with comparable countries overseas where the rate has fallen steadily over the same period. The Maori post-natal rate has fallen quite abruptly in the last 2 years.

The discrepancy between European and Maori infant death rates is predominantly in this area and is linked with such factors as the larger Maori family, an overcrowded housing situation and rural environment.

The rise in the still-birth rate could have been anticipated in view of the sudden drop in 1969.

General

The Maternity Services Committee of the Board of Health has completed its deliberations on the proposed revision of the Obstetrical Regulations 1963 and has, during the year concentrated on recommending practices which when issued will complement the requirements of the regulations. In addition it has discussed many aspects of standards of practice, obstetric training for nurses, education for parenthood, the practice nurse, illegitimacy, co-operation between obstetricians and paediatricians and has also made submissions to the Commission of Inquiry into Social Security Services. The obstetric facilities survey has continued during the year and is providing valuable information about the obstetric services throughout the country.

Child Health

Screening Test for Phenylketonuria and other Metabolic Diseases—This testing is now undertaken at the National Testing Centre in the Genetics Research Unit of the Medical Research Council, Dunedin. In 1970 the programme was extended to include four additional tests. A total of 60,905 New Zealand and 9,820 Pacific Island newborns were tested during this period.

Infant and Pre-school Children

The assessment and supervision of infants and young children in the first 5 years of life has continued to have priority in the child health work. Medical officers have carried out routine examinations of infants

aged about 9 months under the supervision of public health nurses and of any child under 5 years the nurses considered required the attention of the medical officer. In addition medical officers have continued to service plunket clinics and examine children in the third year of life. There is concern about the number of infants and young children who do not remain under regular supervision as it is amongst this group that the highest incidence of health problems occurs. Many families are excessively mobile and contact with child health and other services may be disrupted for long periods. Concentrated efforts to maintain contact have been made. Where addresses are known medical officers have carried out home visits to families who have no doctors and who are not attending infant and pre-school clinics.

1,845 infants and 26,850 pre-school children were examined by medical officers during the year, a preponderance of which were in the North Island.

School Children

Nine thousand nine hundred and sixty-seven were referred to medical officers during the year by the schools public health nurses and others working with children. Eight thousand and eighty-eight were found to have problems requiring further investigation or treatment. A high proportion of the problems was in the area of emotional and behavioural disorders and lack of school progress. It is considered important that these children should receive medical examinations and many of them have associated physical health problems and disturbed family backgrounds. In consequence of these findings a great deal of medical officer time has to be spent in advisory work and in consultation with other professional people involved in the well-being of children at school. Children have been referred to their own doctors for treatment and their co-operation with medical officers of the child health service is greatly appreciated.

Work has proceeded on the compilation of a report on the survey carried out last year on the physical development of school children in New Zealand and it will be ready for publication in 1971.

Polynesian Children

The difficulties experienced in maintaining high standards of health in Polynesian children are largely social and environmental. The infant and young child are more at risk in large families, particularly when there is inadequate housing and where parents fail to take sufficient note of illness in the young child at an early stage. Solutions to these problems have to be found by co-ordination of the work of the health services with those of other agencies, including those of the Maori and Pacific Island people themselves.

Maori children continue to require special attention although there is evidence of continuing health improvement. Reports from districts where there are concentrations of Maori families include evidence of higher incidence of infections compared with the New Zealand population as a whole. Commonly the initial problems of infectious episodes appear in the first year of life and occur again within the next 2 years. Nutritional problems including vitamin deficiencies have also been apparent in some of the children in the younger age groups.

The largest concentration of Pacific Island families is in Auckland although there are considerable numbers in other centres. Standards of child health in these families have, in the main, remained satisfactory but problems in communication have caused a breakdown in supervision where both parents are working.

Adolescents

Although adolescence is a period when health services are little involved as regards illness there is evidence that the incidence of accidents is high. Departmental health services have been involved on a considerable scale in the social and mental health aspects of youth. Drugs, venereal disease, and problems of behavioural and personal relationships have demanded a high proportion of time. The need for concentrated work with parents and children in the early stages of life is emphasised by these facts as is co-ordination of the various disciplines involved.

Immunisation—Triple Vaccine and Poliomyelitis

Schick surveys and postal questionnaires undertaken again this year in a number of health districts have demonstrated that a satisfactory level of immunity is still being maintained in the community. In some local areas in the North Island attendance at medical practitioners for vaccination against diphtheria, whooping cough, tetanus, and poliomyelitis is too low. Departmental officers have held immunisation clinics in these areas to maintain immunity levels.

Measles Vaccine

Vaccine was made available to general practitioners at the beginning of the year and parents were encouraged to take their infants and pre-school children for vaccination. The incidence of measles appears to have dropped during the year and may in part be related to this vaccination programme.

Rubella

On the recommendation of the Epidemiology Advisory Committee of the Board of Health the Government provided a rubella vaccine free to general practitioners for the vaccination of girls and women of child-bearing age and of pre-school children aged 4 years. In addition, school children aged approximately 5 to 10 years were vaccinated in primary schools by departmental doctors, with the intention of blocking the main source of infection and preventing an epidemic of the disease. The school programme was very successful, over 95 percent of parents gave consent for the vaccination and about 363,000 were vaccinated throughout the country. Due to the problems connected with the prevention of pregnancy within the first few months after vaccination the number of women vaccinated appears to have been small.

Health Camps¹

In the selection of children for admission to health camps difficulties have been experienced during the year concerning the number of children requiring placement away from home who have emotional and behavioural problems in association with physical health problems.

¹Annual Report—King George V Memorial Children's Health Camps.

Although children with major emotional disorders are not able to be adequately assisted at the camps children suffering from substandard physical health often in combination with minor emotional disturbance derive marked benefit from admission.

Audio-Vision Testing

Thirty-four thousand nine hundred and thirty-five children were referred for further investigation as the result of 189,496 vision and 164,124 hearing tests carried out in the schools. It is anticipated that testing will extend into the pre-school age groups next year.

Health Education

In general medical officers have given less time in formal group health education this year. The effect of other trained personnel undertaking this work has been apparent, particularly in the secondary schools. Medical officers have participated in programmes arranged by schools and other organisations and have advised on these programmes. Increased time has been given to participation in training groups and courses for teachers, nurses, and other professional people working with children. It has not been found that within the recently introduced 3-year course for teacher training more time has been made available for the study of health. The handbook of suggestions for health education in the primary schools was distributed during the year by the Education Department and discussions on its use have been initiated in a proportion of the schools throughout the country.

Safety

The large number of accidents involving injury to children is a matter for grave concern, particularly the high proportion in the 1 to 5 years age groups. It is at these ages when poisoning, burns, and scalds are most common. The inter-departmental committee on flammable fabrics convened by this department will meet again next year. A large amount of information has been considered in the light of which it has been decided that no further legislation should be recommended at the present time. Hazards to children are many and various, and information on these dangers will be continually brought before the public in every possible way.

Publications

Tonkin, S. (1970): Maori Infant Health I; Trial of Intra-muscular Iron to Prevent Anaemia in Maori Babies. *N.Z. med J.* 71:129-135.

Tonkin, S. (1970): Maori Infant Health II; Study of Morbidity and Medico-social Aspects. *N.Z. med. J.* 72:299-238.

Tonkin, S. (1970): Height, Weight, and Haemoglobin Study of Adolescent Maoris and Europeans. *N.Z. med. J.* 72:323-327.

(d) Occupational Health and Toxicology

The Occupational Health Unit

The laboratory processed 1,627 specimens, an increase of 149 (10.1 percent) on last year, and the highest total to date. In addition, 24 in-plant investigations were carried out, twice the number done in 1969.

The level of work at district level has been maintained. The hearing conservation programme has continued and the passage of legislation in late 1969 on industrial exposure to noise and on compensation for noise-induced hearing loss, can be expected to increase substantially the demand by private industry for noise surveys. Five hundred and thirty-eight Dräger gas detection tubes were issued.

Notification of Occupational Diseases

The number of notifications investigated fell very slightly on the 1969 figure, from 835 to 809. Details are shown in table 18.

There was a fall in the number of notified cases of skin disease from 396 in 1969 to 303; mainly due to a reduction of the number of cases due to mineral oils, organic solvents, natural products (wool, tobacco, etc.) and unspecified chemicals. The latter category may not represent a true fall since cases due to chemicals used in the plastics industry rose from 15 to 20. There was a rise in the number of cases of skin disease due to physical causes from 12 to 38 cases.

The fall in cases due to mineral oil, from 32 to 20, is of interest since it coincides with the issue of a warning notice concerning the carcinogenicity of mineral oil.

The number of diseases due to dust, fumes, vapours, gases, and mists fell from 70 to 64. The most pleasing aspect of this was a reduction in lead poisoning from a rather high figure of 21 in 1969 to 2 in 1970. Poisoning by insecticides and agricultural chemicals fell slightly from 18 to 16 while there was a general increase in cases from exposure to gases. Organic solvent poisoning rose sharply from 2 to 13 cases indicating that while there may have been a little less dermatitis, these compounds need to be treated with respect.

Disease due to physical agents fell from 41 to 29. It should be noted that there are probably many more cases of hearing loss than are notified. The payment of compensation for this condition may well give rise to an apparent increase in the number of cases. It is sad to record that in 10 cases there was permanent damage to vision due to accident.

*Leptospirosis featured among the diseases due to infectious agents, the number of occupational cases being reported rising from 279 to 333. Undulant fever also showed an increase from 45 to 77 cases, most of these being centred on the Auckland area.

Doctors were responsible for the notification of 532 (67.0 percent) of the cases notified, the other cases coming to the attention of medical officers of health, the Department of Labour, or being notified by employers or unions, etc. This is a higher proportion of notifications by doctors than in previous years.

Control of Health Hazards: Lead and Electroplating Industry

1. *The Lead Process Regulations 1950*—The increase in lead surveillance, introduced in 1969-70 with the coproporphyrin urine test, was maintained in 1970 with good results. As mentioned above, there was a substantial fall in the number of cases of lead poisoning.

*See also Zoonoses, p. 24.

Over 4,500 surveillance tests were carried out on 1,609 workers. As a result, 46 workers were suspended, 1 fewer than last year. When a worker fails the coproporphyrin screening test, a specimen of urine is sent in most instances to the Occupational Health Unit for analysis. Excretion is used as a measure of body load, and if it is excessive, the worker is removed from contact with lead, although he usually continues to be employed in the same factory.

2. Electroplating Regulations 1950—A review of the system of surveillance resulted in a reduction of the number of examinations from 2,423 to 1,797. A reduction in the frequency of examinations has been compensated for by an annual joint inspection with the Department of Labour with particular emphasis on housekeeping. The aim is to encourage workers to rely less on examinations and to take a more responsible personal attitude. This continues a general policy by which employers were required 4 years ago, to test the air over their own chrome baths weekly. The effect of this regulation has been striking as was indicated in the annual report last year. In 1970, a new record was achieved in that only 1 chrome ulcer in the nose was found compared with 33 in 1966.

Seven chrome ulcers on hands were found and 16 men suffered other conditions arising out of this occupation. No man required suspension. Details of the surveillance of lead and electroplating workers are shown in table 19.

Medical Nursing and First Aid Services

1. Services in Private Industrial Undertakings and Government Factories—Table 20 shows the position of medical and nursing services at the end of 1970 and it is apparent that the growth of services in private industry continues.

The number of plants with a medical service rose from 76 to 83 but the number of doctors employed fell slightly from 62 to 58. This indicates that more doctors are following a part-time speciality in occupational medicine and that plants prefer to employ these doctors. Over 50,000 workers are now covered by a medical service.

The training of doctors in this speciality is important and opportunities must be created for an exchange of views. During 1970, a seminar was held in Auckland with the assistance of the Workers' Compensation Board and proved highly profitable in this respect.

Nursing services also continue to increase and the two-nurse plant, once a rarity, is becoming much more common. One hundred and nine nurses are now employed, 13 of these being part-time (more than 10 hours weekly), in 101 plants. This is an increase on last year of four full-time and four part-time nursing positions, in six plants.

The training of nurses in occupational health is also important and the practice of running 3-day courses has continued, two courses being held in 1970. The theme running through the present series is primarily psychiatric.

A report on medical and nursing services in private industry is not complete without a recognition of the progress that has been made by management in establishing these services. The number of firms with

some type of service passed the century mark in 1970 and indicates that the idea of such provision has been built into the fabric of industrial organisation in this country and has come to be accepted by both management and workers.

2. Occupational Health Centres and Waterfront Clinics—The number of treatments given in occupational health centres and waterfront clinics was the highest recorded since these centres were established—a total of 45,347. This is in part due to the opening of a new centre, financed jointly with the Workers' Compensation Board, at Rosebank Road, Auckland, in February 1970. This centre has developed well with considerable local assistance from industry. In recent years, the establishment of new centres has had more local support from business men than in earlier days and this has undoubtedly contributed to their success.

The physiotherapy area of the Penrose Occupational Health Centre, which is equipped and operated by the Auckland Hospital Board was extended during the year; this has resulted in increased service.

Future plans include the rebuilding of the Foreshore Occupational Health Centre, Dunedin, following re-negotiation of the lease, and the establishment of a centre at Porirua, for which a section is already held.

From time to time, there is pressure by local groups for establishment of a centre and sometimes an assessment of the industrial potential shows that it would not be economic, from the point of view of nursing and medical time, for the centre to be established. Similarly, it happens that industrial development sometimes moves away from an older established centre with the result that the operation of the centre becomes uneconomic. This has arisen at Hornby Occupational Health Centre in Christchurch and has resulted in severe curtailment of clinical services. With the consent of the Workers' Compensation Board, the building is now used almost entirely for public health services, but the programme of the nurse has been altered to allow an intensification of factory visiting and the preventive side of her occupational health work. A continuing review is maintained on the services and hours of opening of all other clinics to ensure that they are operating at an economic level.

3. Medical Examination of Young Workers—The number of medical examinations of young workers, carried out under the Factories Act (1946) was 2,129. One male worker was rejected from the proposed work because he was colour blind.

Toxicology

During 1970 responsibility for the administration of the poisons legislation as it relates to non-therapeutic poisons was transferred from the Food and Drug Branch to the Occupational Health and Toxicology Branch. At the same time the Minister of Health established an advisory committee on commercial, household, and agricultural poisons under section 5 of the Poisons Act 1960 with the following terms of reference:

- (a) To advise on the scheduling of poisons affecting their availability to the public and commercial users.
- (b) To consider and advise on procedures for the regulation of the availability of poisons to the public and commercial users.

- (c) To consider and advise on any other matters relative to the use and availability of poisons, as these are affected by the Acts and regulations administered by the Department of Health.

Nominating bodies are—Department of Health (two members), Department of Scientific and Industrial Research, Agricultural Chemicals Board, Otago University Medical School, New Zealand Retailers' Federation, and the Agricultural Chemicals and Animal Remedies Manufacturers' Federation.

The main reasons for the establishment of the committee are the increase in the number and types of pesticides being used in recent years, the need for proper evaluation of the data which accompany the introduction of new chemicals and the need to ensure that legislation is up to date. The committee is meeting regularly and its recommendation that the poisons legislation be reviewed has been accepted by the Minister of Health. Interested organisations have been invited to make submissions and many have taken advantage of this opportunity.

More than 5,200 persons were certificated for the use of deadly poisons and approximately 2,500 persons were issued with licences to pack or sell poisons in New Zealand during 1970.

Poisoning Cases (Table 9)

There were 4,472 cases of poisoning notified during 1970. Of these 2,467 involved children 5 years and under (approximately 55 percent) which is slightly lower than last year's figure.

Nearly 3,000 cases were caused by medicinal agents. The largest numbers occurred with barbiturates (279 cases), other sedatives, hypnotics, and tranquillisers (815 cases), and aspirin and similar compounds (214 cases). Forty-four deaths were notified, 20 of these being from the effects of barbiturates.

Non-therapeutic substances were involved in approximately 1,500 cases with 34 deaths being notified. Ninety cases were due to the effects of kerosene, 78 to gasoline, 98 to other petroleum products, 113 to pesticides and 35 (27 in age group 36 and over) to carbon monoxide. Of the 34 deaths notified, 22 were caused by carbon monoxide.

(c) Public Health Nursing

Public health nurses have continued to work mainly in the fields of family health (including the health of school children) and also in disease control, occupational health, the care of the elderly and people requiring supervision and assistance with psychiatric problems. In rural areas they give nursing care to people in their own homes and in almost all areas public health nurses are participating in the educational programmes of schools of nursing.

At the end of last year 14,801 babies and their parents were under the supervision of public health nurses. This was an increase of 879 from the previous year. Nurses made 41,352 visits to schools in relation to the health problems of children of school age; an increase of 3,161 on 1969. There was also a marked increase shown in the 368,859 visits

which these nurses made to private homes, a high proportion of this work being undertaken to assist those with psychiatric problems. Psychiatrists and general practitioners are referring an increasing number of patients for supervision and public health nurses are encouraging and assisting many people to obtain earlier medical attention.

There was a further slight decrease in the health education classes which nurses conducted in schools indicating that their function is changing as planned in this respect. They are however continuing to help school teachers with this work. Public health nurses participated on 1,336 occasions in providing health talks for various groups in the community. The demand for this assistance continues to increase.

The work of the nurses in relation to disease control included:

- (a) Assisting with the control of tuberculosis by undertaking diagnostic testing of school children and other groups.

Investigating notified tuberculosis cases for the purpose of locating the possible source, supervising the contacts of those infected, giving health teaching and other nursing assistance with related health and social problems, assessing financial and housing requirements, ensuring that medical supervision is received and, in some cases, supervising medication.

- (b) Assisting with the control of venereal disease by visiting female contacts and defaulting patients to ensure that treatment is obtained and continued; assisting with related social and welfare problems detected during interviews and referring these elsewhere as necessary.
- (c) Assisting with community surveys on immunisation levels and on the prevalence of disease.
- (d) Participating in any programmes aimed at the prevention and control of disease.

Pilot schemes on the supervision of tuberculosis patients are being undertaken in four health districts. Chest clinics in these districts function along similar lines to other hospital out-patient clinics. Public health nurses do not visit patients as a routine but they visit selected patients who require close supervision.

In one health district a pilot scheme is in operation where recently bereaved elderly persons are visited by the public health nurse. An interim report indicates that the staff consider important preventive work can be done with this group.

The qualifications and experience required for the work of public health nurses and for their promotion are at present being reviewed by a representative committee. In this work the nurses themselves have given considerable assistance with the intention of publishing guidelines for the recruitment and orientation of staff. The use of uniforms is also being studied with a view to making recommendations for the future.

In-service education programmes have continued both locally and to some extent regionally. Several newly appointed nurse inspectors have attended State Services Commission management courses and during the year a national conference and workshop was attended by nurse inspectors. The theme "Planning and Evaluation of Public Health Nursing" gave the opportunity to consider the value of well thought out plans for nursing care and many nurses have gone on to use this means of identifying and planning to meet individual and family needs.

3. FOOD AND NUTRITION

(a) Food

Milk

Departmental sampling of 2,723 specimens of milk is reviewed in Table 21 of the Appendix. These are not random samples in a statistical sense, so are not representative of the total "town milk" supply.

Milk sold in New Zealand continues to maintain a generally high standard, although some increase is apparent in the proportion of non-conforming samples in some North Island districts.

The failure to meet the solids-non-fat requirement is largely the end result of changing to "high volume" dairy breeds, as has happened in other parts of the country.

Food Complaints

One thousand four hundred and eighty-one complaints of unsound or unfit food were investigated during the year by the department's inspectorial staff. Forty-six prosecutions arose out of these.

Complaints included first aid dressings in meat pies, cakes, and sweets; cigarette butts were discovered in fish and chips and in bread; a miscellany of metal and glass objects were found in bread, along with mouse droppings and insect frass; a snail was found in milk and ants in soft drink. Beverages, pies, cakes, bread, fish and chips, meat and milk all suffered from the ubiquitous fly, which resulted, for example, in the appearance of live maggots on a hamburger.

On 48 occasions, departmental officers seized and destroyed food which was unfit for human consumption. Inspectors from local authorities seized unsound food on a further nine occasions.

Misrepresentation of Food

Although food legislation in New Zealand is primarily concerned with ensuring wholesomeness of foodstuff, it is also very much concerned that their description is correct. In this respect, it is the department's responsibility to question false or misleading descriptions. Each year, names held in universal esteem by the consumer (and most manufacturers) as denoting a particular standard of quality, are subjected to abuse by traders. Words, such as "choice" or "pure" are sometimes used to describe products in a manner that suggests the adjectives to be drained of real meaning. Fruit derivatives diluted to make beverages have been described as "fruit juice"; mullet has been described as "salmon style" and even the unique toheroa has had its imitators. Most complaints of misrepresentation can be amicably resolved in discussions between the manufacturer and the department. However, occasionally discussions fail to resolve the problems, and it is necessary to resort to the law courts for a decision. The department has, in the past, successfully prosecuted on a number of occasions, and this year obtained a conviction against the manufacture of a canned fish product, labelled "salmon type", but manufactured from grey mullet. With the enactment of the Food and Drug Act 1969, the procedure for dealing with complaints of this nature was placed upon a more formal basis, and the department will continue its surveillance of food labelling and advertising, and take whatever steps are necessary to ensure that the food the consumer purchases is of the quality and composition he has been lead to expect.

(b) Nutrition

Iodised Salt

Over the past year, there has been some speculation that sales of plain salt (non-iodised) increased at the expense of iodised salt. There appears to be little real evidence to support this contention, and a survey recently conducted by the department tends to indicate that there has been no significant falling-off in the consumption of dietary iodine. Goitre is a problem frequently reviewed in health education programmes.

Infant Nutrition Survey

For the past 2 years, the Nutrition Section has been working in association with the Epidemiology Research Unit, Wellington Hospital, on a prospective survey of diets and nutritional status of three groups of infants—an urban European group and two Maori groups, one rural and one urban. The original 241 infants were all aged between 2 and 12 months when first seen in 1969; 234 of these were seen 1 year later in 1970, and changes in diet, growth, and haemoglobin values were recorded. Nutrient intake and feeding practices were similar in the three groups, except for iron intake. This was highest in the rural Maori group in the first year of life, because of their greater use of iron-enriched milk powder and medicinal iron. However, anaemia was equally common in both groups of Maori children between the ages of 9 and 24 months, and there was no evidence that this was related to dietary deficiencies.

The project has been funded by the Medical Research Council of New Zealand for a further 2 years, and it is providing an opportunity of obtaining useful information on current feeding practices of young children in New Zealand and their physical development.

Dietary Survey of the Elderly

In Christchurch the Health Department Dietitian made a survey of diets of a group of elderly women living in an old people's home. Little is known of the meal patterns and food intake of elderly persons in institutions in New Zealand and this was the first of a series of studies that will provide background information for planning and advice on food service in old people's homes. The subjects of the Christchurch survey were aged from 73 to 98 years (median 86 years), and they were found to be well catered for, with a nutrient intake which was higher than that reported for old people living alone or with relatives.

4. DENTAL HEALTH

The idea of training and employing dental nurses who would be directed and supervised by Government dentists to operate a school dental service, originated in New Zealand. The current year is the fiftieth anniversary of the service and the review included as Appendix II describes the services provided and the results which have been achieved.

The School Dental Service

During the past year the School Dental Service has moved still closer to the stage where it is meeting the existing needs. On 31 March 1971 there were 1,354 trained dental nurses in the field compared with 1,341

in March 1970, providing care for approximately 590,885 children. Resignations from the service have been balanced by reappointments of married nurses, nurses returning from overseas leave, and new graduates.

The beneficial effect of fluoridation can be expected to increase year by year. As the younger children and their teeth develop, more and more children will benefit and the workload of the school dental nurses will diminish accordingly. The improvement noticed last year is again evident. Although 7,921 more children were treated in 1970-71 than in 1969-70 the total fillings required fell by 64,759. This favourable trend should continue as the benefits from the fluoridation of public water supplies continue to take effect.¹

The number of teeth lost by extraction is still extremely small. Between the ages of 5 and 13 only 1,323 permanent teeth were extracted for 502,312 children, or .0026 per child, again providing striking evidence of the high level of caries control which has been reached not only by fluoridation, but by constant care and dental health education. The percentage of pre-school children being enrolled continues at a high level.

Training

The number of students in training is 400. During the year 195 students graduated and 220 new trainees (including 4 from overseas) were appointed. Recruiting figures were down on recent years, indicating greater competition from other careers. A 12-unit section clinic is under construction in the grounds of the Johnsonville School, Wellington. This is the first phase of a long-range plan to vacate the Dental Clinic Annexe in Tinakori Road, which was first occupied as a temporary measure in 1936. The Johnsonville section clinic, and another to follow, will be an integral part of the Wellington School for Dental Nurses although located in residential areas where numbers of children can attend more conveniently.

Similar section clinics are functioning satisfactorily in Auckland and Christchurch.

Adolescent Services

During the year 154,591 teenagers attended private dental practitioners for examination and treatment at 6-monthly intervals. These services were provided on a fee-for-service basis by 684 practitioners, representing almost all those who are engaged in general practice. A revised scale of fees negotiated with the New Zealand Dental Association in 1970 is proving generally satisfactory. However, the fees for services requiring the assistance of dental technicians are being eroded by increased laboratory charges which at present are not subject to any control. The Dental Benefits Central Advisory Committee continues to function and provides valuable advice and assistance.

Dental Health Education

As fluoridation and regular control of all primary and intermediate school children by the School Dental Service becomes effective, treatment needs diminish, and greater attention can be given to the dental health

¹Fluoridation. See also Environmental Health, p. 18.

education programme. This is becoming increasingly noticeable and is an encouraging sign that the standard of dental health in the children of New Zealand is improving. New publicity material and teaching aids have been produced or acquired during the year. For the third time the Apple and Pear Marketing Board has published a high quality calendar which is again being distributed to schools throughout New Zealand. A programme of adult education has been maintained and 308 health exhibits were held during the year.

Dental Council and Dentists' Register

There are 1,297 dentists on the Register of Dentists, 973 of whom have annual practising certificates. During the year 3 Department of Health bursaries were awarded, bringing the total number of undergraduates receiving financial assistance from this source to 17.

A Bill is in the course of preparation to amend the Dental Act 1963 to make provision for the Dental Council to function as a corporate body.

Dental Technicians

The initial registration of dental technicians and laboratory operators under the recent Dental Technicians Regulations to the Medical and Dental Auxiliaries Act 1966, has been completed.

Currently, on the decision of the Dental Technicians Board, arrangements are being made to transfer control of training of dental technicians from the Apprentices Act 1948 to the Technicians Act 1967, involving the formation of a Dental Technicians Training Council and the preparation of training schedules and the appropriate industrial agreements and determinations. Block courses are proposed at the Central Institute of Technology.

5. PUBLIC HEALTH SCIENTIFIC SERVICES

(a) Environmental Health Laboratory

The laboratory collected and analysed 1,063 samples for the Auckland Air Pollution Research Committee. A pamphlet was prepared on behalf of the committee for Conservation Week explaining to the public the sources, levels, and trends of air pollutants in the Auckland area.

A further 966 routine air monitoring samples were analysed for the chemical inspectors, and a number of these were to determine the background level of fluorides in the locality of the Bluff aluminium smelter. One hundred and seventy non-routine analyses were undertaken in addition to the evaluation of smoke tapes. Chemical investigations of analytical and sampling techniques were also completed by the laboratory.

A number of investigations were made in industries for the Occupational Health and Toxicology Branch. This included continuous monitoring of carbon monoxide on the Auckland Harbour Bridge.

The testing and calibration of anaesthetic inhalers has continued and the second testing of trilene inhalers for public hospitals is nearly completed. One hundred and twenty-one trilene inhalers were tested, of which 18 were found to be faulty. The maintenance and testing of anaesthetic vaporisers has now completed a full year. The scheme has run smoothly and only a small percentage of machines now have to be sent to England for repairs.

(b) National Audiology Centre, Hearing Conservation

An important recent development in audiology is evoked response audiometry.

This technique is based on an electro-encephalograph linked to a computer and is probably the most reliable objective method of measuring hearing thresholds at present available.

The necessary equipment for this has been set up in the neurophysiology department of the Auckland Hospital and staff of the National Audiology Centre have been working with Hospital staff in the project.

This highly complex technique available for the first time in this country has already proved of considerable value in elucidating diagnostic problems outside the scope of conventional methods.

Work has continued during the year upon the Kay Binaural Sensor for the Blind. Considerable technical improvements have been made and very satisfactory results have been achieved in the audiological research programme.

The New Zealand and Australian trials of the aid proved highly successful and the team is looking forward to the crucial large-scale trials in America in 1971. The centre's senior audiologist will be with the team for the whole period of the trials.

A new piece of equipment, the electro acoustic impedance meter has proved of considerable value in diagnosing middle ear conditions. Many otologists have shown much interest in this and have come to see the meter in operation. It seems likely that this instrument will soon be in routine use.

Late in 1970 the final prototype of the "head only" hearing aid for deaf-blind children was tried in a School situation. This was most successful and small scale manufacture is about to commence.

The solid state group speech trainer developed earlier by the centre is now being manufactured in New Zealand and already some are in service in schools.

The speech tapes produced by the NZBC under technical guidance from the centre have been in demand and copies have been made for distribution throughout the country.

Various training courses at different levels were held throughout the year. Those attending included Health and other Government departments, service personnel and other people in private industry.

The centre's *Newsletter* has proved to be an invaluable medium for keeping people in the audiological field up to date.

Noise

The continuing interest in noise problems, especially in the environment, has made increasing demands on the time of the centre's engineers. The "Draft Notes on Environmental Nuisance Noise" have now been issued in a final form and copies have been distributed to local authorities and to departmental inspectors of health. Some interesting problems have been investigated in regard to motorway noise and advice and assistance were given to a firm of consulting engineers who made a report on predicted traffic noise in the area of the proposed new Dunedin Hospital complex.

The centre's senior engineer is a member of both the Departmental Committee on Pollution of the Environment and the Light and Microwave Hazards Committee and has thus ensured that any noise hazards within the purview of these committees have been defined. Work for various Standards Association Committees continues and late 1971 should see some final documents on environmental noise being passed to the Standards Association.

At the request of the Civil Aviation Division of the Ministry of Transport a noise survey was carried out on aircraft operating from Nandi Airport, Fiji. This was the centre's first project on aircraft noise and valuable experience was gained. A medical officer from the Civil Aviation Division received training at the centre in the measuring of aircraft noise and will continue the Fiji survey in the coming year.

Ground noise at New Zealand airports and the possibility of providing audiometric testing equipment at some airports are also under investigation.

A noise survey of National Airways Workshops to identify areas of hazard was commenced this year and is expected to be completed in 1971.

The following tables summarise some of the centre's major functions:

Otological Examinations—

				Initial	Review	Total
Audiology Centre	..	..	..	54	52	106
School for Deaf	..	..	..	92	80	172
				—	—	—
				146	132	278
				—	—	—

Hearing Tests—

				Initial	Review	Total
Normal hearing	..	..	..	209	29	238
*Mild loss	..	..	..	167	40	207
Significant loss	..	..	..	83	44	127
Severe loss	..	..	..	5	2	7
				—	—	—
				464	115	579
				—	—	—

Adult Assessments—84 plus 7 "Foundation for Blind".

Hearing Tests for Babies—

	Passed	Doubtful (for recall)	Passed	Revision Mild Loss	Signf.	Sev.	Total
National Women's Hospital	248	13	14	5	1		281
St. Helen's Hospital	71	4	1	..			76
Doctors, Plunket, and other referrals	61	26	12	8	2	1	111
	—	—	—	—	—	—	—
	380	43	27	13	3	1	468†
	—	—	—	—	—	—	—

*Mild loss (initial only) are for retesting—may prove "normal" later.

†Because of a training course for audiologists, baby testing for February was carried out at the beginning of March and will be included in next year's annual report. This would have brought the number of babies tested for 1970 to roughly the same number as for 1969.

Advisers on Deaf Children—were in attendance 22 days

Total No. of Hearing Aids and Ear Inserts Issued During 1970—

Hearing aids	..	..	195
Ear inserts	..	..	369

Engineering—

Noise Investigations:

Community	..	..	13
Industrial	..	..	10

Calibration and Maintenance Services:

Audiometers	..	..	129
Sound level meters	..	..	35
Light meters	..	..	17
Speech trainers	..	..	28

Hearing Aids Tested and Approved .. 21

Hearing Aids Tested and Rejected .. 8

(c) National Health Institute

Epidemiological Section and the Cross Infection Laboratory

Epidemiological studies continued to be mainly concerned with hospital cross infection.

Although the staphylococcus continues to be of diminished cause for concern, from time to time hospitals do report minor outbreaks of staphylococcal type sepsis, and 3,084 of the total of 4,892 specimens received in this laboratory were cultures for phage typing, most of these being of hospital origin. A new phage, 88, received from Colindale has, in routine use, shown only a 1.4 per cent incidence in typed cultures.

During the latter part of the year all routine cultures of staphylococci were tested for methicillin sensitivity. So far no staphylococcus resistant to this antibiotic has been detected, something which is contrary to the findings of other countries.

One hospital had a small outbreak of streptococcal sepsis. Nevertheless, in spite of a reported increase in this type of infection in the United Kingdom, there has been no increase in streptococcal infections, nor their complications, in this country to date. This has been true notwithstanding the fact of the association of the streptococcus with previously reported extensive outbreaks of impetigo among school children.

In common with others elsewhere in the world, New Zealand hospitals have been experiencing a rising incidence of Gram negative cross infection. The cross infection laboratory has concluded a project on the preparation of typing sera for the investigation of outbreaks of *Pseudomonas aeruginosa* infection. Although the results of typing by serology are more reliable than by pyocine typing, the numbers of organisms untypable by this method means that preparation of typing sera may have to be repeated. Pyocine typing thus remains the more useful method in the meantime.

The resistance of *Pseudomonas aeruginosa* to a range of antibiotics has been tested and, although there is a relatively high incidence of antibiotic resistance among the cultures studied, none has been found to be resistant to more than two.

Work on disinfectant testing has been continued and one product previously recommended for the pre-operative scrub has been found here and elsewhere to be consistently contaminated with a bacterium associated from time to time in outbreaks of neonatal and post-operative sepsis. This shows the necessity for continued bacteriological appraisal of such products.

Hospital Steriliser Testing and Management Course for Operators

More hospitals are making use of the steriliser testing service and, as participants in the courses run for Steriliser and Central Sterile Supply Department Managers return to the institutions sponsoring them, there is a widening scope for an information service.

Two such courses were conducted last year at which a total of 31 participants were instructed in the theory and practice of sterilisation techniques.

One hundred and thirty-six sterilisers were tested in 39 hospitals during the past year. Fifty-four of 112 autoclaves and 16 of 24 hot air ovens, had defects.

Co-operation with the Armed Services continues to be of mutual benefit. A detachment from the National Health Institute was again present at the Annual Camp of No. 2 New Zealand General Hospital. In addition, the Director delivered a lecture upon the work of the institute in connection with operating theatres in the field, at the Director-General of Medical Services' Triennial Exercise.

General Bacteriology Laboratory

The General Bacteriology Laboratory undertakes a variety of routine work for Medical Officers of Health, hospitals, and other laboratories in addition to specialised bacteriology. It also performs examinations of milk and water samples for the Wellington and Hutt Health Districts.

The total number of specimens received in 1970 (7,300) was an increase of 12 percent on the figures for the previous year.

Enteric Organisms

New Zealand laboratories sent 30 cultures isolated from 21 patients and carriers and a further 27 cultures were received from Western Samoa. No new phage types were found. A "typhoid register" is kept of all isolations from cases and carriers in the country, in order that, in the event of an outbreak occurring due to an unusual type, the discovery of the origin of such an outbreak can be expedited.

New Salmonella Isolations

The three new salmonella serotypes isolated in New Zealand during 1970 were: *Salmonella stanley*—isolated from a traveller from overseas; *Salmonella havana*—isolated from sewerage in Wellington; and *Salmonella montevideo*—isolated from a person recently returned from Fiji.

Culture Collection

Reorganisation and checking of the culture collection has continued. Two hundred and seventy-two cultures and phages were supplied to other laboratories.

Toxoplasmosis

The diagnostic service examined 2,878 sera sent from all over New Zealand.

Leptospirosis

Of 1,612 sera examined for leptospira antibodies, 221 were positive. During 1970 *Leptospira medianensis* was the predominant serotype.

Work has continued on the classification of leptospirae. Representative cultures of the strains isolated from humans were referred to the reference laboratories at London and Washington D.C., for verification of their identity. Confirmation has been received of the isolation from human clinical cases in New Zealand of *Leptospira pomona*, *Leptospira ballum*, and a member of the hebdomadis group.

Special Investigations

(a) *Venereal Disease*—Penicillin sensitivity of gonococci isolated in Wellington has continued. Of the 470 strains received 12 percent were moderately resistant and 6 percent were resistant.

(b) *Pollution Survey of Bay of Islands Oyster Farming*¹—Twenty-nine samples of oysters from 5 sample points have been examined according to "Recommended Procedures, American Public Health Association, Inc."

Virus Laboratory

Viruses isolated from specimens forwarded during 1970 included:

Myxovirus influenzae Type A	..	..	25
Coxsackie Type A5	..	..	5
Coxsackie Type A6	..	..	1
Coxsackie Type A16	..	..	6

and also one each of Poliovirus Type 1, Type 2, and Type 3, and one Herpes simplex.

In late November and December a small outbreak of hand, foot, and mouth disease in the Waikato was found to be due to a double aetiology, i.e., Coxsackie A5 and Coxsackie A16.

Influenza²

After a year in which there is considerable epidemic influenza, it is usual in this country to experience a year in which infection due to this virus is below the detectable level. However, the advent of a major variation of the influenza virus in 1967 in Hong Kong, was expected to upset this because: (a) two successive epidemic years of influenza in the Northern Hemisphere indicated an increased morbidity in the second year; and (b) the appearance of a further variant of the virus (A2/Eng/878/68).

¹See also Disease Control, p. 22.

²See also Disease Control, p. 23.

Thus the expected epidemic of influenza A recurred in New Zealand in 1970 and was (as elsewhere) also more severe than in 1969, as measured by the morbidity and mortality. The variant virus did not have the penetration expected and only 1 strain of this virus was isolated in the 25 viruses examined.

Research Laboratory

1971 was the final year of the work concerned with the growth of aflatoxin-producing moulds under suitably-chosen laboratory conditions, and with distinguishing the various types of fluorescent material developed in these cultures. It was found that differences in fluorescence are related to differences of solubility in chloroform and other solvents, and also to different toxicities of the culture fluids in the chick embryo. The results show that the violet fluorescence seen in cultures of some moulds from New Zealand sources is not a fluorescence due to aflatoxin.

Spores from moulds which can produce aflatoxin may reach New Zealand on food imports from warm countries, however, and care is needed to ensure that growth of these spores does not occur during storage or manufacture of food products here. With this in mind, tests have been made on the viability of *Aspergillus flavus* spores under various storage conditions. The results have all been reported in papers presented to food technologists, health inspectors, nutritionists, and research scientists, and the work will be finalised in papers now under preparation.

Vaccine Laboratory

Nine batches of vaccine were prepared from crude pulp in store, 6 of which have been freeze-dried to produce 22,000 doses. During the year a change was made from 25-dose to 100-dose ampoules.

Five batches of vaccine were tested by the WHO and passed their requirements, thus enabling the New Zealand Government to offer a further 250,000 doses to WHO for their Smallpox Eradication Programme. In addition, a total of 75,500 doses of vaccine were issued in New Zealand.

(d) National Health Statistics Centre

Publications

The principal medium for the dissemination of information collected by the centre is by means of its publications. In the annual report series the following were issued during the year:

Medical Statistics Report—Part I, Mortality and Demographic Data, 1968.

Medical Statistics Report—Part II, Mental Health Data, 1968 and 1969.

Medical Statistics Report—Part III, Hospital and Selected Morbidity Data, 1967 and 1968.

Cancer Data, 1969.

A concentrated effort was made to speed up publication and resulted in the issue of two reports each on mental health data and on hospital and selected morbidity data.

Issues in the special report series compiled in this centre were:

No. 35: Domestic Accidents.

No. 36. An Evaluation of a Regional Mass Miniature Radiography Programme, 1956-67.

Changes in the content of Parts I and III of the Medical Statistics Report were the omission of certain historical tables that appear in the Trends report. Other tables that showed no significant changes from one year to the next will, in future, be published on a triennial basis.

Statistical Assistance

During the year 405 requests for information were received from the medical profession, organisations and agencies, universities, and the general public.

The following is an analysis, under subject-matter, of requests for information received:

Subject-matter of Requests	1970	Number of Topics	
		1969	1968
Hospitals—			
General	132	142	133
Mental	52	42	29
Deaths	130	133	138
Cancer case registration	30	25	34
Survey material	13	10	17
Foetal deaths	8	6	10
Births	15	12	17
Miscellaneous	25	17	21
	<hr/> 405	<hr/> 387	<hr/> 399

The centre also provided data processing assistance and technical advice to a number of clinicians engaged in research projects.

Advisory Committee on Medical Statistics

The committee, a standing committee of the Medical Research Council, has studied and has actively promoted interest in the following topics:

The computerisation of medical data and record linkage.

The establishment of private hospital morbidity statistical data.

The establishment of statistics of the newborn with particular reference to the early detection of high-risk infants.

The accuracy of mortality data reported on death certificates.

The inclusion of a question on diabetes in the national population census.

Health Resources Statistics

If health resources are to be provided and used in the most efficient way, health administrators must have adequate information about the personnel, buildings, and equipment available in the community. This information is essential for planning especially for the development of services and the training of staff. To meet this demand the centre is developing statistical series on health resources which will continue in the meantime to be published in *Trends in Health and Health Services*.

Mental Health Statistics

There is a need to provide information for assessing the activities of the outpatient treatment facilities being developed throughout the country. Preliminary work has begun on extending the scope of the statistical collection scheme to include people treated as daypatients or outpatients. At present the scheme covers only inpatients treated in mental hospitals and in psychiatric units of public hospitals. The centre is working in conjunction with the Auckland Hospital Board and the University of Auckland in establishing a more comprehensive regional collection scheme, from which a national scheme is likely to be evolved.

Deaths

The changes in the total deaths registered and in the rates per 1,000 of population over the last 5 years were as follows:

Year	Numbers of Deaths			Current Rate per 1,000 of Population		
	Total Population	Europeans	Maoris	Total Population	Europeans	Maoris
1966 ..	23,778	22,487	1,291	8.86	9.07	6.37
1967 ..	23,007	21,785	1,222	8.43	8.65	5.84
1968 ..	24,464	23,140	1,324	8.88	9.11	6.13
1969 ..	24,161	22,831	1,330	8.68	8.91	5.99
1970 ..	24,840	23,441	1,399	8.79	9.00	6.14

For both the total and European populations the 1970 figures were the highest ever recorded; for the Maori population the 1970 figure was the highest during the last 10 years.

A true indication of the effects of the forces of mortality over periods of time or as between two groups is not possible in a crude death rate comparison. This is particularly so in any European-Maori comparisons where the proportion of "young" to "old" population are so dissimilar. By applying the death experience in each race in each age group in each year to a common population a valid indicator is produced. While these results show clearly how unfavourably Maori death rates compare with the Europeans it is well to observe that at the young ages, even up to 35 years, the proportional improvement in the Maori continues to exceed that of the European.

Year	Death Rates per 1,000, Adjusted to Total Population, Census 1961					
	Persons		Males		Females	
	European	Maori	European	Maori	European	Maori
1965 ..	8.7	14.7	9.8	14.8	7.7	14.3
1966 ..	8.9	15.6	10.1	16.0	7.8	14.6
1967 ..	8.5	13.5	9.6	13.7	7.5	13.0
1968 ..	8.9	15.8	10.1	15.7	7.8	15.6
1969 ..	8.7	15.7	10.2	16.4	7.6	14.4

The 1970 equivalent rates were not available at the time of preparation of this section but the indications from the gross totals are that 1970 will present higher adjusted figures in both sexes in both races. In both races the male death rates are very much higher than female rates with the European male more unfavourably placed in this respect. Most significant is the up-turn in male mortality in each race as compared to relative stability in the female. The explanation for this ominous movement is found at ages 45-64 years with increases in cardiovascular conditions (coronary heart disease and cerebrovascular lesions) and in cancer incidence (chiefly lung cancer) as the principal influences.

Causes of Death

The absolute numbers of deaths and the crude death rates per million of population are shown for a selected group of diseases in table 5. Most of the groups are aggregates of large groups of like causes of death, while others such as tuberculosis, asthma, and homicide are shown because special interest attaches to them. The 1970 figures are provisional and subject to alteration. Final detailed tables of causes of death are published annually in the Medical Statistics Report, Part 1—Mortality and Demographic Data.

Deaths from tuberculosis have stabilised at a level around 100 per year. Practically all of these are in the middle-aged or elderly. Prominent in the infectious conditions are influenza with 214 deaths, diarrhoeal disease 63 deaths, infective hepatitis 15 deaths, septicaemia 15 deaths, and measles 12 deaths. The infrequency of tetanus as a cause of death was maintained in 1970 with one death (one in 1969), while deaths from hydatid disease returned to their previous low number of two after increasing to five in 1969. The sudden increase in deaths from influenza to 214 compared to 51 in 1969 is attributable to the influenza epidemic which was experienced in other countries and reached New Zealand in 1970.

Three disease groups of particular concern since they reflect to some degree the deleterious effects of changing environment and living habits are cancer (especially lung cancer), heart disease (especially coronary forms), and bronchitis.

The leading individual cause of death, coronary heart disease, has increased from 6,699 in 1969 to 6,737 in 1970. The total cancer deaths rose to a new record high of 4,447 in 1970, to which lung cancers contributed 826, a rise of 64 over the 1969 lung cancer figure. Deaths from lung cancer have increased rapidly over recent years, the 1969 total being 80 percent higher than that of 1959. The record high figure of 892 bronchitis deaths is an increase of 94 on the 1969 figure. Deaths attributed to diabetes mellitus as the principal or underlying cause (diabetes appears most frequently as an associated cause of death) totalled 375, a reduction of 42 from the 1969 figure. Deaths attributed to motor vehicle accidents and deaths attributed to accidents other than those involving a motor vehicle were the highest recorded during the last 5 years.

(c) National Radiation Laboratory¹

Administration

The administrative procedures involved in achieving radiation safety consist of licensing appropriately qualified users and, through control of importation and sale, ensuring that each source is under the care of a licensee. The increases in the numbers of X-ray plants registered and of persons licensed for their use have, over recent years, merely followed population growth. The use of radioisotopes, however, particularly in the medical field, has expanded greatly. Over the last 10 years there has been more than a five-fold increase in orders placed on the laboratory for radioactive materials.

Field Services

During 1970, 249 visits were made by officers of the laboratory to institutions where radiation sources are used. The protection deficiencies discovered were analysed in terms of degree of hazard and this confirmed the earlier opinion that firmer restrictions should be required for the use of X-ray analytical equipment. Special attention was therefore given to such apparatus and specific requirements established for each unit.

An established practice is to provide a special service for one class of licensee, each year. This year it consisted of a complete recalibration of all the techniques used with all the superficial radiotherapy machines in the country and required 256 radiation output determinations.

Occupational Monitoring

Of the 1,005 establishments using the postal film badge service, 37 are located overseas in countries which have not yet developed a radiation monitoring organisation. Only 16 of the 15,559 films returned, processed, and reported on, showed exposures exceeding the maximum allowable continuous rate of 100 millirads per week. It would be very difficult to improve further on the very low level of occupational exposure achieved by the radiation workers of this country.

Calibration Services

In addition to the normal provision of dosimetry calibrations for use in radiotherapy throughout New Zealand, the radiation standards section carried out an intercomparison of the national primary standards with those of the United Kingdom and Australia.

After they had been thoroughly calibrated here, duplicate transfer instruments were taken to the other national laboratories by the officer in charge of the section. At each centre comparison measurements were made over a wide range of radiation qualities and the stability of each dosimeter was repeatedly checked with a portable radioactive reference source. Following their return to the laboratory, careful recalibrations confirmed that no change in sensitivity of the instrument has resulted from the round-the-world transportation. Full reports of the international comparisons will be written in liaison with the co-operating laboratories.

¹A more detailed report incorporating fuller technical information and tables and graphs of statistical data is available from the National Radiation Laboratory, P.O. Box 1456, Christchurch.

To date, provisional evaluation has been made of the British results and this indicated good agreement, generally to better than 1 percent. The exercise has stimulated interest in some of the finer details of the basic parameters of the absolute determination of the Roentgen and a number of investigations have been undertaken.

Technical Services

The staff of the workshops were involved in re-establishing their own equipment and plant and that of most other scientific sections as extra accommodation became available during the year. In addition to the maintenance of all instruments and facilities, they produced special equipment for projects and for extension of the normal work of the laboratory.

Advisory Services

Major advisory reports not arising directly from field visits numbered 71. A major group involved radiation protection designs for hospital blocks or departments or for other radiological establishments. A dozen reports were prepared for international organisations or for state departments. The remaining items provided advice for, or comments on the safety of, proposals involving the use of radiation for medical, industrial, teaching, or research purposes.

Environmental Radioactivity

The routine measurement of radioactivity in air, rain, soil, milk, and human bone continues, and the results are published in quarterly reports and annual summary reports issued by the laboratory¹.

(a) *Nuclear Fission Fall-out*—Extended monitoring of fall-out throughout New Zealand and the Pacific area following France's fourth series of nuclear weapons tests again showed transient increases of total beta activity in air and rain, due to short-lived fission products, similar to those observed during the previous tests. Iodine-131 measurements in milk sampled at Suva, Apia, and seven New Zealand stations showed that the levels for the year 1970 were 5 percent of the permissible level at Suva, 9 percent at Apia, and 1 percent in New Zealand. Strontium-89 measurements indicated that a significant portion of the total strontium-90 deposited during the latter part of the year was due to the French tests. Delayed stratospheric fall-out of strontium-90 from nuclear weapons tests in 1961 and 1962 caused a maximum deposition in New Zealand in late 1964. Levels thereafter declined until in 1968 they reached about one-third of the maximum level. This steady rate of decline has been temporarily reversed by the French tests. In 1969 the levels increased by 50 percent over the previous year. Levels were somewhat lower during 1970 but they may well be higher again during 1971 because of the delay in deposition of the debris injected into the stratosphere during the 1970 tests. The country-wide average levels of strontium-90 and caesium-137 in New Zealand milk over the past 9 years, and the levels of strontium-90 in over 90 samples of human bone so far measured, are a small fraction of the permissible level.

¹Environmental Radioactivity Reports: NRL-F39, NRL-F40, NRL-F41, NRL-F42 Quarterly reports. NRL-F43 Annual Summary for 1970. "Report on Radiation Control and Population Dose in New Zealand" NRL-UN/2.

(b) *Natural Radioactivity*—Measurements were continued on the concentration of lead-210 in all rainwater samples routinely collected for strontium-90 measurement. Similarly, all human bone samples collected for strontium-90 evaluation are being analysed for radium-226 and lead-210 also. About 30 human bone samples have been analysed during 1970 using our recently developed procedure for separating, in sequence, strontium-90 and the natural radionuclides from the same sample.

(c) *Miscellaneous Surveys*—(i) A survey of oysters and seawater radioactivity in the Bay of Islands was undertaken during 1970. The radionuclides measured were: strontium-89, strontium-90, caesium-137, Ruthenium-106, cerium-144, iodine-131, zirconium-95, and potassium-40. The total intake of radioactivity due to the consumption of these oysters was computed to be less than 1 percent of the radiological guide level set by the U.S.A. Public Health Service.

(ii) A sample of soup stock was measured for strontium-90 because an overseas buyer required a certificate stating the strontium-90 contamination. It was found to contain less than 1 picocurie per kilogram. Natural potassium and caesium-137 were also measured in this sample.

(iii) A series of intercomparison measurements was made of particulate matter in air, arising from air pollution.

Research and Development Work

Improvements in radiochemical procedures for strontium-90 have been modified and produced as a Methods Report¹ and a second report in preparation will deal with other radioisotopes. Work on the radiochemical analysis of soil is almost completed. The low-background sample changer for gamma ray analysis, designed and constructed in the laboratory, was completed and put into operation. With its automatic summation and printout, this unit is an invaluable addition at periods of very heavy workload.

The series of gamma irradiation ranges, which have been designed and partially built, will simplify and improve the calibration of survey meters and the exposure of objects. The causes for the inconvenient time delays required to obtain an absolute measurement of dosage using the laboratory's calorimeter instrument have been investigated and modifications for improvement devised.

New secondary standard dosimeters were designed and constructed which should duplicate the accuracy and stability of the original model and at the same time simplify operation and maintenance and improve versatility. The overseas dosimetry intercomparison stimulated detailed studies of the correction factors used to convert the raw primary standard chamber readings into absolute Roentgens.

The arrival of a commercial sectionalised model of a human allowed a number of investigations of patient dosage patterns for special diagnostic and therapeutic techniques.

¹"The Determination of Radiostrontium in Rainwater, Soil, Milk, and Bone." NRL-R.M.3, L. P. Gregory.

PART III—BUREAU OF MEDICAL SERVICES

LEGISLATION

Important changes in relation to the registration of overseas doctors have been provided for in the Medical Practitioners Amendment Act 1970. The opportunities for registration have been widened, first, by the recognition of certain post-graduate qualifications linked with a basic medical degree and secondly by provision of a probationary registration scheme. The amendment also extends and clarifies certain powers and procedures in relation to discipline within the medical profession.

The main purpose of the Pharmacy Act 1970 was to consolidate legislation first enacted in 1939 and substantially amended over subsequent years. The Narcotics Amendment Act 1970 made special provision with regard to the theft and receiving of narcotics and made other machinery amendments. It also adopted from the Poisons Act 1960 a provision enabling the prohibition of the publication of the names of drugs mentioned in legal proceedings.

The Hospitals Amendment Act 1970 made several amendments to the principal Act, the most significant being extension of hospital boards' powers to enable them to establish health centres. The power of boards to control traffic in hospital grounds was substantially extended. The amendment to section 94 of the Act, allowing different amounts of expenditure, to be prescribed for different hospital boards, required a complementary amendment to the Hospital Finance Regulations 1958.

The Social Security Amendment Act 1970 and the Social Security Amendment Act 1970 No. 2 were necessary principally to make policy and administrative changes concerning the specialist consultation benefit and the recognition of specialists for this purpose.

1. HOSPITALS

Introduction

During the year considerable effort has been expended to bring about the amalgamation of some of the present hospital boards. The department fully supports Government policy in this field, it being clear that creation of rational-sized boards will improve the standard of patient care, and enable the progressive delegation of further responsibility from the department to boards.

After the publication of the "Review of Hospitals and Related Services in New Zealand"¹ all boards likely to be affected were visited by members of the Medical Directorate of the Division of Hospitals, to ensure that boards undertook discussion on the possibilities outlined in the "Review" and engaged in dialogue with neighbouring boards. Later the director and the deputy-director (administration) visited all the boards concerned for full and frank discussions. Subsequently, decisions taking full account of the "feed back" of opinions obtained were incorporated in recommendations issued by the department, which it was planned to place later before the Hospital Advisory Council.

¹A Review of Hospital and Related Services in New Zealand, Wellington, New Zealand, Department of Health, March 1970.

Boards were asked to indicate their acceptance of the suggested recommendations or indicate their opposition with detailed reasons. These were carefully considered and, where it was deemed appropriate, it was decided to have independent inquiries made to determine, on the basis of available evidence, the right course to pursue. To ensure uniformity it was thought desirable that all such inquiries should be undertaken by the same person. As it was not possible for all the inquiries to be completed in time for the October 1971 local body elections it was decided to defer them in the meantime.

It is pleasing to note that three boards, Wairoa, Vincent, and Maniototo, have accepted the recommendations, the first *in toto*, and the other two with certain reservations in respect of their representation on the amalgamated board. Six other boards have indicated opposition to the recommendations. However, there are clear indications that most of the boards concerned are anxious to engage in continued discussion with their neighbouring boards. It is confidently expected that this may well involve other considerations, related basically to the best interests of patients.

Legislation is currently under consideration, providing for local committees of management arising out of amalgamation to be elected rather than appointed by local bodies in the area.

Study Leave for Medical Staff

Leave on pay, plus assistance with fares and subsistence allowances, was approved for 15 whole-time and 24 part-time medical officers, to undertake overseas study in 1971.

The scheme for making grants—for overseas study or to assist in setting up in private practice—to junior medical officers after completing 4 years' continuous service in public hospitals was reviewed and the amount of the grant and the contribution towards fares increased. Normally medical officers returning to hospital board appointments at the conclusion of their overseas study would have their travelling expenses met. The scheme now provides, as an incentive to attract doctors back from overseas, for the payment of fares for up to two adults in the case of a doctor who wishes to return to enter private practice.

Grants were made to 66 junior medical officers.

Hospital Works and Development Programme

Annual returns submitted by hospital boards giving details of hospital works and buildings under construction or planned, are combined in a national total and are shown in table 2 of the appendix. This table shows the total estimated value of all projects over \$20,000 either in hand or in the planning stages to be \$242.3 million. Expenditure to 31 March 1971 was \$28.097 million. Details of the final expenditure for the 1970-71 financial year are not yet available but the total is assessed at approximately \$14.6 million. The expenditure for 1970-71 shown in table 2 does not include completed works finally brought to charge during the year and is therefore less than the total assessed figure.

From past experience it has been found that hospital boards tend to overestimate their likely expenditure in any one year and it is expected that this will be the case again in the coming year. Estimated expenditure submitted by boards for 1970-71 was \$23.04 million but following examination by the department in consultation with Treasury and the Ministry of Works, the total was reduced to \$18.26 million. The returns will be similarly co-ordinated on a national basis for 1971-72 in order to reach a level of approximately \$18.5 million.

The Auckland Hospital Board, with an annual programme of some \$8 million will continue to account for a large proportion of the hospital boards' works programme for some years to come, as it is faced with the development of three new major hospitals at North Shore, Waitakere, and Wiri as well as the completion of the Auckland Hospital Acute Block and the final stage of the development of Green Lane Hospital. Other boards with large development programmes are Waikato, Taranaki, Palmerston North, Wellington, North Canterbury, and Otago.

At the present time most of the larger boards are experiencing difficulty in filling their loan issues, and this shortage of loan finance is slowing down hospital development generally. It is now more important than ever to ensure that boards determine priorities within their own areas to achieve the maximum utilisation of existing and planned facilities.

Despite the general shortage of loan finance, it has been possible to authorise the acceptance of tenders for the construction of several major hospital buildings, expenditure on which will be spread over 4 or 5 years. These are:

	\$ (million)
Auckland Acute Block Stages II and III	3.88
Auckland Nurses Home	1.73
Whakatane Ward and Clinical Services Block	1.74
Napier Theatre Suite and Physical Medicine Department	1.19
Wairoa Ward and Administration Block	0.9
Palmerston North Ward and Clinical Services Block	7.7
Christchurch Ward and Clinical Services Block	7.4

In addition the following larger projects were either completed during the year or were under construction at 31 March 1971:

Dargaville Maternity Annexe.	Wanganui new Laundry.
Auckland Acute Block, Stage I and Part Stage II.	Palmerston North new Laundry.
Green Lane, Stage II (Clinical Services).	Palmerston North Rehabilitation Unit.
North Shore Hospital, Stage I (140 geriatric beds and services).	Wellington Clinical Services Block, Stage I.
Auckland Princess Mary Paediatric Wing.	Wellington Bulk Store.
Waikato Clinical Services Block.	Wellington St. Helens Kitchen, Dining, and Nurses Tutorial Block.
Waikato East-West Ward Block.	Grey Ward and Administration Block.

Morrinsville Geriatric Hospital.	Grey Clinical Services Block.
Te Awamutu Geriatric Hospital.	Grey Wards 3 and 4.
Tauranga Ward Block.	Buller Theatre Block.
Taumarunui Theatre Suite.	Burwood (Christchurch) Kitchen,
Napier Ward and Clinical Services Block.	Dining Room, and Steam Services.
Hastings Maternity Block.	Princess Margaret (Christchurch) Geriatric Ward.
Pukeora Home for the Disabled, Phase II.	Oamaru Theatre, Dispensary and Central Sterile Supply Dept.
Westown (New Plymouth) Clinical Services Block.	Balclutha Ward Block.
Westown Ward Block.	Kew Nurses Home Additions.
Westown Boilerhouse.	

Institutional Beds, Patients and Services

Public and Departmental Institutions

In the supplement to the department's annual report, entitled "Hospital Statistics as at 31 March 1970", 199 hospital board institutions were listed consisting of 73 general hospitals, 82 maternity hospitals, 23 special hospitals, and 21 old people's homes. The number of beds at 31 March 1970 of all descriptions available for patients or inmates in all public institutions and private licensed hospitals are shown in the following table.

Type of Bed	Public Institutions		Private Licensed Hospitals: Number of Available Beds	Total Number of Available Beds
	Number of Available Beds	Average Number of Occupied Beds per Day		
General	13,798	11,074.7	3,384	17,182
Per 1000 of population ..	4.9	4.0	1.2	6.1
Maternity	2,955	1,858.6	245	3,200
Per 1000 of population ..	1.1	0.6	0.1	1.2
Total Hospital Beds ..	16,753	12,933.3	3,629	20,382
Per 1000 of population ..	6.0	4.6	1.3	7.3
Non-hospital beds ..	1,121	967.8	..	..

Persons being Treated or Maintained in Public Hospitals

The number of persons who were treated or maintained at some time in public institutions during the year ended 31 March 1970 was 331,460. This figure includes 2,116 persons similarly maintained in non-hospital beds, located mainly in hospital boards' old people's homes. This is equivalent to 11.9 percent of the total population.

The number of attendances by outpatients was 3,235,890, including 54,008 attendances for dental patients.

The statistics now obtained from hospital boards enable figures for general beds and maternity beds to be separated as shown in the following table, and the grand totals show a comparison with the previous year's figures.

Number of Patients

	Available		Average Beds Occupied Per Day		Inpatients Treated		Turnover		Number of Births		Outpatients Attendances (Including Dental)	
	1969	1970	1969	1970	1969	1970	1969	1970	1969	1970	1969	1970
General hospital beds—												
In institutions classed as general hospitals ..	11,491	11,794	9,304.1	9,313.8	239,332	240,417	25.9	25.8	..	..	2,923,605	3,022,782
In other institutions ..	1,923*	2,004*	1,723.6	1,760.9	12,154	14,668	7.1	8.4	..	..	186,477	213,108
Maternity beds—												
In institutions classed as general hospitals ..	1,430	1,504	915.7	1,010.0	36,545	38,580	..	..	29,633	29,773	..	..
In separate maternity hospitals ..	1,418	1,451	831.4	848.6	35,418	35,679	..	..	27,237	27,689	..	..
Grand totals ..	16,262	16,753	12,774.8	12,933.3	323,449	329,344	..	..	56,870	57,462	3,110,082	3,235,890

*This figure includes beds in hospitals which are also old people's homes, special hospitals of several types and general beds in maternity hospitals.

In the section relating to maternity beds, all births are shown as relating to these beds, but some small proportion of births for example, some deliveries including Caesarean operations, will have taken place in the surgical section of general hospitals. The number of patients treated in maternity beds exceeds the number of births on account of admissions for ante-natal care and the inclusion, in the statistical definition of "patient", of babies requiring special in-patient treatment after the discharge of the mother.

Special Departments and Special Services in Public Hospitals

Summarised totals (inpatients and outpatients combined) of the work done by special departments in all hospitals are as follows:

				Year Ended 31 March		
				1964	1969	1970
				(000)	(000)	(000)
X-ray diagnostic—number of examinations	..	..	..	768	895	899
X-ray therapy—number of treatments	..	..	..	100	135	135
Physiotherapy—number of attendances	..	..	..	1,433	1,602	1,669
Pathology—number of tests..	..	..	..	2,673	5,912	6,289
				No.	No.	No.
Number of post mortems	..	..	..	4,734	6,003	5,981*

*This figure, of course, refers only to number of post-mortem examinations and does not infer a comparable decrease in death rates.

Staff in Public Hospitals

The total of employees of all hospital boards at 31 March 1970 was 1,070 more than the previous year—an increase of 3.3 percent.

Institutional staffs excluding administration, district nursing, farm, and miscellaneous staff at 31 March 1970 totalled 31,801 for 17,874 established beds in hospitals and old people's homes. Of these beds 13,901 were occupied daily and the staff employed averaged 2.3 per occupied bed.

The figures for staff employed in public hospitals and other institutions and activities controlled by hospital boards at 31 March 1970 and the actual payments of remuneration for the year ended on that date, with the corresponding figures in parenthesis for the previous year are shown below.

				Number Employed		Salaries and Wages	
				at 31 March 1970		Payments for 1969-70	
						\$(000)	\$(000)
Institutional medical (whole-time and part-time)	..	..	..	1,947*	(1,923)	7,711	(6,711)
Other professional and technical	..	..	..	3,332	(3,084)	6,808	(5,779)
Nursing	..	..	..	15,740	(15,183)	30,026	(27,540)
Other treatment staff	..	..	..	656	(631)	1,453	(1,406)
Domestic and other institutional staff	..	..	..	10,126	(10,046)	19,983	(18,525)
Administrative staff	..	..	..	712	(702)	2,122	(1,841)
Domiciliary services	..	..	..	1,182	(1,143)	1,229	(1,095)
Farm (including vegetable gardening)	..	..	..	67	(18)	48	(50)
Other non-institutional	..	..	..	180	(142)	342	(340)
				33,942	(32,872)	69,722	(63,287)

*The numbers are those of positions filled in all institutions and persons are recorded more than once where they provide clinical services at more than one institution.

Consents to Capital Expenditure

The actual annual rate of expenditure does not fluctuate substantially and the fluctuation here essentially relates to the point of time at which formal consents as required by the Hospitals Act, are issued for boards to undertake intended expenditure.

Buildings—During 1970–71 consents were granted to hospital boards for building projects (with 1969–70 figures for comparison) as follows:

	1969–70	1970–71
	\$(000)	\$(000)
Major works exceeding \$40,000	11,407	(29,103)
Consents ranging from \$20,000 to \$40,000	528	(728)
Consents ranging from \$10,000 to \$20,000	522	(768)
Consents ranging from \$1,000 to \$10,000	729	(743)
	<u>\$13,186</u>	<u>(\$31,342)</u>

Hospital Equipment and Furnishings—In the same period approvals were issued to boards for expenditure of \$4,499,208 for items of equipment and furnishings costing more than \$1,000 (with 1969–71 figures for comparison) as follows:

	1969–70	1970–71
	\$	\$
Motor vehicles: ambulances, trucks, cars	135,639	325,953
X-ray equipment	760,319	663,799
Furniture, nurses homes, staff accommodation	186,674	48,106
Ward equipment	260,493	558,664
Surgical and specialist equipment	430,158	889,298
Laundry equipment	834,908	756,784
Hospital equipment	897,761	860,659
Boilers and generators	580,337	395,945
	<u>\$4,086,289</u>	<u>\$4,499,208</u>

Finance

Payments by hospital boards in 1969–70 for both capital and maintenance purposes (inclusive of expenditure from loans but exclusive of amounts paid between boards or to Government institutions) totalled over \$133 million and is summarised as:

	1968–69	1969–70
	\$(000)	\$(000)
Maintenance	94,882	106,182
Capital (excluding repayment of loans)	18,491	19,262
Repayment of loans	7,034	8,107
	<u>\$120,407</u>	<u>\$133,551</u>

Maintenance Grants to Boards

With the passing of the Hospitals Amendment Act 1968 the procedure whereby hospital boards are allocated a sum within which they must prepare their annual estimates became a permanent feature of the financial control of hospital board expenditure. An advisory committee comprising representatives of the department, the Hospital Boards' Association and the Hospital Officers' Association meets each year to make recommendations to Government on the amount which should be

granted to each board. In general boards have settled into the requirements of the new procedure very well, though it is disappointing to note that a small minority have as yet failed to achieve a satisfactory system of budgetary control and thus, by better financial management, to operate within their allocation.

Maintenance Expenditure

A summary of maintenance expenditure of hospital boards for 1969-70 (with figures for 1968-69 for comparison) is given below:

	1968-69		1969-70	
	Amount	Percentage of Total	Amount	Percentage of Total
	\$(000)		\$(000)	
Institutional operating costs	82,985	87.5	91,882	86.5
Extramural relief	118	0.1	153	0.1
Grants to private hospitals	141	0.1	140	0.1
Domiciliary services (including grants) ..	1,762	1.9	2,023	1.9
Transport of patients (including grants) ..	942	1.0	920	0.9
Administration	2,172	2.3	2,342	2.2
Interest on loans	4,961	5.2	5,794	5.5
Superannuation	647	0.7	718	0.7
Services provided for other boards or departmental institutions	106	0.1	82	0.1
Miscellaneous	1,049	1.1	2,128	2.0
Total	94,883	100.0	106,182	100.0

Inpatient Expenditure

For the year 1969-70 the average daily expenditure for individual patients treated in hospitals classed as general was \$17.73. Outgoings totalled just over \$185,068 each day for resident patients. On the average each inpatient cost \$241.77 as compared with \$220.63 in the previous year.

Daily expenditure per patient in general hospitals was made up as follows:

	1968-69	1969-70
Treatment expenditure—	\$	\$
Salaries and wages—		
Medical	1.16	1.33
Nursing	5.61	6.04
Technical and other staff	0.48	0.54
Total	7.25	7.91
Special departments (e.g., X-ray, laboratories)	0.90	1.04
Supplies and expenses	1.39	1.61
Sub-total treatment	9.54	10.56
Institutional administration	1.33	1.53
Heat, light, power, and water	1.05	1.13
Household (housekeeping, dietary, laundry)	3.67	3.86
Buildings, grounds, and miscellaneous	0.57	0.65
Sub-total non-treatment	6.62	7.17
Total daily expenditure	16.16	17.73

The total expenditure per patient was made up as follows:

	1968-69	1969-70
	\$	\$
Treatment	130.24	144.12
Institutional administration	18.22	20.85
Heat, light, power, and water	14.28	15.36
Household	50.06	52.64
Buildings and grounds	7.66	8.61
Miscellaneous	0.17	0.19
	<u>220.63</u>	<u>241.77</u>

Architectural Section

Apart from many major projects at present under construction, this year has seen the advancement of developmental and preliminary planning of a major nature for Kenepuru, Greenlane, Hutt, Gisborne, and Dunedin Hospitals. These developments, along with others of a similar nature, will account for a considerable expenditure, which must in due course, be related to the national hospital building programme.

One of the difficulties in the planning of hospitals is the time which must elapse between the initial stages and their commissioning often amounting to a decade. It is therefore impossible to forecast at the time the basic and fundamental planning is being carried out, what the financial position is likely to be, when construction is under way.

Recent experience indicates that, in future, hospital planning should be such, that, as far as is practicable, hospitals can be built if necessary in small units rather than large ones. Thus should finance be limited, it may be possible to make some provision rather than face deferment of a complete project.

Reference was made in last year's report, following a visit overseas by a departmental team, to the importance of more research in the hospital design field. Resulting from the recommendations made, it has since been agreed to establish a design and evaluation unit, the prime function of which will be to conduct research concerning planning requirements of hospitals and to evaluate the efficiency of those buildings recently commissioned.

When fully operational this arrangement should go a long way towards meeting the many requests that the department's advisory planning services be strengthened. The department also hopes that with such a unit established it will be possible to arrange regular seminars of those interested in hospital planning, so that various points of view on this subject can be expressed and assessed for their relative worth.

Currently being prepared are a series of planning recommendations for use by those interested in the designing of pensioner flats. It is expected that with the department's experience in planning old people's homes these recommendations will be of assistance to agencies engaged in this related field.

The experiment commenced last year in the use of convenience foods has been concluded. A committee has been set up to consider the results obtained, together with other recommendations from hospitals. Although finality has not been reached, the indications are that convenience foods will continue to have a place in the overall food service of our hospitals.

The use of natural gas has had an effect on the planning of some of the later hospitals, and, because of its greater flexibility than solid fuel, may well affect the locations of the boilers providing heating and hot water services. Investigations into this matter are currently being carried out in respect of the North Shore Hospital.

Construction on the various stages of Rarotonga Hospital are continuing and it is anticipated that the first stage should be completed about the middle of the year. Sketch plans have been considered for a replacement hospital for Aitutaki and consultant architects are currently preparing working drawings.

General Inspection and Advisory Services

This section has completed arrangements with five major hospital boards to undertake conjointly research and investigations into existing budgetary control procedures. The aim of these exercises is to put into effect systems of budgetary control which are based to a greater degree on modern systems of management accounting than has been the case in the past.

Effective systems of budgetary control place reliance on the concept of cost responsibility at various levels of management. Basically this means that those hospital officers with management responsibilities must also be involved with cost or budget responsibilities. If these people are to function effectively in terms of these concepts, it follows that they should be provided with up-to-date factual information on costs and cost variances in greater detail than hitherto. Otherwise they cannot play an effective role as managers of "cost centres".

The educative effect of well-designed systems of budgetary control is considerable, in that it stimulates numbers of people to become budget and cost conscious. These are people who, prior to the installation of such systems, would consider the control of costs or expenditure as a function solely of a hospital board's higher administration echelon.

No one pretends that in such a complex social organisation as a large public hospital these aims are easy of accomplishment. But the gains in improved financial and administrative control derived from efficient methods of budgetary control are well worth the time and effort needed to achieve this objective.

The advisory section has carried out some investigational work into nurse rostering at two public hospitals. At the end of March it commenced further work in this field at a large public hospital, in association with the nursing division and with help from members of the board's nursing staff. It is hoped that this investigation will result in the streamlining of existing methods with a consequent lessening of the detail work which now falls on nursing staff in the preparation of duty rosters.

Admission Lists at Public Hospitals

Thirteen of the 31 hospital boards in the country account for 94.4 percent of the patients stated in the returns received from hospital boards as awaiting admission to hospital. It can be said therefore that the problem of extensive admission lists belongs mainly to these hospital boards.

For the year ended 31 March 1970 hospital board returns gave a national waiting list figure of 35,972, an improvement on the number of 38,164 for the year ended 31 March 1969. For the year ended 31 March

1970, the department also asked for additional information on the composition of admission lists under specialties, including details of the more commonly occurring types of operation within specialties, the effect of clerical reviews of admission lists by way of questionnaire, and estimated waiting times of patients with the classifications of "urgent" "semi-urgent" and "routine". It was some time before this information could be collected and tabulated, but it did disclose that 35,972 as a number was an overstatement of those patients who were waiting for admission to hospital.

It is emphasised that crude figures of "waiting list" patients given as at one point of time must be an overstatement of the actual position, due to the fact that an admission list is never static, varying from day to day. Ideally continuous circular inquiries would be better than inquiries made after 6 or 12 months. However this is only practicable with automatic data processing, which is, of course, now being introduced to our hospitals.

The department considers that there should not be a greater lapse of time between clerical reviews of the waiting list than 6 months. This is certainly so if the list is to be used as a basis for deciding on the hospital organisation needed to cope with the treatment needs as disclosed by that waiting list. Waiting time is a much more significant factor in assessing the service given by a hospital than admission list totals. Of the 18 remaining hospital boards referred to previously 12 can offer a patient a date to enter hospital within 3 months or less of being placed on the admission list. The remaining six can offer a date within 3 months except for certain of their specialties, where there is a variance between these boards of 4 to 6 months.

The 13 hospital boards first mentioned are not in as good a position as the other 18, but one or two hospitals can admit patients within 3 months. The others have extensive waiting times for non-urgent cases.

Urgent cases on the admission lists, i.e., those which require early hospital treatment, but are not an acute or emergency admission, can receive treatment either immediately or within 10 to 14 days of being placed on an admission list. In two hospital boards visited by departmental officers urgent cases were not recorded on the admission list. Arrangements were made at the time for early treatment without the need to record the patient on a list.

The department is concentrating its efforts on improving the rate of admission from the lists at the 13 hospital boards where it is a definite problem, but shortages of staff in vital fields, e.g., anaesthetists and trained nursing staff, preclude dramatic improvements over a short period of time.

Private Hospitals

These continue to play a significant role in the hospital service in New Zealand. This is evidenced by the fact that at 31 March 1970 there were 3,557 hospital beds existing in the private sector compared to 16,753 hospital beds provided in the public hospital system.

Government policy relating to the provision of loan moneys in approved cases for the private hospital system has been continued during

the 1970-71 financial year. Approvals include the re-establishment of Cambrae Private Medical Hospital, Tauranga (formerly Thorncliffe Private Hospital, but closed for some years), and the purchase of Alexandra Private Medical Hospital, Auckland, and of Rawhiti Private Medical and Surgical Hospital, Auckland, to ensure their continued contribution to the private hospital system. Substantial payments of approved loan moneys were made during the 1970-71 financial year. These include contributions towards the cost of erecting the new Bowen Medical and Surgical Hospital at Crofton Downs, Wellington (now nearing completion), the purchase and up-grading of Northcote Medical and Surgical Hospital, Palmerston North, the new theatre suite at St. Georges Hospital, Christchurch, and Cambrae, Tauranga. Payments of loan moneys over the last few years have been:

1968-69	1969-70	1970-71
\$300,043	\$446,444	\$801,405

Under Government policy, whereby subsidy is provided towards the cost of private geriatric hospitals established by religious or welfare organisations, building has commenced on an extension to the Presbyterian Social Service Association's existing Lady Allum Hospital, Takapuna. A number of similar projects are also at various stages of planning, but subsidies have not yet been approved.

The following tables give details as at 31 March 1971, 31 March 1970, and 31 December 1964 of the numbers of licensed private hospitals and the types of beds licensed in New Zealand:

Type of Hospital	Number of Hospitals			Number of Licensed Beds		
	31 March 1971	31 March 1970	31 Dec 1964	31 March 1971	31 March 1970	31 Dec 1964
Maternity	15	15	24	135	135	219
Medical and Surgical ..	39	39	44	1,057	1,048	989
Medical	86	82	73	1,756	1,583	1,227
Medical and childrens (Kari-tane)	6	6	6	295	295	286
Maternity, medical, and surgical	3	3	4	464	463	480
Psychiatric	2	2	2	33	33	31
	151	147	153	3,740	3,557	3,232

Type of Bed	Number of Beds		
	31 March 1971	31 March 1970	31 Dec 1964
Maternity	228	228	322
Medical and surgical	1,428	1,418	1,366
Medical	1,816	1,643	1,287
Childrens	235	235	226
Psychiatric	33	33	31
	3,740	3,557	3,232

Medical Laboratory Technologists' Board

Negotiations between the board's subcommittee on training and the Technicians' Certification Authority on the introduction of a New Zealand Certificate of Science (Medical) course reached a successful conclusion during the year; and the course was introduced in 1970 for students enrolled at technical institutes in Auckland, Wellington, Christchurch, and Dunedin. Students taking this course are released by their laboratories for 8 hours per week to attend lectures and practical instruction at these institutes. Trainees have been enrolled in 1971 at Hamilton Technical Institute, and Palmerston North intends to participate in this scheme in 1972. Tribute must be paid to Dr W. Stewart Alexander who, as convenor of the board's training subcommittee, was largely responsible for the successful outcome of the negotiations.

A joint advisory committee has now been set up by the Department of Education, on which the three Medical Laboratory Technologists' Board's education subcommittee members sit, to discuss the content of the Technicians' Certification Authority course, and prepare teachers' notes, etc., for the various subjects covered by the syllabus. The New Zealand Institute of Medical Laboratory Technology and the Society of Pathologists have given their support to this committee.

Further consideration was given to the training of students employed in hospital laboratories in centres which have as yet no technical institute offering this course. Following lengthy negotiations between the board and the Department of Education, the Department of Health approved the introduction of block courses for these trainees at the Central Institute of Technology at Petone. A pilot scheme has been arranged for 1971, to last approximately 3 months, for 12 to 15 students and it is hoped that this will be the forerunner of regular courses covering each of the 3 years of the New Zealand Certificate of Science (Medical) course. The initial response to this scheme by hospital boards has been most encouraging, and despite short notice the names of 39 trainees have been submitted for consideration.

Although the board's Basic Training Certificate and the New Zealand Certificate of Science (Medical) will necessarily continue as alternative qualifications for some years to come, it is expected that the latter will in the course of time replace the board's basic certificate. The ensuing 2 years of training required before the acquisition by trainees of the Certificate of Proficiency will remain the responsibility of the Medical Laboratory Technologists' Board. However, preliminary thought has been given to ways in which the Department of Education might later become involved in this area also.

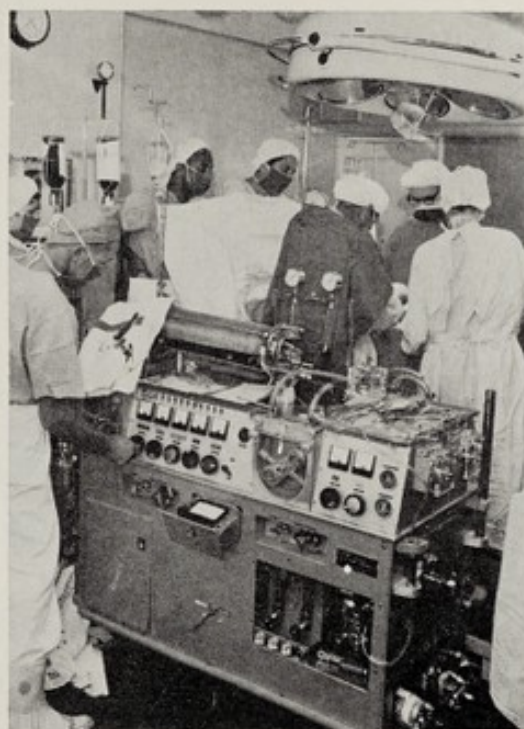
Negotiations have continued during the year between the department and the New Zealand Institute of Medical Laboratory Technology on the question of registration of technologists under the Medical and Dental Auxiliaries Act. With the help of the department's office solicitor, preliminary draft regulations have been prepared, and if these are found acceptable to the institute's members and to the Society of Pathologists, a suitable amendment to the Act will be introduced in the 1971-72 legislative programme.

At the February 1971 board meeting, Dr C. A. Taylor tendered his resignation after 5 years' service as chairman of the board. It was with regret and with sincere thanks for his great help in the past that his resignation was accepted by the Minister. Dr Taylor has given freely of

MEDICAL CARE SERVICES



1. Preparation Unit, Green Lane Hospital, Auckland.

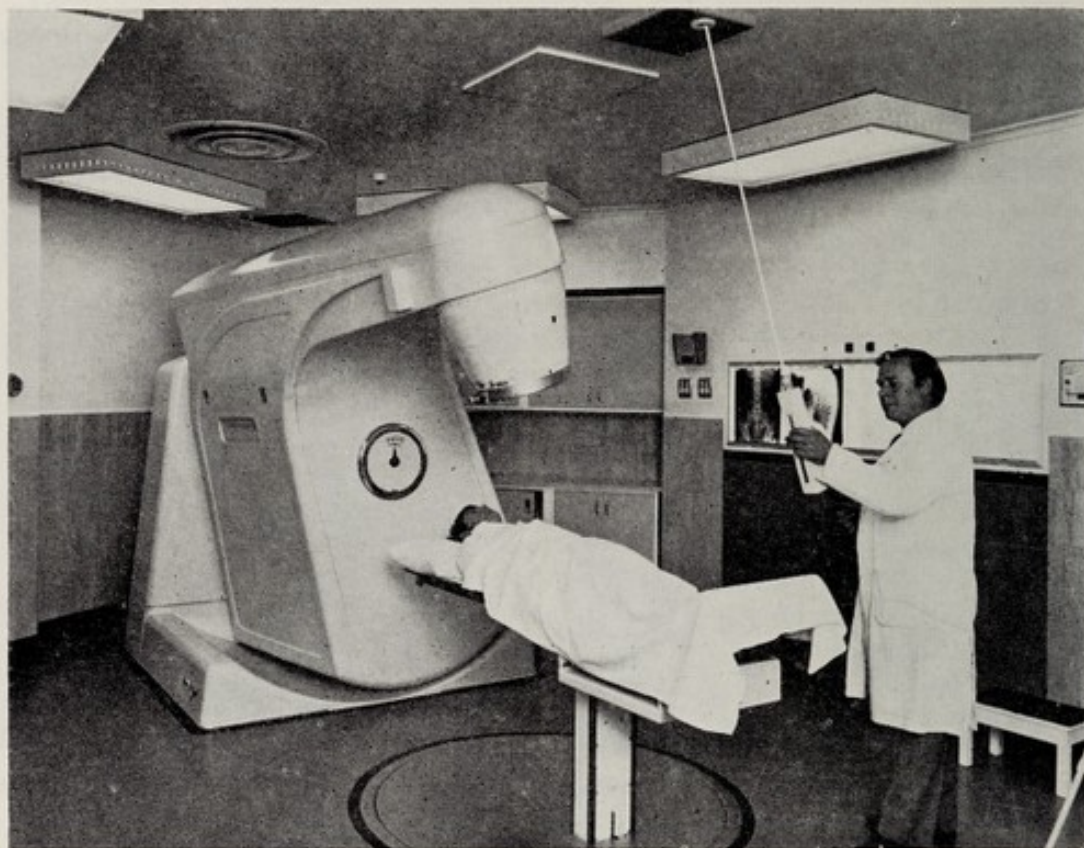


2. Operating Theatre, Green Lane Hospital, Auckland.

3. A donor has her blood group checked at the Blood Transfusion Centre, Auckland.

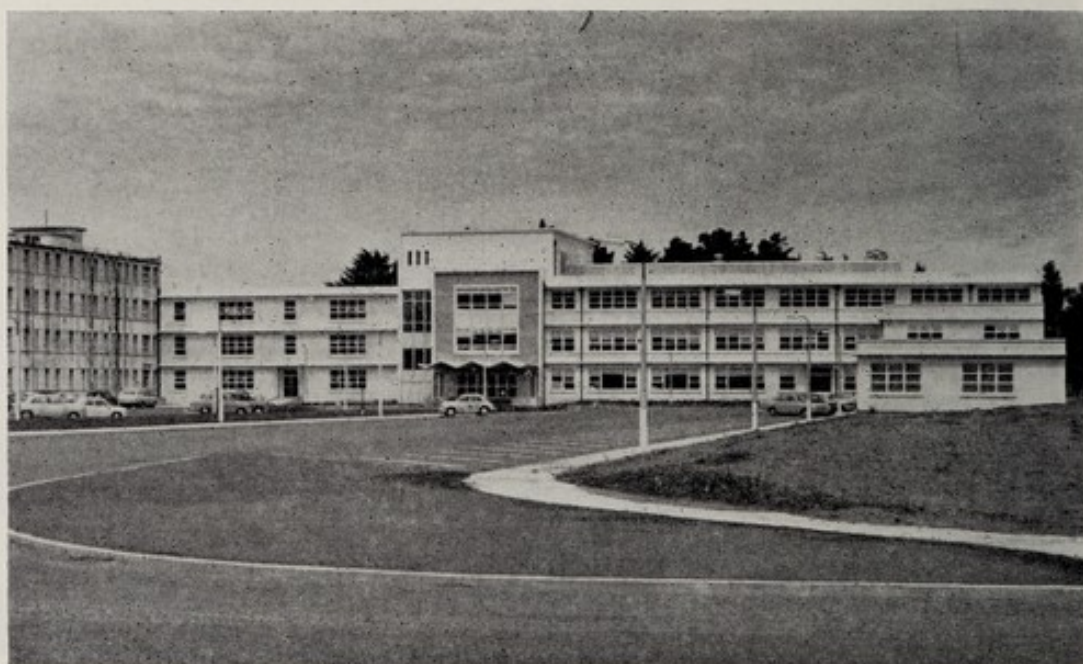


MEDICAL CARE SERVICES



4. Linear accelerator in the Radio Therapy Department, Christchurch Hospital.

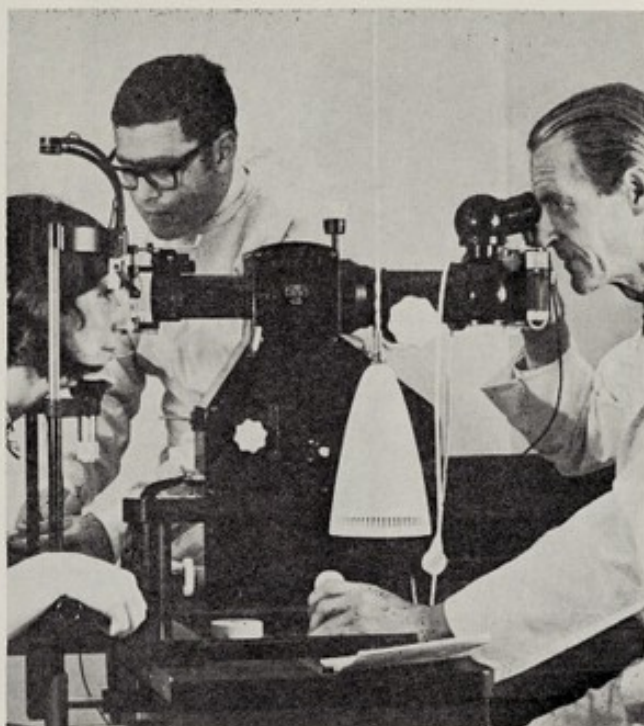
5. Clinical Services Block at Southland Hospital, Kew, Invercargill.



MEDICAL CARE SERVICES

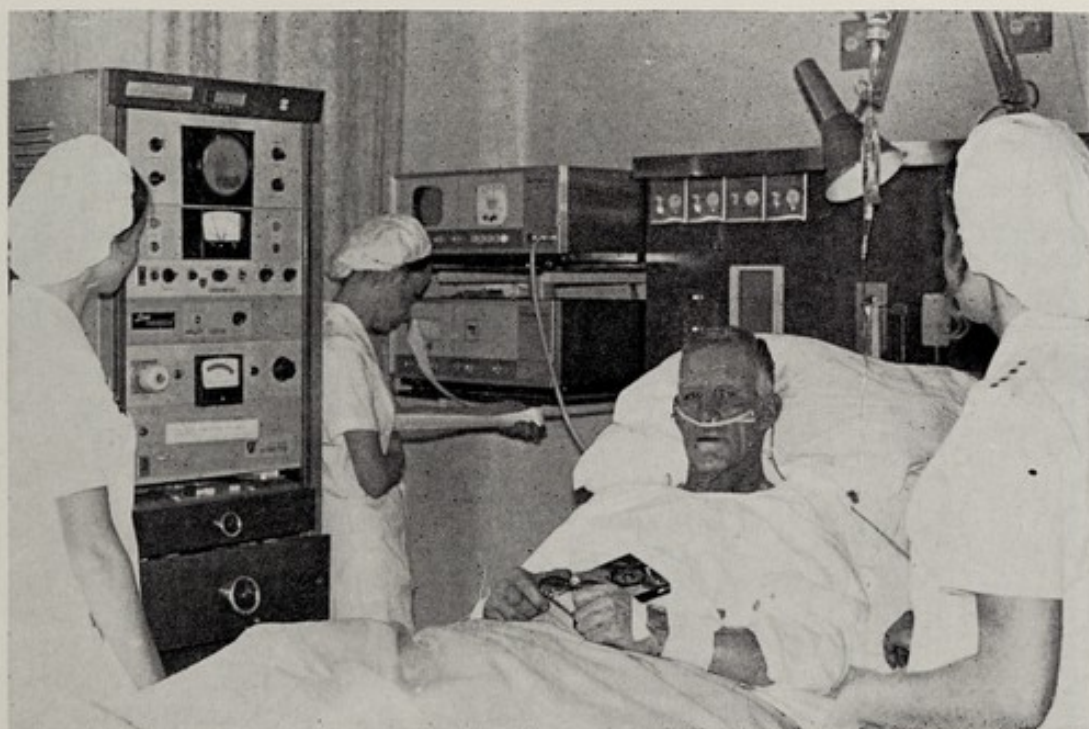


6. Flame spectrophotometry in microbiology at Dunedin Hospital.

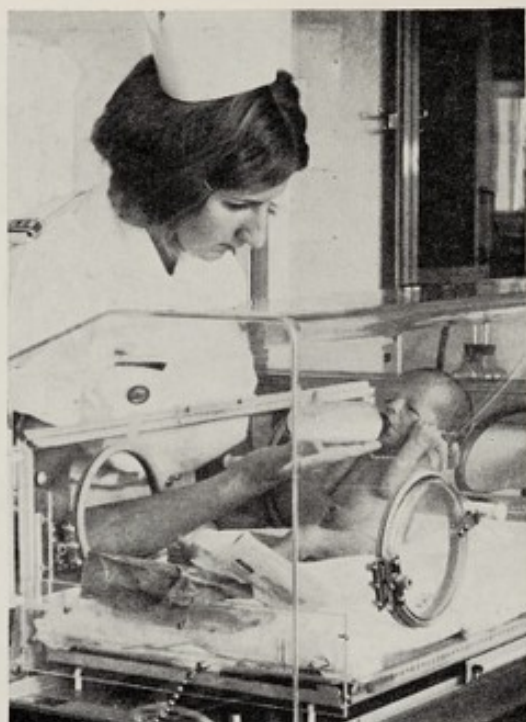


7. Fluorecein angiography. Ophthalmological research, Dunedin Hospital.

8. Cardiac research in Intensive Care Unit at Dunedin Hospital.



MEDICAL CARE SERVICES

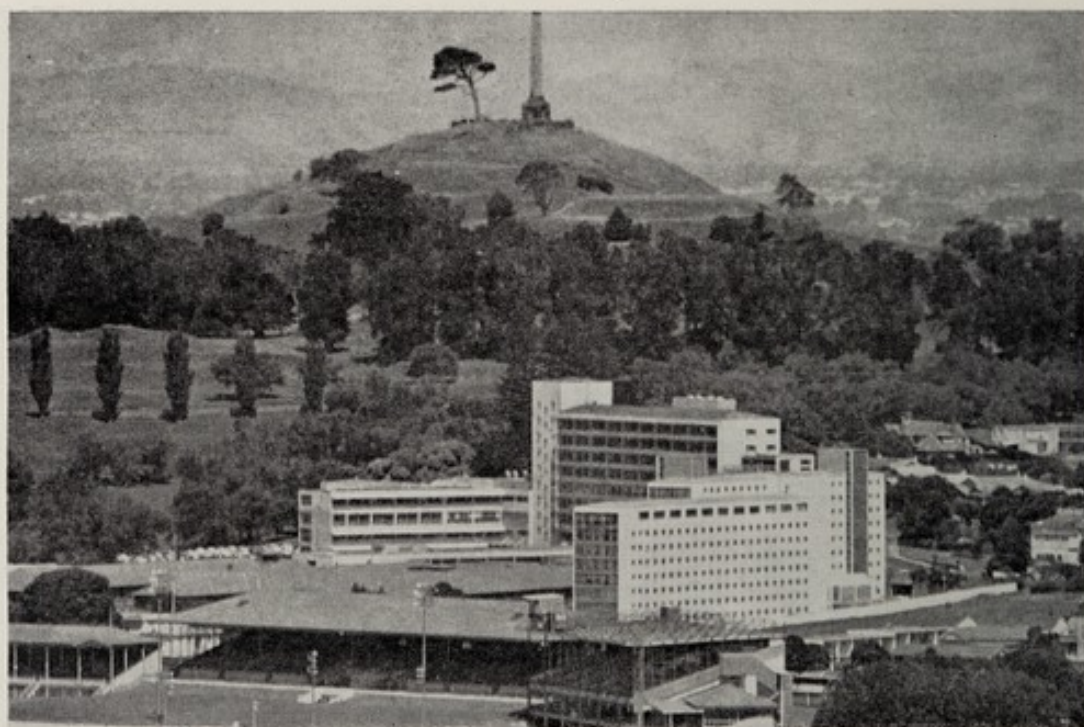


9. Neonatal Intensive Care Unit at National Women's Hospital, Auckland.



10. Maternal and Child Care in the Community—Medical officer and public health nurse examine a baby's ears.

11. National Women's Hospital, Auckland—Telephoto view. Beyond is One Tree Hill.



MEDICAL CARE SERVICES



12. Psychiatric Unit, Palmerston North Hospital.

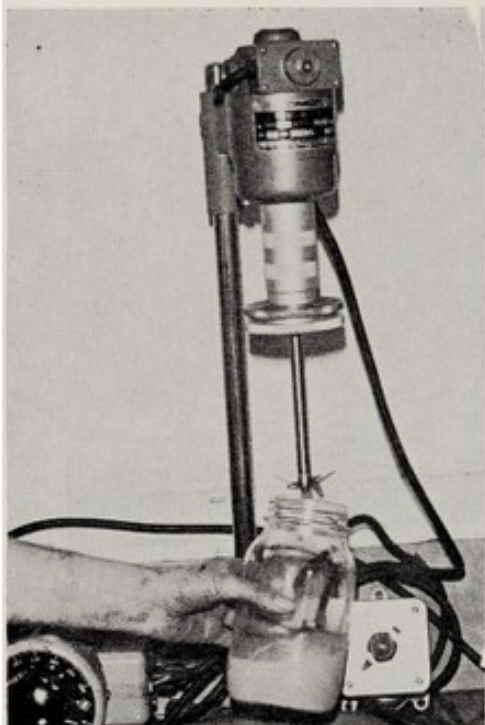
13. Visitors at morning tea. Children come to see patients at the psychiatric unit.



14. Psychiatric Unit conference with social workers of public hospital staff.



PUBLIC HEALTH SERVICES



15. Vaccination—The lymph in this jar, when purified, processed, and passed to WHO Standards, will produce about 50,000 doses of smallpox vaccine. National Health Institute.



16. Air Pollution—Industrial sources of pollution, such as chemical works, are required to control emissions which are tested regularly by departmental inspectors. This test is being made by Mr Ek Tieng Lee, a Colombo Plan engineer from Singapore.

17. Eye Safety at Work—Occupational health nurse talks to workers on eye protection at the Occupational Health Clinic, Petone.



PUBLIC HEALTH SERVICES

The New Zealand School Dental Service celebrated its 50th anniversary in May 1971

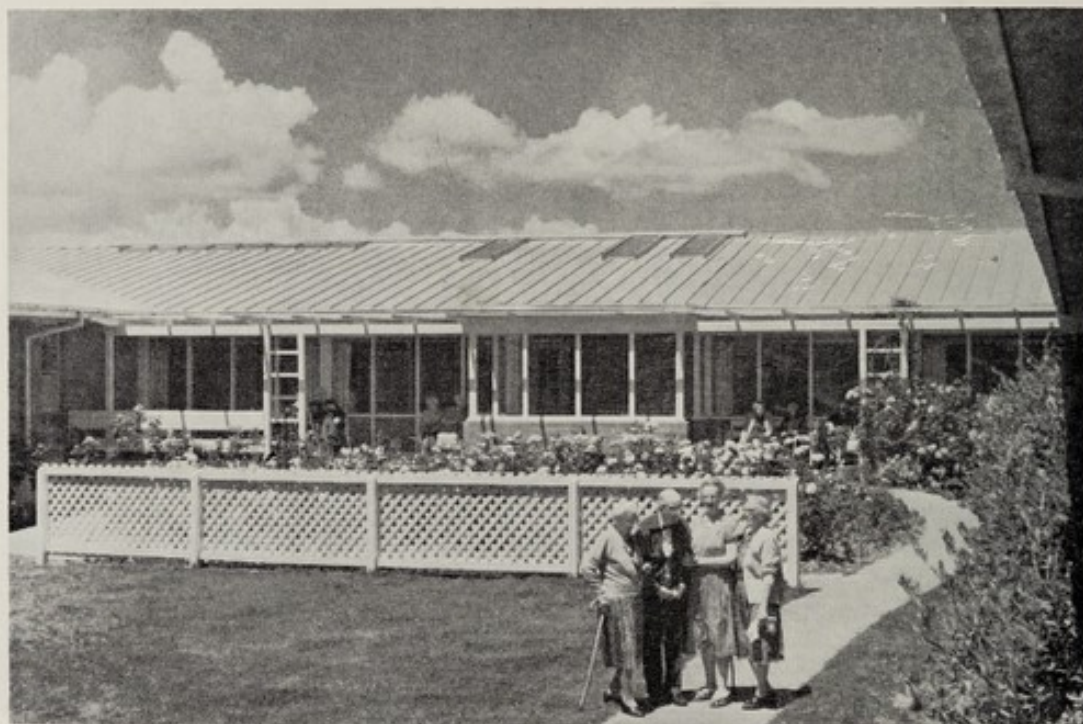


18. Pioneer nurses at practice during the pre-clinical phase of the course in the early 1920s.

19, 20. The Mangere Section Clinic of the Auckland School for Dental Nurses, built in 1969. Twenty-five student dental nurses provide dental care for 3,000 children. With an air of happy informality some of them leave after treatment. Showing exterior and surgery.



WELFARE SERVICES



21. Russell Kemp Home. Titahi Bay, Wellington. Residents have single bedrooms and facilities where they can meet each other or occupy themselves in various ways. Those who depend entirely on nursing live at the hospice.

22. Two of the residents.



23. Two residents in a four-bed ward of the hospice.



his time and energy in furthering the cause of medical laboratory technology in this country and his services in this field will be long remembered.

Hospital Nutrition

During the year, appointments to the positions of advisory dietitian and dietitian, in the department's head office have been made. This has made possible a significant extension of the previously limited advisory service available to hospital dietary departments on matters relating to administration, food service, and kitchen equipment.

The department's dietitians have been involved in the organisation and running of short courses for food supervisors employed in mental hospitals, and for personnel employed in school hostels and private hospitals. Visits were made to seven mental hospitals and joint consultations have been held with officers of the Mental Health Division and the Health Services Research Unit on the increasing centralisation of hospital food services.

Advice has also been given to the Department of Education on the planning of school hostels and on alterations to child welfare homes.

The number of full-time dietitians employed by hospital boards has fallen to 52 but there has been a corresponding rise in part-time married dietitians from 10 to 17. Several hospital boards have not been able to fill vacancies on their establishments for dietitians.

During 1970, 21 students who undertook dietetics training passed the State examination and of these, 20 have since been registered by the Dietitians Board. This year 12 bursaries have been awarded to home science students.

2. REHABILITATION AND PHYSICAL MEDICINE

Rehabilitation

The Disabled Re-establishment League has continued during the year to develop its centres in Auckland, Wellington, Christchurch, and Dunedin, to provide training in work habits, work experience, and some sheltered employment. Assessment units have also been set up at these centres to provide vocational assessment of the cases referred to the league.

Progress on the rebuilding of the Pukeora Home for the Disabled at Waipukurau and the building of the new medical rehabilitation unit at Palmerston North have progressed favourably and are due for completion late in 1971.

For some time, a committee consisting of representatives of the Hospital Boards Association, the Orthopaedic Surgeons Association, the Orthopaedic Technicians Association, and the Department of Health and called the Central Committee on Training Orthopaedic Technicians has been planning a training programme for this paramedical group. Included in its work have been the grading of hospitals in New Zealand for training purposes, the grading of present technicians, and the drawing up of a complete training syllabus and programme for surgical appliance and footwear makers. The first examinations were conducted by the committee in February 1970, and these will be repeated annually.

Training of Occupational Therapists

The possibility of transferring to the tertiary education field the training of occupational therapists was further discussed during the year by the Education Department, the Health Department, and the Occupational Therapy Board. It was finally agreed that such a transfer should take place and Government approval was given for a new school to be established at the Central Institute of Technology at Petone, with the first intake of students to be admitted in 1971. Associated with this transfer, students went on to a Health Department bursary system, instead of the previous salary system.

The New Zealand School of Occupational Therapy in Auckland will continue to operate until the end of 1972, when it is anticipated that all students currently in training there will have graduated.

Physiotherapy and Occupational Therapy

The shortage of trained physiotherapists and occupational therapists has continued. It is hoped with the establishment of an occupational therapy training school at the Central Institute of Technology that the number of occupational therapy students in training can be increased to alleviate the present shortage. Discussions are continuing between the Health Department, the Department of Education, and the Physiotherapy Board on the future training of physiotherapists.

During 1970, 39 physiotherapists and 32 occupational therapists graduated from their respective schools.

3. MENTAL HEALTH

Introduction

Two features of the work of the Mental Health Division in 1970 call for some general comment. On 1 April 1970 the Mental Health Act 1969 came into operation, as the first major enactment in the mental health field since 1928. The work of preparation of this legislation was spread over a number of years and in its concluding stages involved, as seems to be inevitable with all mental health legislation, considerable controversy and occasional sharp divergences of opinion. Nothing on a comparable scale has been attempted in New Zealand since the drafting of the abortive 1947 Mental Health Bill.

Because of administrative changes resulting from the altered legal provisions certain figures of movement of mental hospital patients will show substantial alterations from last year's report. Detailed reference to this is made in another section. One figure which is strictly comparable is that of the average number resident in hospitals of the Mental Health Division, which for 1970 was 10,169 as compared with 10,245 for 1969. This figure follows a trend which has been commented on in previous annual reports; namely the reduction in the actual proportion of the population which is under care in the hospitals. It is interesting to note that the continuing downward trend of this figure has occurred at a time of admitted shortage of professional resources in the field of psychiatry and under legislative provisions which were acknowledged to be rather outdated. Had the Mental Health Act 1969 been passed some 10 years earlier there would doubtless have been claims forthcoming

that it was the legislative changes which led to the reduction in the average number of occupied beds. It is still much too early to say whether or not any significant movement in the observed rate of reduction will occur with the new Act in force.

The second feature was highlighted by the commissioning during the year of Manawaroa Psychiatric Unit at Palmerston North Hospital. The development of psychiatric units in general hospitals has over the last 10 years proceeded at the greatest rate permitted by available resources of professional staff. Manawaroa represents a new departure in that it is a unit provided from the capital resources of Mental Health Division and staffed by that division in part, with the remaining staff and all services provided by the Palmerston North Hospital Board. Two similar units in the South Island are due to be commissioned early in 1971.

Further trends in the direction of integrating psychiatric services with other regional forms of health service can be expected to emerge quickly. But the full effect of this movement and its ultimate benefits will not be experienced until the integration of existing psychiatric hospitals with other services of the hospital boards in their present regions has been achieved. Planning for integrated services has now been going on for some years and in certain regions has made very satisfactory progress. The present arbitrary and artificial administrative distinctions between mental health and other services continue, however, to impose avoidable delays on the evolution of a truly comprehensive system of health care.

Hospital Admissions and Discharges

Figures given below are provisional for the calendar year 1970 with the corrected 1969 figures shown in parentheses¹.

Figures for Queen Mary Hospital, Hanmer, and Ashburn Hall (licensed institution) are included but those for admission to Rotoroa Island under the Alcoholism and Drug Addiction Act are shown separately at the end of the paragraph.

First admissions	..	..	..	3,348	(3,483)
Readmissions ..	..	..	..	5,150	(4,291)
Total admissions	..	..	..	8,498	(7,774)

The average number of patients resident was 10,169 (10,245) and removals from the registers were 8,989 (7,729). There were 6,540 outright discharges (4,909) and 685 patients died in hospital (702). The total discharged or dying while on leave was 1,764 (2,118). Included in the above admission figures was 272 (232) under the Alcoholism and Drug Addiction Act 1966.

Rotoroa admitted 56 (114); this figure is not included in the totals.

Comment

The positive trend to lower bed occupancy continues. Numbers for trial leave have dropped with a corresponding fall in total numbers on the register. These, together with a significant rise in readmissions reflect

¹For detailed presentation consult N.Z. National Health Statistics Centre. Medical Statistics Report, Part II, Mental Health Data, 1969. N.Z. Govt. Printer, 1970.

changed administrative procedures as the result of the Mental Health Act 1969, rather than significant differences in the clinical sense. Several categories of patient who would previously have been placed on leave when they went from hospital are now discharged, with the result that the subsequent return to hospital now shows as a readmission. This change has also affected the figure of total admissions.

The fall in first admission rates can be seen as a direct result of expanded work in the community particularly in outpatient and day-care services and the increasing facilities at general hospitals. With the commissioning of three further psychiatric units built by Mental Health Division at Palmerston North, Wakari, and Kew Hospitals, this will probably continue. By contrast, a rise in readmission rates is to be expected. With increasing flexibility in the use of hospital beds and the trend to earlier discharge of the psychiatric patient, increasing numbers must be expected to present for a further period of hospital care and treatment at a later date. In this context it is possible to see stable and declining readmission rates as having an undesirable significance. Even with the steady build up of after-care services, as reported by the individual hospitals, readmission rates cannot be expected to fall. Much psychiatric illness is of an intermittent or recurrent pattern so that readmission to hospital is not to be seen as necessarily implying therapeutic failure.

It is not easy to assess with accuracy the true meaning of a rising rate. To do this requires a more detailed and sophisticated treatment than is appropriate for this report.¹

For the first 9 months of operation of the Mental Health Act 1969 the proportion of patients admitted under formal orders remained fairly constant. Committed patients made up 21 percent of admissions in the period and there were also 7 percent of admissions in special status. The remaining 72 percent came under the new informal provisions.

These percentages are quite satisfactory, although the long-term aim must be to diminish the proportion of committed patients. Local variations as between hospitals have been quite marked and the percentage of committed patients in the admissions to metropolitan hospitals tends to be consistently above the national average. Although it is too early to draw definite conclusions, certain observations suggest that some doctors in the community may at times still cling to older modes of thought and traditional practices, so that they will certify patients for admission, in preference to making arrangements with the hospital concerned for informal admission.

In some instances doctors have obviously used certification procedures for mentally infirm patients who seem eminently suitable for informal status. There is no doubt that this has sometimes been done to "jump the waiting list" at hospitals which have, very reasonably and properly, placed restrictions on the previously uncontrolled admission of all cases presenting. It is to be hoped that this is a mere passing difficulty and not the beginning of a general trend. Medical superintendents are

¹E.g., see N.Z. National Health Statistics Centre. Medical Statistics Report, Part II, Mental Health Data 1969, N.Z. Govt. Printer, 1970, and "The Function and Utilisation of Mental Hospitals" in *The Organisation and Evaluation of Medical Care*; the proceedings of the post-graduate seminar held in Dunedin, New Zealand, on 22, 23, and 24 July 1970. Edited by J. S. Dodge, Dunedin, Dept. of Preventive and Social Medicine, University of Otago, 1970.

entirely within their authority if they refuse to admit such cases or if they chose as an alternative to accept them in an informal status and disregard the existence of unnecessary medical certificates. Full and early consultation with the medical staff of psychiatric hospitals would go a long way towards resolving this problem.

Staffing

Medical Staff

During the year the medical staff position remained relatively stable with recruitment balancing resignations and retirement. In addition to recruitment from overseas of four psychiatrists (one a New Zealander returning), two of the division's own medical staff returned from an extended tour of post-graduate study and experience. Also one medical superintendent completed a WHO short-term fellowship observing primarily in the United Kingdom and the United States, and another was on senior study leave in the United Kingdom. A number of inquiries about more junior appointments in 1971 have already been made and it is likely that at least another three or four doctors will be recruited early in the year.

Psychologists

Training of clinical psychologists at Canterbury continues to provide a small but steady supply of recruits to hospitals and some other universities are beginning to develop courses in this important specialty. With appointments pending the strength of this section should reach 22 whole-time equivalents early next year.

Training Officers

The role of the training officer at the psychopaedic hospital has been under study by a small working party from the Departments of Health and Education with a representation from the Intellectually Handicapped Children's Society. This important and in some ways unique category of staff has evolved rapidly and there is a need to plan in detail both the future occupational aspects of the job and its likely relationship to other specialised work with the mentally subnormal. The report of the working party is likely to have some impact on the overall pattern of services.

Nursing

As a background to consideration of the rather complex problem of nursing staff strength it is useful to summarise the increases in staff establishments for the Division of Mental Health since 1961:

Established for year ending	Professional and Therapeutic Staff	Administration and Service Staff	Total
31 March 1961	.. 2,228	1,051	3,239
31 March 1966	.. 2,596	1,386	3,982
31 March 1970	.. 3,426	2,173	5,599
31 March 1971	.. 3,749	2,179	5,928*

*This figure includes 272 positions for Medical, Psychology, and Occupational Therapy staff, and the staff employed in the Psychiatric Units at Kew in Invercargill and the Palmerston North Hospital.

The increases in service staff, particularly in the catering and domestic sections, represent an indirect but very substantial reinforcement of

nursing resources. The majority of newly established jobs in these categories were a direct expression of the policy of freeing trained nursing staff from a weight of non-nursing duties that traditionally they had carried.

Throughout 1970 significant shortages of nursing staff continued at a number of hospitals, despite local efforts to attract recruits. Vacancies showed regional differences and at some hospitals were of insignificant proportions while at others they were of the order which fully justifies the often overworked term "staff shortage". In the last quarter of the year a slight but definite fall in staff in the Auckland region was observed, although no special reason for this was obvious. In July total vacancies for the first time exceeded 500 in an establishment of 3,138. Following a pattern which has been apparent for many years the greatest number of vacancies, amounting to over a quarter of all nursing vacancies in the division, still occurs at Porirua hospital.

Overtime

At a time when higher standards of treatment and care are constantly sought by both medical staff and the public, any decrease in numbers of nurses is sharply felt. Inevitably there are calls for staff to work overtime, rather than see standards drop.

As is well known, there are limits to the amount of overtime which can be worked without loss of efficiency. It is also obvious that heavy demands made in this way will have an unfavourable effect on recruiting. Since 1966 the division has directed that staff may not be required to work beyond an average of 8 hours of overtime a week. At a number of hospitals the amount of overtime called for is much less than the permitted limit.

When a hospital exceeds the permitted overtime limits the staff involved have agreed to work the extra hours. Some staff have accepted this burden out of a sense of loyalty to their hospital and duty to their patients. But there are also some staff members who are anxious usually for financial reasons, to be rostered for overtime duty. Despite the admitted undesirability of much overtime work, the hospital administration may have to deal with small but very definite pressures against its attempts to set reasonable limits. It is also not unknown for staff who have specially asked to be rostered for extra overtime to make some public complaint about the hours they have to put in.

The very small minority of staff who chose to act in this way have an altogether disproportionate effect through the publicity they attract. They may believe that they are actually serving the hospitals' interests. They may, particularly in this day and age, believe that the only effective source of executive and political action is public protest. It has not yet been shown that recruits in any significant numbers or of good quality are attracted by such publicity.

Standards of Accommodation

For many years the term "overcrowding" has been in familiar use in discussion of mental hospital conditions. The term itself is unsatisfactory and imprecise. In so far as it means "patients in excess of optimum number" for a ward or hospital it gives some indication of the situation

that exists; but even here it does not really distinguish between situations which fall well below an acceptable standard and others, less serious, which are simply a failure to achieve a desired goal.

Figures based only on a total number of beds for a hospital are of little value; national figures of even less. Some years ago "overcrowding" in mental hospitals was expressed by aggregating the official number of beds and setting this figure off against the total of patients in the hospitals. The overcrowding figure for 1963, arrived at this method, was of the order of 800. The deficiencies of this attempt to assess standards by crude arithmetical computation is obvious.

More recently figures have been prepared showing the numbers of patients in excess of the standards accepted and the numbers of vacant beds as separate totals. These give a truer, but still not completely accurate picture. At the end of 1970 there were, for the hospitals as a whole, some 420 patients shown as being in excess of the standard accommodation in their wards, but a total of 444 vacant beds was also reported. It is clear from these figures that "overcrowding" as it would have been reported for mental hospitals 10 years ago, no longer exists.

Identified problems are still very real at certain hospitals but in each case the current building programme will solve the difficulty. New standards are being set for individual wards at all hospitals as the team from the department's Health Services Research Unit carries out the necessary functional surveys. The advice and assistance of the department's inspectors of health is also sought as appropriate in the local situation. The figure finally decided on takes account of both functional and aesthetic considerations. It is based on actual living requirements and not simply reached by an arithmetical computation based on available floor space. This is a major exercise, which is also linked to long-term plans for the relocation of beds as required by shifting populations and new trends in health service planning.

Hospitals accustomed to bed occupancy rates of 100 percent or more during the whole working life of the senior professional staff, almost inevitably come to regard this as the "normal" state of affairs. Although they dislike it, they are not fully aware of its disadvantages. The notion that "we can always find room for one more", although usually based on strong humanitarian attitudes, leads inevitably to discomforts and disruptions in the lives of patients, particularly those in the long-stay category, which should be avoided.

No precise figure can be given but it is reasonable to assume that a working margin of vacant beds must exist at all times if a psychiatric hospital is to be thoroughly efficient. This provision is at least as important in long-stay accommodation as in acute wards, but it is certainly no easier for hospitals to resist demands for beds in long-stay wards than it is to refuse acute admissions. However, hospitals and the public alike are so accustomed to the older order of things that the presence of unoccupied beds in long-stay wards is still seen as a reproach to the hospital administration in many cases.

Integration of Health Services

It is now certain that the hoped for integration of psychiatric with general hospital services cannot take place on 1 April 1971 as intended, since the necessary empowering Bill is still with a select committee.

Despite this, the stimulus provided by the impending change has brought much closer working relationships between staff of many categories in the two services. No amount of central planning or direction can substitute for effective local liaison and it is a hopeful sign that this liaison is beginning to develop as a normal working pattern. It is obvious that each section of the hospital service needs to know more about the other and it is also increasingly apparent that each has gaps in its knowledge of the other's field. More reprehensible is the fact that the existence of these gaps can still be regarded with complacency at times.

In their annual reports the majority of medical superintendents refer to some degree of anxiety and unrest among staff who see the approaching goal of an integrated health service as a threat. While some degree of anxiety in the face of changes is normal, it is difficult to accept as realistic fears expressed about job security and career prospects when it is widely acknowledged that there is an unfilled demand for competent and qualified staff in all sectors of the health services.

Regrettably some of the "isolationist" attitudes which continue to appear can only be faced as part of the legacy from a period when society rejected the mentally ill. Inevitably this attitude evoked some counter response from the staff who cared for psychiatric patients. The full consequences of this will not be abolished simply by the administrative integration of the still separate services: but this is the first step which must be taken before any real progress is to be expected.

4. CLINICAL SERVICES

Particulars of expenditure on health benefits will be found in table 6 of the appendix.

The total cost of health benefits was \$61,660,757, an increase of \$8,602,918 over the previous year's figure.

A. Royal Commission on Social Security

This Royal Commission which sat throughout the year, had included in its order of reference the following: "Any changes considered to be desirable to the nature and extent of medical, specialist, and pharmaceutical benefits, and the criteria for determining entitlement thereto."

The Department of Health submitted six principal papers:

Background Paper: Medical, Specialist, and Pharmaceutical Benefits.¹

Papers I: (A) Administration of Health Services in New Zealand.
(B) Legislative Basis for Payment of Medical Benefits.

II: Entitlement to Health Benefits.

III: Aspects of the General Medical Services and Specialist Consultation Schemes.

IV: Supply and Distribution of General Practitioners.

V: Pharmaceutical Benefits.

¹Reprinted in the *New Zealand Medical Journal*, January 1970, p. 38.

At the request of the Royal Commission, the department also submitted papers on the various supplementary benefits and on the arguments for and against charges on prescriptions.

In presenting Paper I, the Director-General of Health explained the department's policy in future planning was to work towards "integration of health services and the devolution of power to local authorities", on the ground that "the consumers of health services are the final and proper judges of what kind of services they want".

The principal recommendations of the department may be summarised as follows:

(a) *General Medical Services*—

(i) An attempt should be made to negotiate with the medical profession a "usual fee" for general medical services, the benefit for which would normally be accepted in full settlement where the patient is aged under 15 years or over 65 years, or is a social security beneficiary or pensioner who at present qualifies for the higher rates of GMS benefit; and a GMS benefit for services to patients aged 15 to 65 years which would normally be accepted as meeting an agreed percentage of the total fee.

(ii) Provision should be made for 3-yearly adjustments to general medical services benefits in accordance with movements of the Consumers' Price Index.

(iii) Negotiations should be undertaken with a view to arriving at benefits for general practitioner participation in approved immunisation programmes which would be accepted in full settlement of the doctor's fee.

(iv) It should be confirmed that general medical services include health examinations and prophylactic treatment, except where specifically excluded.

(b) *Continuing Postgraduate Education*—A system of seniority payments for general practitioners should be introduced, on the basis of an extra percentage added to GMS payments, conditional upon the production of satisfactory evidence of regular post-graduate study.

(c) *Specialist Consultation Benefit*—An attempt should be made to negotiate a higher benefit for specialist consultation where the patient is aged under 15 years or over 65 years, to be accepted in full settlement; and the specialist consultation benefit should be reviewed at agreed intervals.

(d) Group Practice should be actively encouraged by Government and by the Department of Health. Its advantages should be regularly and repeatedly brought to the notice of doctors, and general practitioners should be given all possible assistance towards forming groups for this purpose.

(e) The principle of payment of a subsidy towards the employment of *practice nurses and other paramedical personnel* in general practice, both rural and urban, should be adopted, payment being devised in such a way as to encourage practice in groups and health centres, and to make special provision for the groups of patients referred to in (a) (i) above.

(f) When introducing the payment of a subsidy towards the employment of *practice nurses in urban areas*, this should be arranged in such a way as to ensure that the use of nurses in this capacity is properly planned and phased in gradually, taking due cognisance of nursing needs elsewhere.

(g) *Pharmaceutical Benefits*—A variable percentage part-charge on prescriptions to be introduced, with exemptions for persons outside the age group 15–65 years, and for certain social security beneficiaries and pensioners.

(h) *Laboratory Diagnostic Services*—A variable part-charge on laboratory diagnostic services by private pathologists to be introduced, private pathologists being permitted to charge a reasonable fee over and above the benefit.

B. Medical, Maternity, and Specialist Benefits

Medical benefits paid during the year for general medical services and specialist services totalled \$11,041,129—an increase of \$1,942,466 on the 1969–70 expenditure. The increase is accounted for by a full year's claims for the higher GMS benefit payable for social security beneficiaries and pensioners, and the specialist consultation benefit; \$652,102 was paid by way of benefit for initial specialist consultations.

Following the biennial review of maternity benefits and negotiations with the Medical Association of New Zealand, Government has approved increases in the rate of benefit for all normal services and the majority of extraordinary services. The scope of the benefit has also been widened to include a post-miscarriage consultation. The increases are operative as from 1 April 1971.

Supply of Doctors in Private Practice

Estimates of general practitioner shortage vary with the viewpoint of the observer and the standards applied. In preparing the 1970 edition (issued in January 1971) of the pamphlet *Where Should I Practise?*,¹ a twofold approach was adopted. Inquiries about known vacancies in general practice were addressed to medical officers of health and 48 local doctors scattered throughout the country. Midway through the year these inquiries disclosed 59 acknowledged vacancies in urban areas and 69 elsewhere—a total of 128. In addition, the workload of urban and rural general practitioners was closely scrutinised, taking into account the effects in reducing this workload of hospitals and private specialists. The conclusion was drawn that while the rural shortage quoted above was reasonably accurate, the urban estimate was too low: in large towns when doctors leave, those who remain take up the slack, and the true extent of the shortage is seldom appreciated. The department estimated that the equivalent of at least 150 extra general practitioners in full practice was required—about 80 in urban areas and 70 elsewhere.

In May 1970, the Director-General of Health addressed a personal letter to all New Zealand doctors living overseas, detailing the improvements which have taken place in the past 4 years in hospital salary rates and gradings, health benefits, and incentives for private practice, especially in rural areas.

¹THOMPSON, A. W. S.: *Where Should I Practise?* Wellington, Govt. Printer, 1970.

Employment of Rural Practice Nurses¹

A detailed survey was carried out in November 1970. This showed that of the 247 doctors entitled to claim practice nurse subsidies under the scheme, only 70 (28 percent) were employing them. Particulars were obtained about 66 of these nurses.

Of these about half (32) had already been working in the doctor's rooms when the scheme commenced. The remainder were equally divided between those employed in public hospitals or other nursing duties, and those not employed in any nursing capacity. In 12 instances the nurse was the doctor's wife. Nearly all doctors, and some nurses, supplied comments, many of them lengthy. Although nine replies included criticisms of the scheme, five made suggestions for its future operation, the vast majority were favourable, and many were enthusiastic. Two instances may be quoted:

- (a) "The main advantage has been a renewed interest in my work, to which I feel I can now apply myself with more efficiency. I work as many hours as formerly, but, relieved of time-consuming procedures, can spend more time on adequate clinical appraisals—thus, the true advantages are passed on to patients. My nurse . . . says that she very much enjoys her work, with particular reference to the close involvement with the community."
- (b) "The scheme is one of the most advanced steps in medicine in New Zealand for many years. It takes the mundane and routine work off the doctor and allows him to concentrate on the more medical side of practice and even allows him to catch up on current literature—something unknown before. It is also starting to provide better medicine in that more information is recorded in the patient's file; information previously lost through the work being done (if at all) by other agencies not under the control of the general practitioner."

Dr H. D. Law, visiting practitioner, has been making systematic inquiries amongst *urban* doctors about their views on the possible employment of practice nurses. It is interesting to find that about one-third are not in favour of the idea or are definitely opposed to it; one-sixth are enthusiastic; while half occupy an intermediate position. It is reasonable to believe, therefore, that the extension of this scheme to urban areas would not result in an immediate or serious drain on the nursing resources of the country, as some have feared.

Group Practice Loan Scheme

This scheme was introduced in August 1970. By the end of March 1971, loans totalling \$209,000 had been provisionally approved or authorised for six group practice schemes, while two others were under consideration. Seven of these schemes were for new purpose-built premises (two to six doctors per group), the eighth being for the extension of existing premises.

¹See N.Z. Dept. of Health. Annual Report, 1970. N.Z. Govt. print., 1970, p. 77.

Local Authorities: Incentives for Private Practice

Under the policy of providing loan finance to local authorities wishing to establish housing and surgery accommodation for doctors in rural areas, several schemes were initiated during the year. Others are at present under consideration.

Specialist Consultation Benefit

A crisis developed in connection with the administration of this scheme, over the question of specialist recognition for anaesthetists. The Medical Association of New Zealand wished to extend the operation of this benefit to as many anaesthetic patients as possible by applying much less stringent standards for "specialist" recognition of anaesthetists than those which had been adopted in other disciplines. The Minister of Health eventually referred the matter to the Medical Services Advisory Committee. On their recommendation the legislation was amended so that a preoperative check does not qualify for the consultation benefit unless it is in fact a true consultation, and the giving of an anaesthetic by a specialist anaesthetist does not rank as a specialist medical service. The effect of this is that specialist anaesthetists may claim extended time payments for prolonged anaesthetics (as general practitioners have been able to do for several years) while only an anaesthetist who is apt to be used by his fellows in a true consultant capacity would benefit by being recognised as a specialist for the purposes of this benefit.

A further amendment to the legislation was called for when the Medical Association of New Zealand notified the Minister of Health that they no longer wished to be involved in the question of selecting doctors for recognition as specialists for the purposes of the consultation benefit.

C. Pharmaceutical Benefits and Drug Control

From 1 September 1970 the Division of Clinical Services assumed responsibility for almost all the drug functions of the department relating to therapeutic substances for human uses. This includes advising the Minister of Health about consent to distribute new therapeutic drugs, the sale of surgical dressing materials, disinfectants, germicides and antiseptics, medical advertisements, poisons legislation in regard to therapeutic drugs, and the administration of the licensing and recording requirements for narcotics.

The most onerous of these responsibilities are those relating to new drugs, which may not now be distributed without the consent of the Minister of Health, published in the *Gazette*. To assist in this work an expert advisory body, the Drug Assessment Advisory Committee, was set up. During the year consent to distribute a total of 52 new drugs was published in the *Gazette*.

Cost of Pharmaceutical Benefits

The cost was \$30,783,063, an increase of \$3,475,175 over the previous year. The average cost per prescription was \$1.52 (\$1.44 last year) and 19,026,626 were passed for payment (18,950,688 last year), equal to 6.7 per head of population (6.8 last year).

Reapportionment of Payments to Retail Pharmacists

From 1 April 1970, by agreement with the Chemists' Guild, a new basis of payment was introduced. On-cost payments on prescribed drugs were reduced from an average of about 43 percent to 20 per cent. To compensate, the dispensing fee was replaced by a higher service fee which varies according to the amount of time and skill involved in dispensing the prescription.

Surveys of Doctors' Prescribing Costs

During the year, 631 doctors were included in surveys of 30 areas.

Visiting Practitioners

The two visiting practitioners called on a total of 984 doctors in private practice. Dr H. D. Law covered the whole of his territory with the exception of part of metropolitan Auckland. Dr A. C. D. Parsons spent 4 months assisting at head office when the Director of Clinical Services was occupied with the Royal Commission on Social Security, but in 8 months he visited 401 doctors. The carefully written, detailed reports submitted monthly by these officers are invaluable in keeping the Division of Clinical Services informed about the condition of medical practice in all parts of the country. The fact that visiting practitioners have themselves recently been in general practice encourages their colleagues to speak freely about their problems and aspirations.

Lectures to Final Year Students

Members of the staff of the Clinical Services Division addressed meetings of final year students at sub-faculties of the medical school.

D. Supplementary Benefits

The total cost came to \$9,374,965, an increase of \$1,747,301 over the previous year. The cost of laboratory diagnostic services rose by \$1,192,589 to a total of \$5,334,798.

The Laboratory Services Advisory Committee, at a meeting on 22 September 1970, considered the probable future effects of the trend towards automation in laboratory work, and the growing demand for routine profiles (batteries of laboratory tests) in clinical assessment. As a result the Fees and Schedule Committee of the New Zealand Society of Pathologists was asked to draw up and submit to the department a reasonable costing for various profiles, together with a proposed new schedule of fees, subdivided into manual and automated tests. A Board of Health Committee has also been set up to consider the organisation and administration of laboratory services generally.

A Clinical Services Letter will be issued shortly, drawing the attention of doctors to the costs of those laboratory tests which are most frequently requested.

5. NURSING SERVICES

Nursing Service in Hospitals

Staff of the hospital nursing service section of the Division of Nursing visited 12 hospital boards and 11 departmental hospitals during the year. In most instances a complete review of the administration of

nursing service was undertaken, although some visits were for the purpose of studying and making recommendations on specific problems. Many of the recommendations made have already been implemented. The advisory services of the section were made greater use of by both public and private hospitals.

The Nursing Division has concentrated on the study of the use of qualified nurses in hospitals, noting that too many qualified nurses are reluctant to practise nursing and leave the profession for other employment. Of the 15,739 hospital board nurses 537 (3.4 percent) were employed as supervisors or in the various categories for matrons. Only 194 of these hold the New Zealand Diploma of Nursing (or its equivalent), the recommended minimum education for such positions. In psychiatric and psychopaedic hospitals 124 nurses hold similar positions, 6 only having the qualification mentioned.

Hospital administrators need to review the use of senior nursing staff, too many of whom are involved in management tasks for which their qualifications are unnecessary. Others spend a high proportion of time relaying information about staff and patients to those above or below them. A system of "watchers" and "watchers of watchers" seems to subsist, when there is an urgent need for these well qualified nurses to be clinically involved with patients. However, a growing awareness that staff might be better utilised is apparent and it is hoped that this will be increasingly demonstrated in practice during 1971.

The involvement of nurses in the placement and rostering of nursing staff is currently being studied. There is evidence that too many nurses are spending too much time in this activity, which requires nursing judgment but to a limited extent.

A review of the titles used in nursing is necessary to ensure that they are suitable for both males and females and that as far as possible they describe the responsibilities of the job and can be readily understood in New Zealand. This task involves an examination of roles and responsibilities and will require full consultation with all interested groups.

The number of nurses working at staff sister level has shown a slight increase, but has not kept pace with the demands for this category of staff in both general and specialist hospital units, in doctors' private practices, and in community health nursing. Further, unless there is an increase in the number of nurses coming to New Zealand from overseas and in the number of persons returning to nursing, next year's figures will show a substantial decrease in available staff at this level. Although there has been a small but steady rise in the numbers entering nursing, there was a drop of 300 in registered nurses qualifying in New Zealand last year.

The community nurse programme was designed to prepare a nurse who could give basic nursing care under the supervision of a registered nurse or a doctor. Unfortunately, the public hospital nursing service has not been able to retain these nurses in numbers which will make an appreciable difference to the structure of the work force. Registered community nurses form only 4.7 percent of the total work force for hospital boards and 0.8 percent of the work force in departmental hospitals. There has, however, been a slight increase in the numbers retained in these hospitals and a fairly substantial increase in those employed in private hospitals. The use in some hospitals of "patient"

assignment of work rather than "job" assignment should help to retain these nurses in positions where they can understand and fulfil their own roles.

Without doubt there is an urgent need to recruit back into nursing those who have qualified and left the profession. This will require some imaginative planning and in some settings the abandonment of some strongly entrenched and traditional views which appear to have little to commend them.

The challenge of the seventies in hospital nursing service lies in further investigation of the shortage of "nursing" rather than concentration on the shortage of qualified staff. It is obvious that more can and must be done to encourage the fullest utilisation of the knowledge and skills of those who have qualified and wish to practise in this field.

The outstanding effort made by hospital staff last year to maintain and extend services, in spite of the existing problems, indicates that this challenge will be accepted and the necessary stocktaking, and in some instances, replanning will take place.

Nursing Education

The present system of nursing education continues to be a matter of grave concern. An analysis of the annual statistical returns from schools of nursing for the year ending 31 March 1970 confirms that:

- (a) There is a national loss of 45 percent of students from basic nursing programmes.
- (b) Only 29.7 percent of all tutors hold the minimal recommended qualification for teaching, the New Zealand Diploma of Nursing or its equivalent.

Confronted with these and other problems which have been documented in previous annual reports and in the department's publication *A Review of Hospital and Related Services*, we welcomed the visit of Dr Helen Carpenter, Director, School of Nursing, University of Toronto, as a short-term WHO consultant on nursing education. Her report clearly states the deficiencies in the present system of nursing education and objectively points out that health services are likely to be endangered unless radical changes are made. Her main recommendations are outlined in the Director-General's introductory section of this annual report. The report and its recommendations should be studied by everyone responsible for the delivery of health services and by those who, at some time, are likely to require nursing services.

So far there has been an overwhelming response to this report. While there might be disagreement on some of the details of it there is substantial agreement by all interested groups that major changes must be made in the system of nursing education.

Much of the work of the education section of the Division of Nursing during 1970 was centred around preparation for and assistance with the above WHO study. The Assistant Director, Nursing Education, worked as counterpart to the consultant for the months of the study. It is hoped, with further study of the report, we will be able increasingly to see the value of this objective assessment, and, with the report's implementation, where practicable, to ensure the improvement of both basic and post-basic nursing education in this country.

The staff of the Division of Nursing last year visited 12 schools of nursing for the purpose of reviewing nursing education. Full reports, including recommendations, were returned to hospital boards. These are studied by education committees of schools of nursing with a view to implementation as the committees decide and information is returned to the department.

Work has continued towards the consolidation of schools of nursing with a view to centralising scarce and expensive resources such as qualified tutors, libraries, and audio-visual aids, and to ensure adequate clinical experience for student nurses. Progress is slow and the number of schools of nursing stands at 46 which, when compared with the number of universities, teachers' colleges, and technical institutes, is difficult to justify either in terms of sound educational planning or expenditure.

Much more adequate provision for part-time university study leave for nurses has been granted. This provision is more liberal than that provided for kindred groups in similar situations and gives some assistance in making up the education "lag" in nursing. Tutors have expressed disappointment that "education" was excluded as an approved major area of study. It seems obvious that this matter will need to be reviewed in the light of the WHO nursing consultants report.

Post-basic nursing education programmes have continued to be offered in the 10 certificate courses conducted at hospitals. It is recognised that these courses must be re-examined in light of the roles nurses are expected to fill, the advances in medical science and technology, and trends in education.

In April 1970 the title of the post-basic school for the preparation of nursing leaders was changed from the New Zealand Post-graduate School to the New Zealand School of Advanced Nursing Studies. This change was necessary because of the confusion caused through the use of the term "post-graduate" in the old title. Some students, particularly those from overseas, believed they were enrolling in a post-graduate programme while what the school offered was post-basic programmes.

Sixty-two students attended the school last year. Of these 57 were full time students, 4 were studying health education part time at the school and 1 attended part time as a special student because she was not eligible for the Diploma of Nursing.

Summary of sponsoring agencies:

	Students
Hospital Boards	30
Department of Health—	
Public Health	11
Mental Health	2
Plunket Society	4
World Health Organisation	4
Government of country of origin	1
SCAAP	1
Independent students	5
Total	58

Of the 57 full time students, 1 for family reasons, did not complete the year. All 56 students were granted the Diploma of Nursing. Eighteen students with University Entrance or a higher educational qualification completed Psychology I at Victoria University. Thirty-nine students completed Social Studies, Part I, in the Extension Department of Victoria University.

The Diploma of Nursing Programme followed the pattern established in 1969. Nineteen seventy was a year of consolidation of the new programme.

There is now a marked increase each year in the extent to which the diploma students are willing to think and study independently. They show interest and expect to take an active part in the administration of the school and in curriculum development and are given every encouragement to do so. Their expectations of the quality of teaching and selection of course content are increasing and throughout the year they offer constructive criticism and suggestions in both administrative and educational matters. This process has been enhanced through the attendance of two students at staff meetings throughout the year and the practice of conducting some staff meetings toward the end of the year in the presence of all students. These meetings are mainly concerned with evaluation for the current year and planning for the next year, and all students have the opportunity to participate. They participate again in evaluation when asked to complete a detailed questionnaire 6-12 months after leaving the school.

A WHO sponsored Training Centre for Nurses was opened as part of the New Zealand School of Advanced Nursing Studies in January 1970. One nurse instructor was appointed to the staff of the Division of Nursing and she is responsible to the school's principal. Eight students mainly from the South-east Asian region successfully attended the 1-year course last year. A further 11 students from the same area have enrolled for the 1971 course.

The New Zealand Department of Health has combined with the World Health Organisation to provide this opportunity for overseas students, who for one reason or another do not qualify for entry to the diploma programme. All students greatly extended their knowledge of English at the Wellington Polytechnic and all had the opportunity to study the theory and practice of nursing in their respective fields. For this and other courses at the school the greatest assistance was given by various health agencies in, around, and away from Wellington. This valuable contribution to the clinical content of these courses is sincerely appreciated by the staff of the school.

6. WELFARE SERVICES: CARE OF THE AGED

Introduction

It is clear that, despite increasing building costs, reasonable progress continues to be made in providing residential accommodation for the aged. However, from the representations made to the department by the religious and welfare agencies primarily active in this work, it is equally clear that there is, in many areas, a shortage of beds for the present elderly population, while insufficient provision is being made for the increasing numbers of people who will require this type of accommodation in the coming years.

Some concern is being expressed in church circles about their ability to cope with the financial burden of continuing expansion of this social service. This concern is engendered by two factors—the proportion of the capital cost, over and above Government subsidy, which the churches must meet in establishing new homes and hospitals for the elderly, and the operating deficits frequently incurred in running them. Leaving aside the question of cost to Government of additional financial assistance which may become necessary to relieve the burden, this problem does emphasise the need to maintain elderly folk in their own homes for as long as possible with the aid, if necessary, of domiciliary services provided by the hospital boards. The appointment by the Wellington Hospital Board of a Director of Extra-Mural Services is, therefore, a pleasing development and follows a well established service provided by the Auckland Hospital Board.

Homes and Hospitals—Religious and Welfare Agencies

In last year's report mention was made of Government's approval of a 3-year \$7½ million subsidy programme designed to reduce substantially the backlog of subsidy applications then on hand. The department, in conjunction with the organisations concerned, evolved a tentative subsidy programme to implement this decision. The current year was looked upon as one during which planning would proceed to take full advantage of this increased allocation in the second and third years. However, rising construction costs were tending to undermine this programme, owing to the sponsoring organisations being unable or unwilling to find their share of the cost over and above subsidy.

In recognition of this situation Government, as from 15 February 1971, increased the maximum rate of subsidy from \$4,800 to \$5,750 per bed in respect of an old people's home and from \$6,000 to \$7,200 per bed for geriatric hospitals. The additional subsidy of \$400 per bed for hospitals providing approved rehabilitation facilities continues.

Assistance Granted

The total assistance granted since the inception of the subsidy policy in 1951 is \$18,058,868 and in all has provided 4,809 new beds.

During the year subsidies totalling \$1,897,859 were approved towards the establishment of 268 home beds and 44 hospital beds and the up-grading of some existing homes.

The current programme is:

	Home	Hospital	Total
Beds commissioned 1970-71 ..	206	20	226
Under construction ..	220	95	315
Approved—awaiting construction ..	250	..	250

Pensioner Housing

Rental Accommodation

The partnership between Government and local authorities in providing pensioner rental accommodation has continued and 314 flats were completed during the year while 218 flats are in the course of construction.

The escalation in building costs which occurred during the year resulted in a number of local authorities finding it impossible to build within the framework of the policy limitations of the subsidy scheme. As from 1 February 1971, Government varied these limitations and, in place of a single subsidy, substituted two—one for the cost of the land and its development, the other for the flats erected on the subsidised land. The maximum subsidy payable for land and its development is \$1,000 per flat, the maximum permitted cost of the flats is now \$6,000, the first \$3,000 of the cost being met by way of a State Advances loan at 3½ percent interest, the balance of the cost up to \$3,000 being by way of subsidy. The maximum possible subsidy has, therefore, been increased from \$2,500 per flat to \$4,000 per flat.

It is hoped that this revised scheme will be of particular value in high-cost areas which, in general, have the greatest need for pensioner flats and where local authorities have recently faced the greatest difficulty in building under the previous policy.

A summary of the year's programme is as follows:

	Number of Schemes	Singles	Doubles	Total Units
Completed 1970-71 ..	34	273	41	314
Under construction ..	17	214	4	218
Approved (a) awaiting construction ..	11	128	9	137
Approved (b) unlikely to proceed under po- licy pertaining when approved ..	8	195	..	195

The amount of subsidy expended in 1970-71 was \$983,000. The 314 flats completed during the year brought the total number of flats provided since the inception of this scheme in 1951 to 5,164 single and 1,007 double flats, thus providing accommodation for 7,178 elderly persons.

Licensing of Old People's Homes

Government has approved of territorial local authorities assuming the responsibility for the licensing of old people's homes and the Municipal and Counties Associations have agreed. Discussions have commenced on the necessary amendments to the Old People's Homes Regulations 1965.

Meals on Wheels and Laundry Services

Twenty-nine of the 31 hospital boards and 1 voluntary organisation continue to operate meals on wheels services with a further 3 being administered by the Department. Four hospital boards extended their service into new areas during the year.

Three thousand three hundred and ten elderly people were being assisted by this very acceptable service at 31 December 1970—an increase of 236 over the year—and the total number of meals delivered increased from 704,568 to 783,135. It is evident that although overall numbers

continue to increase the service in most districts is fairly well stabilised. A key factor in the continuing operation of this scheme is, of course, the availability of voluntary drivers and helpers.

Laundry services are provided by 17 hospital boards.

Government Lottery Funds

The Welfare of Aged Persons Distribution Committee was again allotted \$215,000 for distribution during the 1970-71 financial year.

Apart from the annual grants to welfare councils, which were increased to meet their rising costs, the money was primarily used to assist with the construction of or extensions to club rooms and furnishing old people's homes run by religious or welfare agencies.

Board of Health Committee on the Care of the Aged

The committee held its first meeting in April 1970 and has met on five subsequent occasions. Apart from giving consideration to the recommendations of the 1967 Report of the Board of Health Committee, it has considered various topics, in particular the problems associated with domiciliary services, the needs of the elderly confused, and overall planning for the aged sick. For the dual purpose of updating information on accommodation needs and obtaining information on the elderly confused, a national survey has been proposed.

Accommodation for Young People

Some organisations have been assisted to upgrade their existing hostels, and two new projects were approved for subsidy during the year. Two major proposals involving 94 additional beds are under consideration. The question of the Department of Labour assuming responsibility for the administration of this subsidy policy is still being pursued.

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Table 1—School Dental Service Statistics (Figures for the Previous Year in Parentheses)

SCHEDULE 1

	1971	(1970)
Number of school dental nurses	1,354	(1,341)
Number of treatment centres (including sub-bases) ..	1,324	(1,297)
Number of schools	2,554	(2,585)
Number of children	590,885	(582,964)
Operative dental treatment—		
Total number of fillings	2,583,102	(2,647,861)
Number of carious permanent teeth extracted ..	84	(145)
Number of carious deciduous teeth extracted ..	62,227	(65,900)
Total number of carious teeth extracted ..	62,311	(66,045)
Total number of operations	5,313,204	(5,277,885)

EXPLANATORY NOTE—The total number of fillings amounting to 2,583,102 is to be contrasted with 62,311 teeth removed as unsavable. This latter figure, together with 6,994 extracted for School Dental Service patients by contracting dentists under dental benefits, represents a ratio of 2.7 teeth to every 100 fillings.

SCHEDULE 2

Adolescent Dental Service

Statistics relating to treatment rendered as social security dental benefits are as follows (figures for the previous year in parentheses):

	1971	(1970)
Number of children enrolled for general dental benefits as at 31 March 1971	154,591	(151,632)
Number of children who ceased to be enrolled for general dental benefits on attaining 16 years of age	44,671	(43,677)
Total amount paid private practitioners for treatment rendered under general dental benefits	\$2,689,376	(\$2,265,346)
Number of completed treatments in respect of which the above sum was paid	271,394	(256,779)
Average cost per completed treatment for general dental benefits	\$9.91	(\$8.82)

SCHEDULE 3**Ratio of Extractions to Fillings Over the Past 46 Years**

Year Ended 31 March				Fillings	Extractions	Ratio of Extractions per 100 Fillings
1925	..	..	..	59,322	43,181	72.6
1935	..	..	..	399,560	70,207	17.5
1945	..	..	..	1,017,290	76,335	7.5
1955	..	..	..	1,440,245	83,247	5.8
1965	..	..	..	2,324,017	81,030	3.4
1970	..	..	..	2,647,861	73,148	2.8
1971	..	..	..	2,583,102	69,305	2.7

SCHEDULE 4**Treatment of Pre-school Children**

Year Ended 31 March				Number of Pre-school Children Treated Over the Past 20 Years	Approximate Percentage of Total Pre-school Population 2½ to 5 Years of Age
1950	..	..	..	22,514	19
1955	..	..	..	44,976	35
1960	..	..	..	63,012	44
1965	..	..	..	82,690	53
1970	..	..	..	87,197	60
1971	..	..	..	88,573	60

TABLE 2—Hospital Works Programme as at 31 March 1971 (Projects over \$20,000 only*)

—	Total Estimated Cost	Expenditure up to 31 March 1971	Expenditure 1970/71	Estimated Expenditure 1971/72	Estimated Expenditure 1972/73	Estimated Expenditure 1973/74	Estimated Expenditure 1974/75	Estimated Expenditure 1975/76	To Complete
Category A	(\$000) 60,317	(\$000) 26,057	(\$000) 12,362	(\$000) 16,193	(\$000) 7,445	(\$000) 4,116	(\$000) 3,032	(\$000) 2,461	(\$000) 1,013
Category B	134	3	92	121	10	..	..	..	..
Category C	14,760	426	159	4,290	4,741	2,760	1,293	800	450
Sub-totals	75,211	26,486	12,613	20,604	12,196	6,876	4,325	3,261	1,463
Category D	8,822	104	..	1,200	1,657	2,143	1,981	592	1,145
Category E	48,450	1,105	157	2,509	6,834	9,018	8,395	7,452	13,137
Category F	67,935	269	177	1,690	4,772	7,159	9,660	12,214	32,171
Category G	41,909	133	9	1,011	1,452	3,374	4,128	3,148	28,663
Sub-totals	167,116	1,611	343	6,410	14,715	21,694	24,164	23,406	75,116
Totals—									
31/3/71	242,327	28,097	12,956	27,014	26,911	28,570	28,489	26,667	76,579
31/3/70	256,695	38,828	13,041	23,039	27,324	24,423	21,431	22,433	99,217

*In addition the total value of projects \$1,000 to \$20,000 was approximately \$1,300,000 for the year ended 31 March 1971.

Category A = Work commenced.

Category B = Acceptance of tenders authorised.

Category C = Tenders called.

Category D = Working drawings approved.

Category E = Sketch plans approved.

Category F = Preparation of sketch plans authorised.

Category G = Provisionally approved.

TABLE 3—Infant, Neonatal, Post-Neonatal, and Still-birth Mortality by Race, 1964–1970

Year	Infants (Deaths Under One Year)			Neonates (Deaths Under 28 Days)			Post-neonates (Deaths 28 Days and Under 1 Year)			Still-births		
	Total Population	European	Maori	Total Population	European	Maori	Total Population	European	Maori	Total Population	European	Maori
1970	..	1,040	830	210	542	98	400	288	112	671	576	95
1969	..	1,057	876	181	593	84	380	283	97	625	519	106
1968	..	1,164	939	225	646	92	426	293	133	752	637	115
1967	..	1,102	862	240	584	101	417	278	139	735	623	112
1966	..	1,064	844	220	579	98	387	265	122	668	574	94
1965	..	1,174	940	234	627	100	447	313	134	718	609	109
1964	..	1,193	954	239	671	101	421	283	138	814	716	98
<i>Numbers</i>												
1970	..	16.7	15.4	25.4	10.1	11.8	6.4	5.3	13.5	10.7	10.6	11.3
1969	..	16.9	15.8†	24.3†	10.5	12.6	6.1	5.2	11.7	9.9	9.5	12.6
1968	..	18.7	17.4	27.4	11.9	11.2	6.8	5.4	16.2	11.9	11.6	13.8
1967	..	18.0	16.2	29.7	11.2	12.5	6.5	5.2	17.2	11.9	11.6	13.7
1966	..	17.7	16.1	28.0	11.1	12.4	6.5	5.0	15.6	11.0	10.8	11.8
1965	..	19.5	18.0	29.8	12.1	12.7	7.4	6.0	17.1	11.8	11.5	13.7
1964	..	19.1	17.5	30.0	12.3	12.7	6.7	5.2	17.3	12.9	13.0	12.2
<i>Rates*</i>												

*Per, 1,000 live births for infant, neonatal and post-neonatal deaths and for 1,000 total births for still-birth deaths.

†These figures have been amended as they had been incorrectly calculated.

TABLE 4—Deaths of Infants Under 1 Year (European, Maori, and Total Population, 1966–70)

Principal Cause of Death			Number of Deaths					Rates per 1,000 Live Births				
			*1970	1969	1968	1967	1966	*1970	1969	1968	1967	1966
All infant deaths: under 1 year	..	E	824	855	939	862	844	15.3	15.8	17.4	16.2	16.1
		M	216	202	225	240	220	26.1	24.3	27.4	29.7	28.0
		T	1,040	1,057	1,164	1,102	1,064	16.7	16.9	18.7	18.0	17.7
Influenza, pneumonia and bronchitis	E		114	95	132	119	92	2.1	1.8	2.4	2.2	1.8
	M		64	46	74	71	63	7.7	5.5	9.0	8.8	8.0
	T		178	141	206	190	155	2.9	2.3	3.3	3.1	2.6
Gastro-enteritis, diarrhoea, and dysentery .. ..	..	E	19	9	9	10	11	0.4	0.2	0.2	0.2	0.2
		M	9	9	17	14	21	1.1	1.1	2.0	1.7	2.7
		T	28	18	26	24	32	0.5	0.3	0.4	0.4	0.5
Congenital anomalies .. ..	..	E	198	226	182	195	195	3.7	4.2	3.4	3.7	3.7
		M	23	27	16	29	23	2.8	3.3	2.0	3.6	2.9
		T	221	253	198	224	218	3.6	4.0	3.2	3.7	3.6
Neonatal disorders arising from certain diseases of the mother ..	..	E	69	59	41	34	22	1.3	1.1	0.8	0.6	0.4
		M	11	11	5	5	5	1.3	1.3	0.6	0.6	0.6
		T	80	70	46	39	27	1.3	1.1	0.8	0.6	0.5
Birth injury, difficult labour, and other anoxic and hypoxic conditions .. ..	..	E	48	51	68	153	139	0.9	0.9	1.3	2.9	2.6
		M	18	17	9	17	19	2.2	2.0	1.1	2.1	2.4
		T	66	68	77	170	158	1.1	1.1	1.2	2.8	2.6
Asphyxia of newborn, unspecified ..	..	E	36	37	66	83	79	0.7	0.7	1.2	1.6	1.5
		M	4	9	11	28	19	0.5	1.1	1.3	3.5	2.4
		T	40	46	77	111	98	0.6	0.7	1.2	1.8	1.6
Haemolytic disease of newborn ..	..	E	18	22	24	18	15	0.3	0.4	0.4	0.3	0.3
		M	..	..	..	5	3	..	..	..	0.6	0.4
		T	18	22	24	23	18	0.3	0.4	0.4	0.4	0.3
Hyaline membrane disease .. ..	..	E	16	31	49	35	41	0.3	0.6	0.9	0.7	0.8
		M	1	6	4	7	6	0.1	0.7	0.5	0.9	0.8
		T	17	37	53	42	47	0.3	0.6	0.9	0.7	0.8
Immaturity .. ..	..	E	60	67	85	69	73	1.1	1.2	1.6	1.3	1.4
		M	20	8	16	12	13	2.4	1.0	2.0	1.5	1.7
		T	80	75	101	81	86	1.3	1.2	1.6	1.3	1.4
Other, residual .. ..	..	E	246	258	283	146	177	4.6	4.7	5.2	2.7	3.4
		M	66	69	73	52	48	8.0	8.3	8.9	6.4	6.1
		T	312	327	356	198	225	5.0	5.2	5.7	3.2	3.8

*1970 figures are provisional.

TABLE 5—Maternal Deaths 1969 and 1970

Int. List No.	Causes of Death	Number of Deaths	
		1969	*1970
630	Infections of genital tract during pregnancy	1	..
631	Ectopic pregnancy—		
0.5	Tubal pregnancy, without mention of sepsis ..	1	1
634	Other complications of pregnancy—		
0.2	Hydatidiform mole	1	..
637	Pre-eclampsia, eclampsia, and toxæmia unspecified—		
0.0	Pre-eclampsia	1	1
0.1	Eclampsia .. ..	..	3
643	Spontaneous abortion	1	1
650	Delivery without mention of complication .. ..	..	1
653	Delivery complicated by other postpartum hæmorrhage ..	..	1
655	Delivery complicated by foetopelvic disproportion ..	..	1
657	Delivery complicated by prolonged labour of other origin	1	1
659	Delivery with rupture of uterus .. ..	..	1
670	Sepsis of childbirth and the puerperium .. ..	..	4
673	Puerperal pulmonary embolism—		
0.1	Amniotic fluid embolism	1	1
0.9	Other and unspecified	3	2
674	Cerebral hæmorrhage in the puerperium	1	1
	Total	11	19
	Rate per 1,000 live births	0.20	0.31

**Deaths in 1970* Not Classified to Pregnancy and Childbirth
But Associated Therewith**

Cause of Death	Number
Disseminated tuberculosis	1
Malignant neoplasm of bronchus and lung	1
Malignant neoplasm of cervix uteri	1
Epilepsy, other and unspecified	1
Other diseases of brain	1
Diseases of mitral valve	2
Chronic ischaemic heart disease	1
Acute bronchitis and bronchiolitis	1
Asthma	1
Motor vehicle traffic accident involving collision with another motor vehicle	1

*1970 figures are provisional.

TABLE 6—Health Benefits: Statement Showing Expenditure Since 1 April 1961

	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71
<i>Subdivision I—Maternity Benefits*</i>										
Public hospital fees ..	989,239	1,002,877	960,133	188,749	193,257	193,426	379,498	330,541	340,520	376,886
Private hospital fees ..	194,808	177,269	198,494	565,273	546,690	761,206	1,629,830	1,696,857	2,541,703	2,670,283
Medical practitioners' fees ..	474,677	584,151	581,803	18,544	16,844	16,696	34,331	37,542	71,818	82,304
Medical practitioners' mileage fees ..	21,137	20,507	19,536	2,081	2,649	2,198	3,361	3,777	2,253	3,170
Obstetric nurses' fees ..	3,717	2,943	2,691	3,206	..	3,000	..	..	..	..
Private hospital loans ..	71,437	70,763	10,866	..	..	..	..	..	..	..
	1,755,045	1,858,510	1,803,523	777,853	759,440	976,526	2,047,070	2,068,717	2,956,294	3,132,643
<i>Subdivision II—Medical Benefits</i>										
General medical services ..	4,084,558	4,016,092	4,038,776	4,091,565	4,096,844	4,050,341	8,288,660	8,209,512	9,098,663	9,784,870
GMS mileage ..	182,918	169,050	156,523	155,483	143,613	124,143	230,494	209,052	190,796	181,313
Specialist medical services ..	..	..	..	..	..	..	..	..	..	1,256,259
Rural practice bonus and other incentives ..	..	..	..	..	..	..	..	..	..	291,606
Private practice and post-graduate grants ..	..	..	..	..	..	..	..	..	..	10,655
Special area arrangements—section 117, Social Security Act ..	112,239	118,809	119,352	134,840	154,352	167,461	328,548	366,350	405,916	152,130
Group practice loans ..	..	..	..	..	..	..	..	..	..	79,648
	4,379,805	4,303,951	4,314,651	4,381,888	4,394,809	4,341,945	8,847,702	8,784,914	9,695,375	11,756,481
<i>Subdivision III—Hospital Benefits*</i>										
Treatment in public hospitals ..	4,782,976	4,797,526	4,866,804	1,302,474	1,662,226	1,888,142	4,027,046	4,139,561	4,590,359	5,290,965
Outpatient treatment ..	414,458	412,953	417,188	116,527	125,293	152,794	334,908	386,245	422,632	494,596
Treatment in private hospitals ..	942,361	939,225	1,205,330	150,517	61,407	15,910	30,630	300,043	446,444	801,405
Treatment in approved institutions ..	80,140	92,849	97,912	..	..	..	..	..	..	..
Private hospital loans ..	25,659	86,937	83,203	..	..	..	..	..	..	..
Grant to Royal New Zealand Society for Health of Women and Children towards operating costs, Karitane hospitals ..	13,977	8,204	7,930	13,354	10,407	9,602	28,154	23,089	27,513	40,054
	6,259,571	6,337,699	6,678,367	1,582,872	1,859,333	2,066,448	4,440,738	4,848,938	5,486,948	6,627,020

*Benefits not now payable to public hospitals as expenditure included in general expenditure of public hospitals from 1 April 1964.

†Previously included benefits to public hospitals.

TABLE 6—Health Benefits: Statement Showing Expenditure Since 1 April 1961—continued

Subdivision IV—Pharmaceutical Benefits

	£	£	£	£	£	£	£	£	£	£	£	£
Drugs supplied—												
By chemists	7,433,732	7,747,082	7,672,813	8,721,289	9,598,149	10,327,538	21,764,766	23,967,651	26,697,437	30,153,894		
By medical practitioners and Department of Health	75,937	70,199	61,390	71,257	86,574	89,264	179,879	205,335	278,076	167,518		
To Institutions and				61,078	71,875	118,332	327,153	285,286	332,375	461,631		
To private hospitals	170,669	170,339	179,363	13,590	267	888	6	..	..	..
Refund of customs duty to wholesalers	..	71,340	..	..	..	..	..	..	..	..
	7,678,338	8,058,960	7,913,566	8,867,214	9,756,865	10,536,022	22,271,804	24,458,272	27,307,888	30,783,063		

Subdivision V—Supplementary Benefits*

	£	£	£	£	£	£	£	£	£	£	£	£
Radiological services ..	522,997	541,547	556,891	285,562†	300,145†	323,071†	672,733†	676,810	708,227	787,114		
Laboratory services ..	882,290	1,052,566	1,180,308	1,031,172†	1,188,429†	1,344,399†	3,143,415†	3,629,787	4,142,209	5,334,798		
Physiotherapy services ..	64,078	69,356	98,503	105,537	107,417	110,776	222,033	237,302	227,301	233,774		
Specialist services (neurosurgery)	5,784	4,013	4,585	4,612	3,291	1,562	5,223	4,523	4,038	4,454		
District nursing services ..	234,490	246,954	296,642	+	+	+	+	+	+	+		
Dental services ..	1,045,629	1,142,209	1,181,635	1,196,526	1,404,945	1,370,610	2,682,616	2,513,317	2,338,683	2,800,110		
Domestic assistance ..	10,834	12,088	14,166	12,430	14,827	14,664	34,907	54,895	49,005	53,025		
Grants to public servants and dependants in respect of medical, hospital, etc., expenses while stationed overseas ..	6,554	7,707	6,577	7,456	9,131	13,578	41,438	66,819	54,319	58,320		
Artificial aids benefits ..	109,128	119,907	137,524	1,598†	1,577†	2,660†	5,004†	7,194	16,054	14,007		
(Artificial limbs, hearing aids, contact lenses, etc.)												
Payments under section 117, Social Security Act 1964 ..	13,899	50	..	31	113	725	2,464	4,450	4,342	..		
Grants to intellectually handicapped children's parents' association ..	2,494	2,788	5,037	10,141	10,569	13,768	44,808	45,826	83,386	89,263		
	2,898,179	3,199,105	3,481,868	2,655,065	3,040,444	3,195,813	6,854,641	7,240,923	7,627,564	9,374,865		
Grand totals	22,970,936	23,758,225	24,191,975	18,264,892	19,810,891	21,116,754	44,461,955	47,401,764	53,074,069	61,674,072		
Recoveries ..	3,271	8,659	5,291	10,672	3,132	5,801	17,612	16,298	16,230	13,315		
Net totals	22,977,665	23,947,566	24,186,684	18,254,220	19,807,759	21,110,953	44,444,343	47,385,466	53,057,839	61,660,757		

*Benefits not now payable to public hospitals as expenditure included in general expenditure of public hospitals from 1 April 1964.

†Previously included benefits to public hospitals.

TABLE 7: Cost per Head in Health Districts for General Medical Services, Rural Practice Bonus, and Specialist Consultation Benefit

Health District	Population as at 1 April 1970	Number of Doctors (Including Specialists)	Average Population Per Doctor	Total Cost of General Medical Service (Including Mileage)	*Total Cost of Rural Practice Bonus (Including Mileage)	*Specialist Consultation Benefit		Total Cost of Medical Services (Including Mileage)	Average Amount Claimed Per Doctor	Cost per Head of Population
						No. of Doctors Claiming	Total Cost			
Whangarei ..	95,000	49	1,939	\$ 283,308	\$ 20,929	9	\$ 14,041	\$ 318,278	\$ 6,495	\$ 3.35
Takapuna ..	672,980	690	975	2,840,276	16,793	173	190,183	3,047,252	4,416	4.52
Auckland ..										
South Auckland	243,300	180	1,351	948,113	36,306	43	87,429	1,071,848	5,954	4.40
Hamilton ..	159,050	121	1,314	554,982	13,038	28	53,743	621,763	5,138	3.91
Rotorua ..	56,010	31	1,807	201,390	8,509	8	9,021	218,920	7,061	3.90
Gisborne ..	92,860	61	1,522	296,546	10,268	17	24,925	331,739	5,438	3.57
New Plymouth	109,400	69	1,587	326,267	3,753	25	35,667	365,687	5,299	3.34
Napier ..	91,350	53	1,724	288,917	15,217	11	12,395	316,529	5,972	3.47
Wanganui ..	132,790	73	1,819	368,184	8,504	31	33,447	410,135	5,618	3.08
Palmerston North	354,310	245	1,446	1,126,292	6,424	103	105,055	1,237,771	5,052	3.17
Wellington ..										
Hutt ..	119,970	67	1,796	419,301	18,571	13	13,614	451,486	6,739	3.76
Greymouth ..	313,880	221	1,420	1,292,635	13,447	79	119,649	1,425,731	6,451	4.54
Nelson ..	102,930	55	1,871	385,116	11,695	13	13,271	410,082	7,456	3.98
Christchurch	154,400	109	1,416	658,999	17,310	37	31,749	708,058	6,495	4.59
Timaru ..	110,910	51	2,175	255,688	8,339	17	20,364	284,391	5,576	2.56
Dunedin ..										
Invercargill ..										
Total ..	2,809,140	2,075	1,354	10,246,014	209,103	607	764,553	11,219,670	5,407	3.99

TABLE 8—Payments to Private Medical Laboratories for Laboratory Diagnostic Services

Health District			No. Laboratories	Payments	Total District Payment
				\$	\$
Whangarei	..	..	1	33,363	33,363
Auckland	..	..	4 (a)	922,411	
			(b)	281,758	
			(c)	44,710	
			(d)	941,798	2,190,677
Hamilton	..	..	1	709,966	709,966
Rotorua ..	..	..	1	101,102	101,102
Gisborne	..	..	1	77,555	77,555
Napier ..	..	..	1	141,968	141,968
New Plymouth	..	..	1	49,979	49,979
Palmerston North	..	..	1	154,459	154,459
Wellington	..	..	2 (a)	293,144	
			(b)	466,258	759,402
Nelson ..	..	..	1	90,127	90,127
Christchurch	..	..	2 (a)	349,184	
			(b)	494,487	843,671
Dunedin	..	..	1	240,048	240,048
Invercargill	..	..	1	137,169	137,169
					\$5,529,486

TABLE 9—Number of Notified Cases of Poisoning Treated in Hospitals During 1970

District	1 Year and Under			2-5 Years			6-9 Years			10-15 Years			16-25 Years			26-35 Years			36 Years and Over and Age not Stated			Total		
	M		T	M		F	T	M		F	T	M		F	T	M		F	T	M			F	T
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T			
Whangarei	10	7	17	31	16	47	1	1	1	4	13	17	4	2	6	1	1	1	1	2	3	76		
Takapuna	49	42	91	89	66	155	4	4	5	7	13	20	17	54	71	27	37	17	17	37	54	430		
Auckland	23	19	42	45	16	61	1	1	1	1	13	20	42	88	130	32	53	40	40	64	104	411		
South Auckland	3	6	9	10	7	17	1	1	3	1	1	2	4	4	8	2	2	3	3	2	2	46		
Hamilton	7	12	19	51	34	85	5	2	4	5	18	23	24	61	85	21	26	17	17	29	46	288		
Rotorua	19	9	28	58	37	95	2	2	4	2	11	13	20	22	42	4	29	16	16	17	33	248		
Gisborne	10	8	18	23	16	39	2	2	4	1	1	1	2	6	8	2	3	5	2	2	4	78		
Napier	38	20	58	45	40	85	3	1	4	3	8	11	12	28	40	3	13	8	7	15	229			
New Plymouth	11	5	16	45	33	78	2	1	3	..	5	5	3	6	9	3	11	1	1	8	9	134		
Wanganui	13	7	20	19	13	32	..	..	..	..	8	8	11	22	25	7	13	7	7	16	114	
Palmerston North	14	13	27	51	28	79	..	..	..	3	8	11	12	34	46	6	17	23	11	26	37	223
Wellington	10	10	20	63	54	117	2	2	2	1	6	7	34	79	113	15	12	19	19	45	64	350		
Lower Hutt	14	11	25	74	57	131	3	2	5	2	14	16	12	51	63	4	20	24	17	31	48	312		
Nelson	19	6	25	42	39	81	1	2	3	2	6	8	4	22	26	3	7	10	5	21	26	179		
Christchurch	118	81	199	212	145	357	6	3	9	6	15	21	31	61	92	5	19	24	11	22	33	735		
Timaru	19	15	34	21	15	36	2	2	2	..	9	13	24	64	88	..	17	22	18	32	50	425		
Dunedin	21	14	35	121	93	214	1	..	3	4	1	3	7	16	23	2	7	9	5	6	11	121		
Invercargill	4	8	12	35	28	63	..	..	..	2	2	..	..	..	..	..	..	..	..	..	..	..
Grand Totals	402	293	695	1,035	737	1,772	31	21	52	43	137	180	255	621	876	96	243	339	198	360	558	4,472		

TABLE 10—Principal Causes of Death, 1966–1970

Cause of Death	Number of Deaths					Rates per 1,000,000 of Mean Population				
	*1970	1969	1968	1967	1966	*1970	1969	1968	1967	1966
All deaths	24,840	24,161	24,464	23,007	23,778	8,794	8,678	8,876	8,430	8,863
Tuberculosis (all forms) ..	103	100	105	77	111	36	35	38	28	42
All other infective and parasitic diseases	174	170	137	82	111	62	61	50	30	42
Malignant neoplasms	4,447	4,157	4,085	3,852	3,841	1,574	1,493	1,482	1,411	1,432
Diabetes mellitus	375	417	335	310	327	133	149	122	114	122
Cerebrovascular disease ..	3,194	3,070	3,110	2,825	3,067	1,131	1,102	1,128	1,035	1,143
Active rheumatic fever and chronic rheumatic heart disease ..	203	207	210	180	202	72	74	76	66	75
Other forms of heart disease and hypertension	8,065	8,303	8,587	8,221	8,344	2,855	2,982	3,115	3,012	3,110
Influenza	214	51	39	17	49	76	18	14	6	18
Pneumonia	1,449	1,379	1,370	1,050	1,214	513	495	497	385	452
Bronchitis	892	798	807	692	758	316	286	293	254	283
Asthma	139	138	145	161	167	49	49	53	59	62
Ulcer of stomach and duodenum ..	111	121	130	122	110	39	43	47	45	41
Nephritis and nephrosis	100	112	97	146	135	35	43	35	54	50
Motor vehicle accidents	637	582	548	620	567	226	209	199	227	211
Other Accidents	920	778	906	820	853	326	279	329	300	318
Suicide and self-inflicted injury ..	242	278	265	274	246	86	99	96	100	92
Homicide and injury resulting from operations of war ..	36	36	24	38	22	13	12	9	14	8
Injury undetermined whether accidentally or purposely inflicted	56	21	9	..	..	20	7	3	..	..
All other causes	3,483	3,443	3,555	3,520	3,654	1,233	1,236	1,290	1,290	1,362

*1970 figures are provisional.

TABLE 11a—Notifiable Diseases in New Zealand for the Year Ended 31 December 1970 Showing Distribution by Months (All Cases)

Diseases	January	February	March	April	May	June	July	August	September	October	November	December	Total	1969	1968	1967	1966
Diphtheria	1	1	..	..	..	..	..	..	2	11	8	3	7
Dysentery—	1	3	4	..	6
Amoebic	364	397	531	165	642
Bacillary	33	41	42	43	52
Eclampsia
Enteric fever—	1	5	3	..	3
Paratyphoid	21	13	34	29	37
Typhoid	207	331	552	245	394
Food poisoning	21	19	24	29	37
Hydatids	3,963	4,693	4,551	4,818	3,376
Infective hepatitis	391	463	451	427	262
Leptospirosis	89	293	496	247	162
Meningococcal meningitis	39	46	74	157	162
Ophthalmia neonatorum	41	57	42	23	63
Pemphigus neonatorum	2	13	35	17	30
Poliovirus	2	12	25	18	24
Puerperal infections	7	266	220	204	306
Salmonella infections	512	512	512	512	512
Staphylococcal pneumonia and septicaemia in the new-born infant	4	3	1	3	4
Tetanus	6	13	21	14	12
Tuberculosis—
Pulmonary	646	698	763	900	942
Other forms	123	162	149	182	186
Undulant fever	78	61	41	30	26
Acute infective encephalitis	2	1	..	2	1
Actinomycosis	86	93	5	5	10
Anchylostomiasis	1	..	..	..	..
Bilharzia	5	3	5	7	2
Leprosy	1	..	..	..	..
Listeriosis	18	32	14	12	11
Malaria	1	1	..	..	..
Ornithosis	3	..	..	..	2
Taeniasis	2
Trachoma	1
Lead poisoning	1
Dengue
Totals	602	600	530	510	381	493	492	472	594	606	648	624	6,552	7,271	7,643	7,161	6,600

TABLE 11b—Notifiable Diseases in New Zealand for the Year Ended 31 December 1970 Showing Distribution by Health Districts (All Cases)

Diseases	Whangarei	Takapuna	Auckland	South Auckland	Hamilton	Rotorua	Gisborne	Napier	New Plymouth	Wanganui	Palmerston North	Hutt	Wellington	Nelson	Christchurch	Timaru	Dunedin	Invercargill	Totals (Total Population 2,820,814)
Diphtheria	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	2
Dysentery—	1
Amoebic	364
Bacillary	46	24	51	129	23	1	..	1	..	38	4	2	..	6	..	1	33
Eclampsia	6	..	6	..	3	..	..	..	..	..	..	..	..	..	..	..	..
Enteric Fever—
Paratyphoid	1
Typhoid	9	2	..	5	2	..	3	..	..	..	..	..	..	..	..	..	21
Food poisoning	6	3	4	..	..	51	1	32	..	1	36	45	14	..	..	..	207
Hydatids	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21
Infective hepatitis	366	381	591	389	53	101	118	77	79	255	178	106	456	207	71	148	3,963
Leptospirosis	7	17	163	22	8	..	77	6	6	..	1	6	..	..	..	..	39
Meningococcal meningitis	2	2	3	8	2	1	1	1	4	..	..	1	7	..	..	..	362
Ophthalmia neonatorum	1	..	17	..	..	..	..	4	..	8	1	..	..	..	..	41
Peripneumonia neonatorum	1	..	..	..	..	..	..	..	..	..	..	..	..	2
Poliomyelitis	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2
Puerperal infections	1	1	4	..	..	..	..	..	..	..	..	..	..	..	..	7
Salmonella infections	84	57	31	20	24	18	7	8	..	18	19	15	71	15	42	..	512
Staphylococcal pneumonia and septicaemia in the newborn infant	3	..	1	..	..	..	..	..	..	..	..	4
Tetanus	1	..	..	..	..	..	..	..	..	..	..	6
Tuberculosis—
Pulmonary	29	32	100	55	47	53	28	17	11	23	23	31	47	20	58	10	35	27	646
Other forms	7	4	15	12	6	10	3	5	2	6	6	7	16	5	5	4	8	2	123
Undulant fever	2	1	31	..	20	3	1	1	6	3	2	..	..	2	1	..	1	..	78
Acute infective encephalitis	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Actinomycosis
Anchylostomiasis	14	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bilharzia	65	1	..	..	86
Leprosy	1	1	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
Listeriosis	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5
Malaria	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Ornithosis	1	5	..	..	..	1	1	1	..	..	2	..	6	1	1	..	18
Taeniasis	1
Trachoma	2	1	..	..	..	..	..	..	..	..	..	..	..	..	3
Lead poisoning
Dengue
Totals	259	385	679	576	933	666	156	201	229	162	136	351	312	209	695	251	163	189	6,552

TABLE 11c—Notifiable Diseases in New Zealand for the Year Ended 31 December 1970 Showing Distribution by Age and Sex (All Cases)

Diseases	Under 1 Year		1 and Under 5		5 and Under 10		10 and Under 15		15 and Under 25		25 and Under 45		45 and Under 65		65 and Over		Totals		Total
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Diphtheria ..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	2	..	2	2
Dysentery—	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Amoebic ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bacillary ..	13	15	57	58	42	46	11	15	9	29	28	1	8	..	3	164	200	364	1
Eclampsia ..	..	..	..	..	..	..	..	..	..	30	3	..	..	..	..	..	33	..	33
Enteric fever—	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Paratyphoid ..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Typhoid ..	..	..	..	..	2	1	1	2	16	50	3	33	..	..	1	10	11	21	1
Food poisoning ..	..	..	..	..	2	1	1	5	37	30	30	98	..	6	6	98	109	207	21
Hydatids ..	..	..	..	..	..	2	..	1	3	1	2	9	3	5	1	9	12	21	1
Infective hepatitis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Leptospirosis ..	2	..	79	51	490	505	346	287	440	353	485	176	3	121	37	2,129	1,834	3,963	3
Meningococcal meningitis ..	..	..	..	..	..	..	10	2	92	1	11	55	..	1	3	2,347	15	3,962	15
Meningococcal ..	7	3	7	6	4	1	2	1	3	1	2	..	..	2	..	25	14	39	2
Ophthalmia neonatorum ..	19	22	..	..	..	..	..	..	..	..	..	..	..	..	..	19	22	41	1
Pemphigus neonatorum ..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2	1
Polio myelitis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal infections ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Salmonella infections ..	..	..	..	..	..	..	..	..	..	5	2	..	..	..	..	..	..	..	..
Staphylococcal pneumonia and septicaemia in the newborn infant ..	34	19	66	67	37	43	22	19	36	34	43	18	..	16	7	264	248	512	7
Tetanus ..	1	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tuberculosis—	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3	4	6
Pulmonary ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other forms ..	2	3	11	14	18	16	16	15	33	38	121	138	64	23	400	246	646	4	
Undulant fever ..	1	..	1	5	3	5	1	2	8	7	22	14	12	4	66	57	123	1	
Acute infective encephalitis ..	..	..	..	..	1	2	3	1	10	1	38	15	..	..	69	9	78	..	
Actinomycosis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2	..	2
Anchyllostomiasis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bilharzia ..	..	..	..	..	..	..	3	3	41	4	1	..	..	..	78	8	86	..	86
Leprosy ..	..	..	..	..	..	..	..	..	..	3	..	1	..	..	2	1	5	..	5
Listeriosis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Malaria ..	..	..	..	..	..	..	..	..	..	3	1	..	..	..	2	1	1	..	1
Ornithosis ..	..	..	..	1	..	..	..	..	..	..	10	..	..	..	..	16	2	18	1
Tacniasis ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Trachoma ..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Lead poisoning ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dengue ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals ..	80	67	227	206	602	623	419	353	701	558	711	467	247	123	75	3,712	2,840	6,552	..

TABLE 11P—Notifiable Diseases in New Zealand for the Year Ended 31 December 1970 Showing Distribution by Age and Sex (All Cases)

TABLE 12—Results of Mass X-ray Examinations

Year	Number Examined	Number of Active Cases Found	Active Cases per 1,000 Examined
1966 ..	271,131	107	0.39
1967 ..	290,762	103	0.31
1968 ..	276,637	87	0.31
1969 ..	287,984	82	0.28
1970 ..	295,665	83	0.28

TABLE 13—Attendances at Industrial Health Centres and Waterfront Clinics

District	Centre	Attendances		Total
		First	Re-Attendance	
Takapuna ..	New Lynn ..	1,764	2,076	3,840
Auckland ..	Queen's Wharf ..	5,265	5,111	10,376
	Penrose ..	6,070	5,276	11,346
	Mount Wellington ..	1,909	1,234	3,143
	Rosebank Road ¹ ..	964	770	1,734
Rotorua ..	Wairakei ² ..	436	30	466
	Mount Maunganui ..	991	1,050	2,041
Lower Hutt ..	Petone ..	1,036	1,194	2,230
Wellington ..	Glasgow Wharf ..	3,678	1,445	5,123
Christchurch	Lyttelton ..	1,463	662	2,125
	Woolston ..	836	400	1,236
Dunedin ..	Foreshore ..	952	735	1,687
	Totals 1970 ..	25,364	19,983	45,347
	(Totals 1969) ..	(23,426)	(17,898)	(41,324)

¹Operating since February 1970.²Operating chiefly in connection with the Hearing Conservation Programme.

TABLE 14—Hairdressers Premises Evaluation 1970

Health District	No. Premises		Average Demerit		Percentage More Than 10 Demerits	
	Ladies	Men	Ladies	Men	Ladies	Men
Whangarei	44	22	17.6	14.2	73	64
Takapuna	100	40	22.5	20.6	81	82
Auckland	252	106	25.2	19.9	92	82
South Auckland ..	89	35	23.5	18.2	92	89
Hamilton	135	70	22.2	17.2	90	77
Rotorua	76	45	10.9	10.6	47	47
Gisborne	28	17	26.4	17.4	100	70
Napier	65	38	25.0	19.0	97	84
New Plymouth ..	57	27	15.2	17.5	75	67
Wanganui	52	31	17.5	17.2	96	94
Palmerston North ..	95	45	16.1	15.4	81	69
Hutt	96	48	12.4	10.0	57	33
Wellington	81	52	9.0	8.4	41	42
Nelson	52	41	20.6	17.0	94	81
Christchurch	107	48	18.0	14.1	79	69
Timaru	60	28	19.8	15.3	82	82
Dunedin	101	51	12.8	11.1	65	49
Invercargill	64	32	16.1	11.9	69	53
New Zealand Total ..	1,554	776	19.0	15.3	80	68

TABLE 15—Tuberculin Testing and BCG Vaccination Programme in Post Primary Schools 1970

District	Number Tested	Number BCG Vaccinated	Number Heaf* Positive	Percentage Positive	Number Found to Have Clinical Tuberculosis
Whangarei	2,067	1,906	13	0.63	..
Takapuna	3,137	2,924	13	0.42	..
Auckland	4,377	3,890	48	1.10	1
South Auckland ..	3,275	2,991	31	0.95	..
Hamilton	4,310	4,072	49	1.14	..
Rotorua	3,311	3,192	43	1.30	3
Gisborne	1,208	1,173	6	0.50	1
Napier	2,149	2,076	13	0.61	..
New Plymouth ..	1,859	1,844	3	0.17	..
Wanganui	1,756	1,742	2	0.12	..
Palmerston North ..	2,605	2,435	17	0.66	..
Hutt	3,076	2,953	8	0.26	..
Wellington	2,605	2,334	33	1.27	1
Nelson	1,887	..	4	0.22	..
Christchurch	5,057	..	3	0.06	..
Timaru	2,006	..	5	0.25	..
Dunedin	2,446	..	7	0.29	..
Invercargill	1,959	..	3	0.16	..
Totals	49,090	33,532	301	0.62	6

*Heaf positive represents +++ and ++++ reactors.

TABLE 16—Morbidity: Notification of New Cases of Tuberculosis During Statistical Year—Incidence of Type of Disease by Race and Sex With Number and Rate per 10,000 Estimated Mean Population

Year	Respiratory						Non-respiratory						Mixed						All Types		
	Maori			Non Maori			Maori			Non Maori			Maori			Non Maori			Both Races		
	M		T	M		T	M		T	M		T	M		T	M		T	M		T
	F	T		F	T		F	T		F	T		F	T		F	T		F	T	
1966 ..	160 15.3	161 15.9	321 15.6	372 3.0	225 1.8	597 2.4	35 3.3	46 4.5	81 3.9	42 0.3	54 0.4	96 0.4	7 0.7	9 0.9	16 0.8	10 0.08	7 0.06	17 0.07	626 4.6	502 3.7	1,128 4.2
1967 ..	184 17.1	177 16.8	361 16.9	362 2.6	167 1.2	529 1.9	33 3.1	37 3.5	70 3.3	39 0.3	56 0.4	95 0.3	8 0.7	8 0.8	16 0.8	8 0.07	3 0.05	11 0.04	634 4.7	448 3.3	1,082 4.0
1968 ..	118 10.8	130 12.2	248 11.5	311 2.4	166 1.3	477 1.9	25 2.3	28 2.6	53 2.5	35 0.3	39 0.3	74 0.3	16 1.5	17 1.6	33 1.5	14 0.1	13 0.1	27 0.1	519 3.8	393 2.9	912 3.3
1969 ..	135 12.0	93 8.5	228 10.3	274 2.1	160 1.2	434 1.7	29 2.6	31 2.8	60 2.7	36 0.3	42 0.3	78 0.3	10 0.9	14 1.3	24 1.1	27 0.2	9 0.1	36 0.1	511 3.6	349 2.5	860 3.1
1970 ..	96 8.2	80 7.0	176 7.6	287 2.2	138 1.1	425 1.6	19 1.6	18 1.6	37 1.6	32 0.2	40 0.3	72 0.3	14 1.2	17 1.5	31 1.3	20 0.2	8 0.1	28 0.1	463 3.3	301 2.1	769 2.7

TABLE 17—Notification of Number of Persons Reporting for the First Time to Venereal Disease Clinics Run by Hospital Boards

Year	Auckland		Napier		Wellington		Christchurch		Dunedin		Invercargill		Totals		Grand Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhoea—Number of persons reporting to clinics and found to be suffering from gonorrhoea.															
1966	994	229	..	..	323	163	352	200	78	24	..	..	1,747	616	2,363
1967	916	203	..	..	363	240	306	147	87	43	23	6	1,695	639	2,334
1968	668	201	..	..	351	317	291	152	61	29	36	19	1,407	718	2,125
1969	520	173	35*	24*	421	367	320	140	79	53	27	28	1,402	785	2,187
1970	604	201	65	59	341	409	284	167	47	37	36	30	1,377	903	2,280
Syphilis—Number of persons reporting to clinics and found to be suffering from syphilis.															
1966	111	10	..	..	3	8	9	2	4	..	..	..	127	20	147
1967	126	4	..	..	4	5	4	1	..	..	2	..	136	10	146
1968	69	7	..	..	7	6	11	3	..	1	2	..	91	17	108
1969	29	4	..	..	11	7	10	1	3	..	2	1	55	13	68
1970	29	10	..	1	17	9	6	2	1	..	..	..	53	22	75
Non-specific urethritis															
1968	562	..	..	..	69	..	315	..	73	..	29	..	1,048	..	1,048
1969	650	..	14*	..	91	..	288	..	85	..	14	..	1,142	..	1,142
1970	742	..	39	..	122	..	458	..	111	..	24	..	1,496	..	1,496

*For 9 months

TABLE 18—Notification of Diseases Arising from Occupation

	Male	Female	Total
1. Skin Diseases due to—			
Mineral oils	20	2	22
Grease	11	..	11
Organic solvents	11	3	14
Cement	12	..	12
Chrome	7	..	7
Resins and chemicals used in manufacture of plastics	17	3	20
Hairdressing chemicals	1	2	3
Photographic chemicals	2	..	2
Other chemicals	44	17	61
Natural products—wool, tobacco, etc.	36	26	62
Physical causes	27	11	38
Other causes	42	9	51
Sub-total	230	73	303
2. Diseases due to dusts, fumes, gases, vapours, or mist—			
Lead poisoning	2	..	2
Mercury poisoning .. .. .	..	..	..
Metal fume fever	2	..	2
Organochlorine insecticide poisoning	1	..	1
Organophosphorous insecticide poisoning	8	1	9
Poisoning by other agricultural chemicals	6	2	8
Poisoning by fumigants	1	..	1
Poisoning by refrigerants	3	..	3
Poisoning by other lung irritants	3	..	3
Poisoning by other gases	10	1	11
Poisoning by organic solvents	12	1	13
Any other respiratory disease	6	2	8
Any other condition (other than respiratory disease) caused by the above agents	2	1	3
Sub-total	56	8	64
3. Diseases due to physical agents—			
Compressed air illness	2	..	2
Eye conditions not due to accident .. .. .	..	..	..
Hearing loss	1	..	1
Other conditions	16	..	16
Sub-total	19	..	19
4. Permanent damage to vision due to accident—			
Sub-total	10	..	10
5. Diseases due to infectious agents—			
Leptospirosis	321	12	333
Undulant fever (Brucellosis)	69	8	77
Other	1	..	1
Sub-total	391	20	412
Total all causes	706	101	808
(Total all causes 1969)	(723)	(112)	(835)
Source of notifications—			
Medical practitioners .. .. .	..	542	(66.9)
Medical Officers of Health .. .. .	..	31	(3.8)
Department of Labour .. .. .	..	147	(18.2)
Other sources (employers, unions, etc.) .. .. .	..	89	(11.1)
Total notifications .. .. .	..	809	(100.0)

TABLE 19—Supervision of Workers Engaged in Lead and Electroplating Processes

District	Lead Processes				Electroplating Processes								Number of Men Otherwise Affected	
	Number of Firms	Number of Workers Under Supervision	Number of Examinations	Number of Workers Suspended	Number of Firms Engaged in		Number of Workers Under Supervision		Number of Examinations		Number of Men With Chrome Ulcers			
					Chrome-plating	Other Plating Only	Chrome	Other	Chrome	Other	On Hands	On Nasal Septum		Other Part of Body
Whangarei ..	7	5	6	..	1	3	..	19	..	..	..	..	..	..
Takapuna ..	90	51	52	..	7	58	..	132	..	..	..	..	..	..
Auckland ..	10	115	329	..	27	70	65	678	95	..	..	..	..	6
South Auckland ..	8	79	343	..	7	40	..	69	..	..	..	..	..	..
Hamilton ..	14	202	257	..	5	21	..	25	..	..	..	..	..	..
Rotorua ..	14	109	156	..	2	7	..	44	..	..	..	..	..	..
Gisborne ..	5	68	68	..	1	3	..	9	..	..	..	..	..	..
Napier ..	8	4	1	..	2	6	..	24	..	..	..	..	..	..
New Plymouth ..	..	..	..	..	1	4	..	24	..	..	..	..	..	..
Wanganui ..	5	16	53	2	1	2	3	4	..	..	..	..	..	1
Palmerston North ..	6	71	71	..	3	4	..	8	..	..	..	..	..	..
Wellington ..	24	164	415	..	6	28	5	106	8	..	..	..	..	..
Lower Hutt ..	19	381	1,800	23	7	11	5	81	6	..	..	..	..	..
Nelson ..	8	..	..	..	3	6	..	51	..	..	..	..	..	..
Christchurch ..	62	381	379	22	11	64	12	225	24	3	..	..	..	..
Timaru ..	9	16	23	..	1	3	..	5	..	..	..	..	..	..
Dunedin ..	18	48	111	..	4	21	..	291	..	..	..	..	..	..
Invercargill ..	3	54	54	..	1	2	7	2	..	..	..	..	..	..
Totals	310	1,764	4,618	47	90	353	97	1,797	146	7	1	..	7	7
(Totals 1969)	(276)	(1,609)	(4,657)	(46)	(117)	(337)	(98)	(2,423)	(240)	(9)	(5)	(1)	(16)	(16)

TABLE 20—Medical and Nursing Services in Private Industrial Undertakings and Government Factories

Terms of Employment	Number of Doctors and Nurses Employed	Approximate Number of Employees in Industrial Units Covered						Totals	
		0-200		201-500		501-1,000		More than 1,000	
		Number	Employees	Number	Employees	Number	Employees	Number	Employees
1. Industrial medical officers—									
(a) Medical officers on contracts attracting up to 60 per cent subsidy ..	56	16	1,926	27	9,288	24	17,277	14	24,589
(b) Medical officers on other contracts ..	2	..	..	1	320	1	950	..	..
All medical officers ..	58	16	1,926	28	9,608	25	18,227	14	24,589
2. Industrial nurses—									
(a) Full-time ..	96	8	1,118	35	12,384	30	21,580	15	31,760
(b) Part-time (more than 10 hours weekly) ..	13	2	249	4	1,104	4	3,100	3	6,450
All nurses ..	109	10	1,367	39	13,488	34	24,680	18	38,210
Registered factories 1970 ..		20,908		116		63		21,087	
								315,961	

TABLE 21—Milk Sampling Summary for Year Ended 31 December 1970; Tests Applied and Results
N/C=Non-Complying

Districts	Total Samples		Details of Non-complying Samples					Warnings	Prosecutions
	Tested	N/C	Fat	Solids Not Fat	Water	Reductase	Coliform		
Whangarei ..	72	13	2	9	..	..	2	..	..
Takapuna ..	100	38	2	31	..	..	8	..	..
Auckland ..	213	88	5	64	..	..	23	..	..
South Auckland	89	31	2	26	..	..	3	..	..
Hamilton ..	168	27	4	20	..	..	3	..	..
Rotorua ..	77	22	1	14	..	..	5	..	..
Gisborne ..	147	21	2	..	..	..	19	..	..
Napier ..	16	1	..	..	..	..	1	..	..
New Plymouth	440	62	..	..	..	..	62	..	..
Palmerston North	48	..	..	..	..	..	..	..	..
Wanganui ..	38	2	..	..	..	..	2	..	..
Lower Hutt ..	9	..	..	..	..	..	..	..	..
Wellington ..	163	27	..	..	..	27	..	..	..
Nelson ..	100	30	2	25	..	..	2	..	..
Christchurch	89	32	..	25	..	..	7	..	..
Timaru ..	133	62	1	55	..	1	9	..	..
Dunedin ..	776	183	5	6	..	..	168	..	..
Invercargill ..	45	17	1	10	1	..	4	165	..
Totals ..	2,723	656	26	285	3	27	318	289	..

TABLE 22—Food and Drug Sampling 1970

—	Total Samples	Samples Non- complying	Warnings Issued	Prosecutions Recom- mended
Milk	2,723	656	289	..
Sausages	1,162	62	39	29
Minced meat	1,161	93	34	67
Fresh meat	292	11	2	7
Other meat	523	11	2	3
Fish	44	..	..	..
Cream	1,061	236	21	..
Milk beverages	361	151	98	1
Butter	29	1	1	..
Cheese	62	2	..	..
Yoghurt	112	10	..	..
Tea, coffee, cocoa	1	..	..	..
Salts and spices	29	..	..	..
Sauces, vinegar, pickles	14	1	..	..
Ice cream	615	246	134	..
Fruit, vegetables and products	85	1	..	..
Jams and preserves	8	..	..	..
Beverages (non-alcoholic)	131	7	2	..
Beverages (alcoholic)	145	1	..	..
Drugs and proprietary drugs	23	..	..	..
Fats and oils	43	..	..	..
Containers	736	46	6	..
Miscellaneous	64	2	2	..
Total	9,424	1,537	630	107
Seizures and destruction	51			
Food complaints investigated	1,481			
Prosecutions resulting	46			
Shop screening tests (meat)	443	94	36	

TABLE 23—Subsidies: Housing and Accommodation for the Aged

—	Pensioner Housing (Local Authority and Religious and Welfare)	Homes and Hospitals (Reli- gious and Welfare)	Total
	\$	\$	\$
Subsidy outstanding at 1 April 1970	1,329,768	1,904,471	3,234,239
Estimated subsidy expenditure, 1970-71	1,500,000	1,500,000	3,000,000
Actual expenditure	983,913	1,213,767	2,197,680
Subsidy outstanding—Works in progress and new approvals as at 31 March 1971	629,910	1,235,267	1,865,177

APPENDIX II

REVIEW OF DENTAL PUBLIC HEALTH IN NEW ZEALAND

Fiftieth Anniversary School Dental Service 1921-71

Dental public health is the branch of dentistry concerned with the prevention and control of dental disease, and the promotion of dental welfare in the community as a whole. It encompasses prevention, education, administration, treatment, and research, and includes elements of political, professional, and community leadership.

The Dental Division of the Department of Health is involved in all these activities, and plays an active and co-ordinating role in nearly all phases of dentistry in New Zealand today.

The Dental Health Problems

Dental disease falls into two main categories—dental caries, or decay of the teeth, and diseases of the gums and other oral tissues. In addition, numerous injuries and abnormalities of teeth and jaws occur, and irregularity of the teeth, or malocclusion, constitutes a major problem in children.

The teeth of the original Maoris were excellent yet, for reasons unknown, the incidence of dental caries in all sections of the community since the arrival of Europeans has been relatively high in this country. This, in fact, accounts largely for the early introduction of the School Dental Service, which has now achieved world-wide renown and has contributed to New Zealand's reputation for social reforms. Early loss of teeth, and their replacement with artificial dentures, was once the common experience of the young New Zealand adult. As late as the 1930s the edentulous face was almost a national characteristic and the subject of comment by overseas visitors. The position has improved markedly over the last few decades and an even longer retention of natural teeth than obtains at present can be expected in the future.

Dentistry in New Zealand

The history of dentistry as a self-governing profession is relatively short, although in New Zealand its development has been commendably fast. The first Dentists Act, to regulate the standards of the profession and provide a safeguard for the public, was passed in 1904, while in 1905 the New Zealand Dental Association was formed to promote the advancement of scientific knowledge and to encourage the observance of a suitable code of ethics. In 1907 the University of Otago Dental School was established and this has since acquired an international reputation. In 1909, to meet the dental needs of the indigent, a dental department was created in the Auckland Hospital and more extensive plans were adopted for hospital dental services in 1915.

In the period following World War I, and particularly during the economic depression of the 30s, dentistry experienced a threat to professional standards in the form of unethical advertising. This was eliminated eventually by the passing of the Dentists Act 1936, which strictly limited advertising, prohibited the formation of commercially organised dental companies and provided for a Dental Council to govern the affairs of dentistry. This was an important step forward and represented an appreciable advance on the situation in many other countries.

There is a shortage of dental manpower throughout the world. Even well developed countries face this problem. New Zealand is relatively well supplied, with a dentist to population ratio of 1 to approximately 2,300, excluding children enrolled at school dental clinics. At the current level of demand for dental treatment, the needs of the public are being met. Should the demand increase, a shortage in the supply of dental services could arise. The annual output of dental graduates from the University of Otago Dental School has averaged 41 over the past 20 years. This figure could be increased to 60 per year with the facilities at present available provided there were sufficient recruits to the profession. Of recent years applications for enrolment have not reached the desired number and with the projected increase in medical students as from 1972, greater difficulty in recruiting dental students can be expected.

The present dental school building was erected and equipped in 1961 and provides modern facilities for 240 full-time students. The university grants the degrees of Bachelor of Dental Surgery, Master of Dental Surgery, Doctor of Dental Science and, since 1964, also a Diploma of Dental Public Health.

The School Dental Service

The low dental standard of military recruits for World War I and the poor condition of the teeth of school children both pointed very clearly to the urgent need for regular dental treatment in the public interest. Priority for children was agreed upon as being most logical and the first plan for a school dental service was adopted in 1919 when six dental officers were attached to the medical staff of the Education Department. One was appointed chief dental officer and the other five were stationed at Helensville, Auckland, Wellington, Nelson, and Dunedin. It soon became evident that the development of an adequate staff of dental officers would be a very slow process and so the idea of training young women as school dental nurses was conceived. In 1920, under the Health Act, a Division of Dental Hygiene (amended in 1960 to Dental Health) was established and the present School Dental Service was inaugurated in 1921. This service celebrated its Golden Jubilee during the current year. The idea of training specially selected young women to undertake the routine dental treatment of children was entirely new and unorthodox and was initially regarded with misgivings by some members of the profession and the public. However, as a result of their personal conduct and the high standard of the treatment they gave, school dental nurses were soon recognised as the providers of a valuable service. During the depression of the 1930s the training programme was slowed down. From 1931 to 1935 the annual intake of students was reduced from 40 to an average of 20, with no intake in 1931. In 1935, however, the Government decided to expand the service and make it a permanent part of the public health programme. Training was immediately increased but World War II and post-war difficulties created additional staff shortages which necessitated still further acceleration of training. This has been steadily maintained since 1951 and has now reached a relatively stable level commensurate with staffing needs. Since it acknowledges the importance of early dental examination and treatment, the policy of the School Dental Service has been to provide also for the care of pre-school children.

From the modest beginning of 29 dental nurses and 23 improvised clinics, the New Zealand School Dental Service has grown into a nation-wide organisation. At 31 March 1971, 1,354 nurses were employed in 1,324 school dental clinics where they treated 590,855 children in the preceding 12 months. To maintain the field staff at this level, 3 Schools for Dental Nurses—at Auckland, Wellington, and Christchurch—are constantly in operation, providing a 2-year course of training for a total student roll of 400.

Dental Clinic Buildings

Dental clinics are built by education boards either in the school itself or in the school grounds and are also maintained by the boards. In the past 20 years, 37 new clinics on average have been built annually.

From 1921 to 1927 a body known as the Dental Clinic Committee, composed of representatives from participating schools, was required to raise all the money needed to provide the clinic accommodation. This generally consisted of make-shift quarters in a variety of buildings. By today's standards the accommodation was often primitive. In 1927 a building subsidy of £2 for £1 was granted by the Government, the building being constructed to a set plan by education boards and located in the school grounds. The Dental Clinic Committee was thus still obliged to find one-third of the cost of the building and this amount was raised by various forms of community effort. In 1945 the Government assumed full financial responsibility for the building of dental clinics and the department was able to provide services according to need rather than the degree of local interest. Building plans have been modernised from time to time but the basic design of dental clinics has remained much the same.

Dental Clinic Finance

As for the daily running costs of clinics, from 1921 to 1941 dental clinic committees were required to impose a levy of 5/- per patient to meet the costs of such items as power, lighting, laundry, cleaning, etc. In 1941 a Government grant of £30 was made available to all dental clinic committees to help meet

these costs. In the case of clinics accommodating more than one nurse, the amount was increased proportionately. In 1942 the Government assumed full financial responsibility for all expenses connected with the running of dental clinics and, as previously stated, in 1945 for all capital expenses also.

With the growth of the service more and more schools acquired their own dental clinics and in consequence school committees have gradually undertaken the functions of dental clinic committees. Since 1963 this has become accepted policy and been encouraged on a national scale. Finance provided by the Department of Health to school committees is disbursed by education boards.

Organisation and Administration

The aim of the School Dental Service is to preserve good dental health and thus obviate the need for extensive rehabilitation of broken-down mouths. In practice this involves regular examination and treatment at 6-monthly intervals, combined with individual and group instruction in oral hygiene and other preventive measures.

Children, once enrolled, are regarded as a continuing responsibility. Their dental care is maintained year by year until they eventually leave Form II, the highest class treated by the School Dental Service. They then become eligible for further regular care from private dentists under the social security dental benefit scheme. School dental nurses are trained, and subsequently supervised, by dentists who are all full-time employees of the department. Children requiring treatment beyond the scope of the dental nurses are referred to their own private dental practitioners. Since 1946 the cost of this latter treatment (apart from specialist treatment) has been met as a charge on the social security fund.

Dental Health Education

An active programme of dental health education has been conducted since the inception of the service and every school dental nurse is expected to devote part of her time to this important aspect of her work. This takes the form of individual instruction at the chairside, group instruction in the classroom, and adult education by way of addresses to parent and teacher organisations and other adult groups. New ideas and new teaching aids are constantly being developed and their use promoted by staff specially appointed for the purpose. All these activities are directed from the head office of the Division of Dental Health in co-ordination with the health education policy of the Department of Health as a whole. Results of dental health education are difficult to assess in statistical form but they are evident in the subsequent evaluation of the work of the School Dental Service.

Fluoridation

Fluoridation has proved to be of considerable assistance. In 1954 the first small city fluoridated its water and others have gradually followed. Today almost 60 percent of the 2.3 million people on a reticulated water supply use water that has been fluoridated. Where the measure has been in operation for a number of years the incidence of dental caries has been reduced and the effect of this in terms of reduced treatment requirement has been most marked.

Prior to fluoridation, the school dental nurse could, on the average provide regular 6-monthly care for groups of 450 children. Since fluoridation the number has increased and in some instances, where the full benefit is being felt, has exceeded 700, while the average number of fillings per child inserted annually has fallen from 5.1 to 3. In the case of older children attending private dental practitioners under the social security dental benefits scheme, the improvement has been reflected in lower costs. Claims for treatment from dentists practising in fluoridated areas are, on the average, half the national mean. As time has elapsed, and more cities have fluoridated their water supply, forecasts have been upset and plans for the development of the School Dental Service have had to be reviewed. Fewer dental nurses than anticipated will be needed and already training has been curtailed.

Although the New Zealand dental care programme cannot claim direct credit for the results of fluoridation, it has in many ways had a favourable influence on public attitudes and hastened the adoption of fluoridation. With the combined advantages of this effective public health measure and well-developed treatment services, the outlook for the youth of New Zealand is as promising as can be expected until dental disease can be totally prevented.

Effect of Dental Care

To gain some idea of the results achieved by the New Zealand School Dental Service it is necessary to go back to the early 1920s for baseline data. At that time the condition of children's teeth was deplorable. Toothache and oral sepsis were the order of the day, and the extent to which general health was affected can well be imagined.

Early in 1923 the first group of 29 school dental nurses completed their training and were stationed throughout New Zealand. In the first year of operation, 23,750 fillings and 18,674 extractions were recorded, a ratio of 78.6 extractions for every 100 fillings. By 1933 the picture had already changed. There were then 166 dental nurses in the field. In that year they inserted 397,437 fillings and extracted 69,208 teeth for 78,391 children. This lowered the ratio of extractions from 78.6 to 17.4 for every 100 fillings, or 88.2 extractions per 100 children.

In 1970-71, 2,583,102 fillings were inserted and 62,311 unsavable teeth extracted for 590,885 children. If 6,994 teeth extracted by contracting dentists are included in these figures this represents a ratio of 2.7 extractions for every 100 fillings or 11.7 for every 100 children.

NUMBER OF CHILDRENS TEETH EXTRACTED

PER 100 PATIENTS TREATED IN THE SCHOOL DENTAL SERVICE

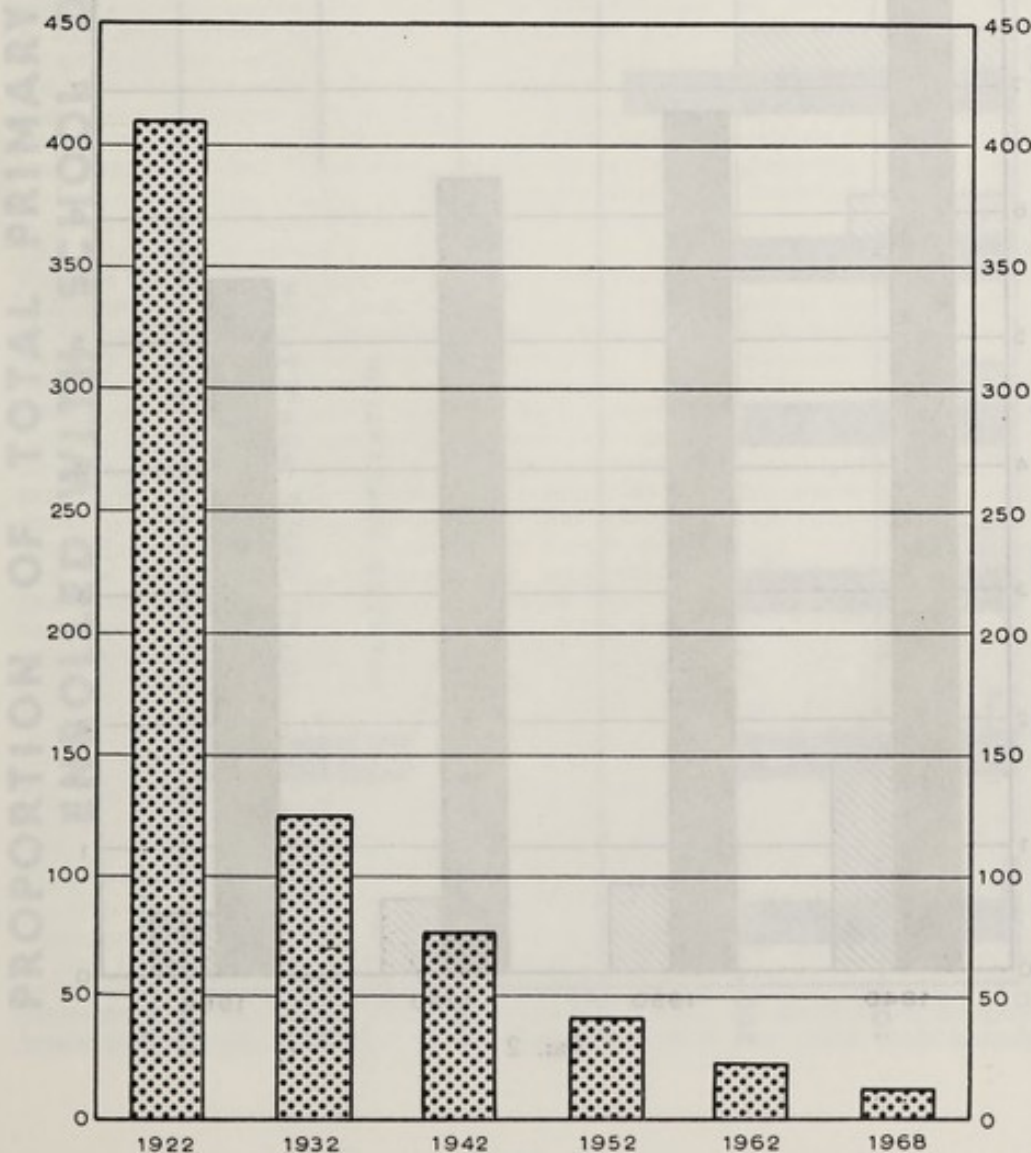


FIG. 1

On the basis of reduced tooth mortality, the New Zealand system has been most successful. For the first 10 years the reduction was dramatic. As would be expected it has been more gradual since, and may not fall much lower. A reduction from 88.2 to 11.7 extractions per 100 children in 38 years is a clear indication of the value of the service. So few permanent teeth now need extracting that the three Schools for Dental Nurses no longer teach this subject. If a permanent tooth has to be extracted, the nurse refers the child to a dentist.

NUMBER OF CARIOUS AND UNSAVABLE TEETH PER CHILD

FIVE-YEAR OLD CHILDREN PRESENTING FOR INITIAL DENTAL EXAMINATION AT SCHOOL DENTAL CLINICS

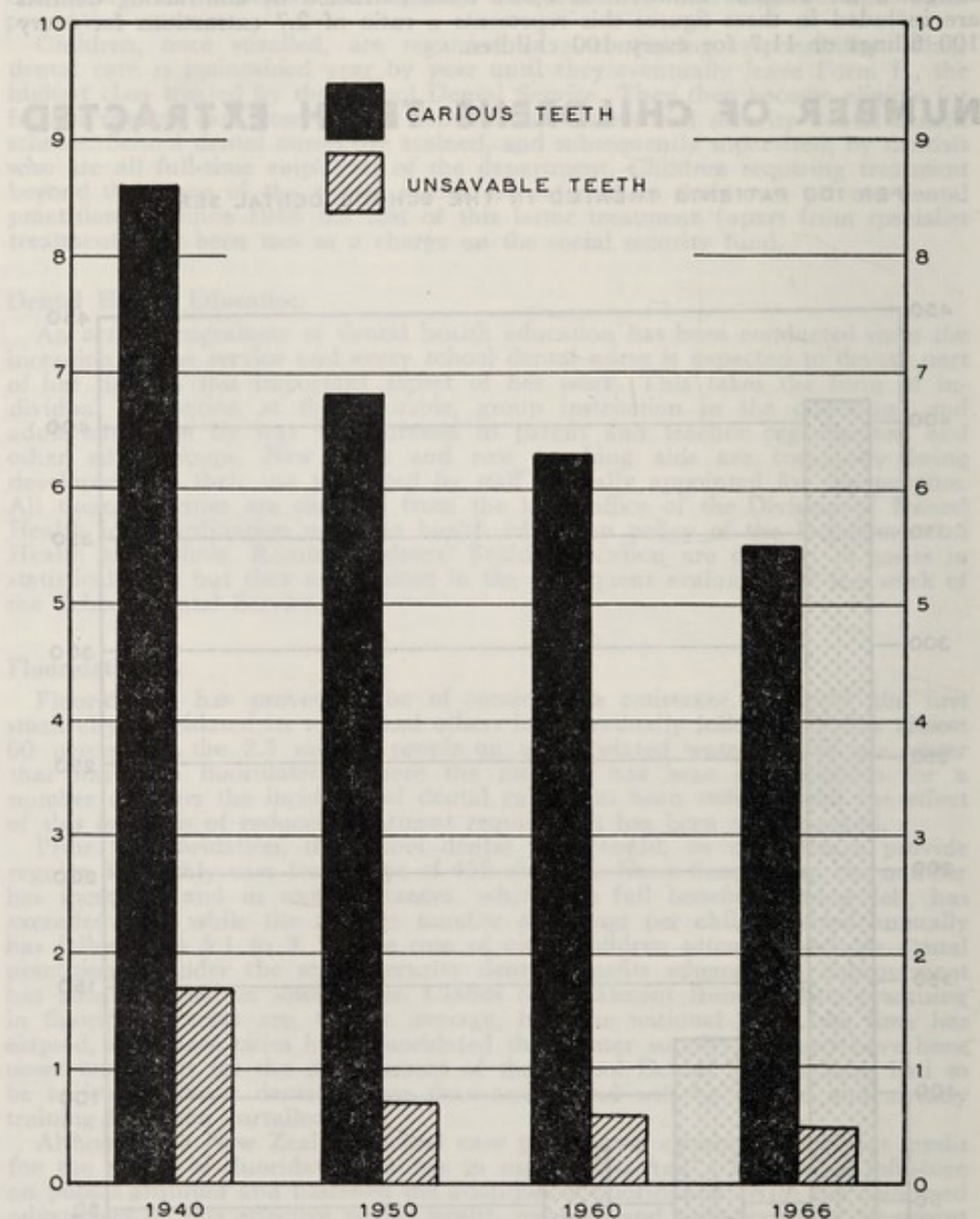


FIG. 2

The New Zealand scheme might appear as only a repair service. Certainly statistics showing a high output of treatment are a constant reminder of the need for greater preventive effort. This has not been forgotten, but even half a century in the life of society is not long enough to alter established habits and attitudes. Nevertheless, the School Dental Service can claim some success in this direction. Since the inception of the service the enrolment of pre-school children has been encouraged. For the past 25 years the importance of early care has been given particular stress, with the result that the number of pre-school children under regular supervision has steadily increased. In 1949 only 19 percent of all children in New Zealand between the ages of 2½ and 5 were enrolled at school dental clinics. The figure is now 60 percent. As these children are relatively inaccessible, it speaks well for the interest the school dental nurse has created among parents in dental health. Viewed from another angle, improvement has occurred in the dentition of these children. In 1950 the mean numbers of decayed, extracted, or filled deciduous teeth at ages 2, 3, 4, and 5 respectively were 1.76, 4.19, 6.41, and 7.45. In 1966, at the last quinquennial survey, the d.e.f.s were 0.77, 2.35, 4.21, and 5.17. And at this date the national effect of fluoridation of public water supplies was limited. Expressed in another way, 13.5 percent of children commencing school (at 5 years of age) in 1950 were caries-free. In 1966 the figure had risen to 28 percent.

So much for evaluation based on statistics. What of the results in terms of human experience? Without any reflection on past professional standards, the more senior citizens of this country will admit that their own early recollections of dental treatment were not always happy ones. The situation is now entirely different. More than half the children who commence school each year are already seasoned attenders at the local dental clinic. They have no fear of the dental nurse and would barely understand any suggestion that they should have. Not that all dental experiences are pleasant. Some are not. Yet in spite of occasional discomfort, the vast majority of children are quite resigned to their periodic visits to the clinic. They have learned to accept the dental nurse. She is almost as much a member of the school staff as their teachers and the dental clinic is as familiar to them as the classroom. Under such circumstances it is not surprising that fear arising from anxiety and imagination is something now quite foreign to school children in New Zealand. Treatment beyond the scope of the dental nurse is provided by the private dental practitioners and they, too, find that the children attend them without concern.

Contribution to Overseas

Commencing with Malaysia in 1949, many other countries have now adopted the New Zealand system or have modified it to meet their own requirements. Under the aegis of WHO, Colombo Plan and Special Commonwealth Aid to Africa Plan, 21 countries in all have been assisted, namely Ceylon, Malaysia including Sarawak and Sabah, Singapore, Brunei, Thailand, Indonesia, Hong Kong, Ghana, Sierra Leone, Papua - New Guinea, Tasmania, South Australia, South Vietnam, Taiwan, Korea, Trinidad-Tobago, Jamaica, Chile, Venezuela, and Tonga. Altogether 45 dentists from these countries have been given the opportunity to study the New Zealand system at first hand, 68 school dental nurses from overseas have received their training here; an additional 15 have been given advanced training; another 3 are at present undergoing a course and others are expected. At the same time, assistance has been extended by way of secondment of New Zealand staff. Since 1952, 32 senior New Zealand school dental nurses, dental tutor sisters, and dental nurse inspectors have served, or are still serving, overseas, and several senior officers of the Dental Division have been engaged as consultants. Altogether, an enormous amount of time and effort has been devoted to the affairs of other countries in recent years and a great deal of information and documentary material has been provided. The idea, which originated in this country more than 50 years ago, of using dental auxiliaries to supplement the dental profession, has now spread throughout the world. The United Kingdom has adopted it in a modified form and it is receiving considerable attention in the United States, Canada, South America, and many other places. In this particular field of public health the contribution of the New Zealand Department of Health has been outstanding.

Social Security Dental Benefits Scheme

Children cease to remain under the care of the School Dental Service after leaving school at Form II. Until 1946, many of these school leavers subsequently neglected their teeth and frequently much of the treatment they had received

from the dental nurse was eventually wasted. This became particularly apparent during recruitment for World War II, with the result that immediately after the war the dental benefit scheme was introduced under the Social Security (Dental Benefits) Regulations 1946 to maintain the work of the School Dental Service and control the dental health of adolescents during a very susceptible period of their lives.

When the scheme was initiated it was envisaged that treatment would be provided by dental officers employed by Government on a full-time basis and working in departmental clinics established for the purpose. To overcome the shortage of dentists, Health Department bursaries were awarded to enable young men and women to undertake the university course of study. A condition of the award was that on graduating a bursar would spend 3 years or less, depending on the term for which the bursary had been held, in a State service as directed by the Department of Health. In this way it was hoped to build up a dental service to care for all adolescents up to the sixteenth birthday in the first instance, with provision for extension to 19 years of age on the authority of the Minister. As at least 5 years are required to educate a dentist, pending the development of this service the New Zealand Dental Association agreed to assist in operating an "interim" scheme in which dentists would contract with the Minister of Health to treat adolescents in the dentists' own practices on a fee-for-service basis, the fee to be the subject of negotiation between the Minister and the contractor. For a variety of reasons the "salaried" service failed to develop and has been phased out. On the other hand, the "interim" service proved both effective and acceptable to the New Zealand Dental Association and has been retained.

During the year ended 31 March 1971, 154,591 adolescents were enrolled for dental benefits, and, in addition, 15,359 children attending school dental clinics were referred to dentists under the same scheme, for treatment which was beyond the scope of the dental nurse.

The range of treatment provided under the Social Security (Dental Benefits) Regulations is mainly conservative and includes almost all treatment normally rendered by the dentist in private practice with the exception of orthodontics and other specialist treatment. The standard of treatment is similar to that provided for private patients. A system of quality control is operated by the Department of Health in co-operation with the New Zealand Dental Association, and on all matters relating to the provision of treatment the Minister of Health is guided by the Dental Benefits Central Advisory Committee which represents the views of the dental profession. Almost all dentists in general practice participate in the dental benefits scheme although only principals are required to hold contracts.

The effects of the dental benefits scheme have been considerable. Since the scheme began there has been a high level of acceptance. In the past year the percentage of adolescents who were enrolled in the age groups 13, 14, and 15 years were 62 percent, 86 percent, 88 percent, respectively, and it has been found that after treatment has ceased 67 percent of young men and 77 percent of young women continue to attend their dentists at their own expense. Moreover, since 1952 the percentage of young men who are wearing or needing artificial dentures has fallen from 29 percent to 8 percent.

Dental Research

By 1961 the public dental health services had reached a stage of development when operational research had become essential in order to evaluate the various aspects of the programmes and assess the effectiveness of techniques and materials. A principal dental officer (research) was accordingly appointed to undertake these specialised duties. Basic research, however, is not regarded as a function of this officer.

In 1937 the Dental Committee of the Medical Research Council was established and the Division of Dental Health is represented on this body by the Director. In addition, since the inception of the Dental Committee of the Medical Research Council, accommodation has been provided by the division for the Director and staff of the council's Dental Research Unit. The unit has produced very useful results and continues to do so.

The Division of Dental Health is also represented by the Director on the Board of the Dental Research Foundation of the New Zealand Dental Association which makes funds available for research projects, study awards, and scholarships, etc.

DENTAL LEGISLATION

Dentists and Dental Practice

Legislation relating to dentistry in New Zealand originated with the passing of the Dentists Act in 1880, providing for the registration of dentists qualified to practice in this country. This Act was twice amended, in 1881 and 1891, and eventually replaced by the Dentists Act 1904 which also provided for the registration of dentists and the regulation of dental practice. In 1908 a consolidating Act was passed and this remained in force until 1936. Amending Acts were passed in 1910, 1911, 1921-22, and 1926. The Dentists Act 1936 was a milestone in the history of New Zealand dentistry because it gave dentists, for the first time, the means to govern their own affairs. The Act provided for a Dental Council, with the necessary powers and responsibilities, to establish and maintain in the public interest adequate standards of qualification for registration and of dental practice. It remained in force for 27 years until replaced by the Dental Act 1963 which modified the Dental Council to meet changed circumstances, updated the provisions relating to qualifications and registration, and provided for improved disciplinary machinery. New Dental Regulations were enacted in 1964 and again in 1969, while the Dentists' Advertising Regulations 1938 were revised in 1964 and again revised and enacted in 1970. Under existing legislation, the Dental Council relies upon the Department of Health for its administrative requirements. A Dental Amendment Bill is in the course of preparation to enable the council to function as a corporate body and eventually assume full independence.

Encouragingly, little need has arisen for the Dental Council to exercise its disciplinary powers. On the other hand the department, being responsible for the administration of the Act, has frequently been required to institute court proceedings against dental technicians who, not being registered dentists, have engaged illegally in the practice of dentistry by supplying artificial dentures directly to the public. This is a problem which is world-wide but it could diminish in New Zealand as the recent legislation designed to improve the conditions of training and employment of dental technicians takes effect.

Dental Technicians

In 1962, at the request of the Minister, the Dental Health Committee of the Board of Health considered and reported on the "Employment of Dental Technicians in New Zealand".¹ Conditions in the dental technicians industry were found to be unsatisfactory and the committee recommended, in the interests of all concerned, that legislation be introduced to govern the industry and provide for registration and training. Following discussions between the dental technicians' representatives, the employer organisations and the department, a proposed Dental Technicians Bill was drafted. This was discarded later in favour of including dental technician as a registered occupation in the Medical and Dental Auxiliaries Bill. Subsequently, when the Medical and Dental Auxiliaries Act 1966 was passed, the Dental Technicians Regulations 1968 were made pursuant to this Act. A Dental Technicians Board provided for in the "umbrella" Act was established in 1969 and has met on several occasions. Registration of dental technicians and laboratory operators is almost complete and plans for the development of training programmes under the Technicians Training Act 1967, instead of the Apprentices Act as at present, are well advanced.

Public Dental Health Services

Legislation governing school dental nurses and the operation of the School Dental Service is conveniently brief but adequate. Provision for the Department of Health to organise and control dental services, so far as these services are paid for out of public money, is contained in section 7, paragraph (f) of the Health Act 1956. Section 125 of the Act gives the necessary permission for departmental officers to enter the public schools and kindergartens and examine children, and section 30 of the Dental Act 1963 makes provision for school dental nurses to perform dental work in the School Dental Service for children in accordance with conditions approved by the Minister. In addition, both dental officers and dental nurses are required to observe the State Services Regulations and are subject to all other relevant legislation pertaining to employees of Government.

Hospital Dental Services

As mentioned earlier in this review, a dental department was established in the Auckland Hospital in 1909 to meet the dental needs of the indigent. The services initially were supplied by private dental practitioners working on a roster basis. This system was later discontinued and full-time staff employed. The emphasis remained on the care of the indigent, particularly as outpatients. Dental departments were subsequently established at Wellington, Lower Hutt, Christchurch, Timaru, and Dunedin, and in the course of time the services became to a greater or lesser extent more readily available to the public than was originally intended. Other hospital boards throughout New Zealand were also operating a variety of systems for supplying dental services for inpatients as an essential element of the hospital treatment, and for needy cases as outpatients, the services being provided by private dental practitioners either on a sessional or contract basis.

The policy regarding hospital dental services was not clear and, as would be expected, considerable variations occurred. With a view to ensuring more uniformity, the Dental Health Committee of the Board of Health,² at the Minister's request, undertook a review of existing services. As a result of its inquiries and deliberations the committee concluded that, basically, it was the function of a hospital dental service to provide dental services which are: (a) an essential part of a patient's hospital treatment; or (b) not obtainable from a dentist in private practice, or (c) needed by those people who are not able to assume full financial responsibility for their own dental care.

Most of the many recommendations contained in the committee's report were adopted and at the request of the department hospital boards are now endeavouring to implement the suggested policy as far as their present resources will allow. Several major hospitals have already improved considerably both their staff and physical facilities, and elsewhere the move towards a more uniform and effective national system of hospital dental services is steadily proceeding.

Conclusion

The dental public health programme in New Zealand has followed a logical plan of concentrating on priority groups and providing regular and systematic treatment—currently to 590,855 children and 154,591 adolescents. Parents are encouraged to enrol their children at 2½ years of age and take advantage of the services which are available until the sixteenth birthday at 6-monthly intervals. On the results evaluated from the department's national survey and subsequent report "Dental Health Statistics of the New Zealand Population in Late Adolescence and Young Adulthood",³ the dental services being provided are proving effective and form a sound basis for further development.

¹N.Z. Board of Health (1962). Employment of dental technicians in New Zealand. (Report Series, No. 7.) Wellington, Government Printer.

²N.Z. Board of Health (1965). Hospital Dental Services; Report of the Dental Health Committee. (Report Series No. 12.) Wellington, Government Printer.

³N.Z. Department of Health (1968). Dental health status of the New Zealand population in late adolescence and young adulthood; a survey conducted by the Dental Health Division of the Department of Health. (Special Report Series No. 29.) Wellington.

APPENDIX III

NEW ZEALAND MEMBERSHIP OF WHO EXPERT ADVISORY PANELS 1970

- Air Pollution:* DOUGLAS, R. T.
Brucellosis: BUDDLE, M. B.
Cardiovascular Diseases: PRIOR, I.
Chronic Degenerative Diseases (Rheumatic Diseases): ROSE, B. S.
Dental Health: DAVIES, G. N. (Resid. Australia), FULLER, J. F., LESLIE, G. H., WALSH, Sir JOHN P.
Environmental Health: HARCOURT, R. R. L.
Food Additives: DACRE, J. C. (Resid. U.S.A.).
Health Education: TAYLOR, C. N. D., TURBOTT, H. B.
Health Statistics: GARDINER, C. E., ROSE, R. J.
Human Genetics: VEALE, A. M. O.
Insecticides: COPPLESTONE, J. F., LAIRD, M. (Resid. Canada).
Maternal and Child Health: BONHAM, D. G., LILEY, A. W.
Mental Health: MIRAMS, S. W. P.
Nursing: BOHM, S. M., SALMON, E. B.
Organisation of Medical Care: JEFFERY, I. J.
Professional and Technical Education of Medical and Auxiliary Personnel: DIXON, C. W.
Public Health Administration: FENDALL, N. R. E. (Resid. U.S.A.), KENNEDY, D. P.
Radiation: ROTH, G. E.
Trachoma: JONES, B. R. (Resid. U.K.), WILSON, R. P.
Venereal Infections and Treponematosis: HILL, B. H. R.
Zoonoses: FAINE, S. (Resid. Australia).

APPENDIX IV

MEMBERSHIP OF COUNCILS, BOARDS, COMMITTEES, AND SUBCOMMITTEES SPONSORED BY THE MINISTER OR DEPARTMENT OF HEALTH¹

A. BOARD OF HEALTH

Chairman

Hon. D. N. McKAY, Minister of Health; *ex officio*.

Deputy Chairman

Dr D. P. KENNEDY, E.D., M.B., CH.B., D.P.H., HON. F.R.S.H.; *ex officio*.

Members

Dr H. J. H. HIDDLESTONE, M.D., CH.B., F.R.C.P., F.R.A.C.P.; statutory appointment.
Dr G. BLAKE-PALMER, E.D., L.R.C.P., F.A.N.Z.C.P., D.P.M., M.R.C.S., L.D.S., R.C.S.; statutory appointment.

Dr C. N. D. TAYLOR, M.B., CH.B., D.P.H., M.P.H.; nominated by Minister of Health.

Dr H. B. TURBOTT, I.S.O., M.B., CH.B., D.P.H.; nominated by Minister of Health.

Sir EDWIN BATE, O.B.E., LL.M.; nominated by Hospital Boards Association.

Prof. PATRICIA D. COLEMAN, M.S., DIP.H.SC.; nominated by Minister of Health.

Mr A. E. REID, M.B.E.; nominated by Counties Association.

Mr E. M. H. KEMP, M.B.E., A.C.A.; nominated by Municipal Association.

Prof. C. W. DIXON, M.D., D.P.H., M.R.C.S., L.R.C.P., D.C.H., D.L.O., R.C.P., R.C.S., F.R.A.C.P.; nominated by University of Otago.

Prof. E. G. McQUEEN, M.B., B.S., M.R.C.P., F.R.A.C.P.; nominated by Medical Research Council.

Dr W. C. R. NORTH, B.Sc., M.B., CH.B., M.R.C.G.P.; nominated by M.A.N.Z.

Secretary

Mr W. O. D. FINCH, Department of Health.

COMMITTEES OF THE BOARD OF HEALTH

COMMITTEE ON CARE OF THE AGED

Chairman

Mr E. M. H. KEMP, M.B.E., A.C.A.; nominated by Board of Health.

Deputy Chairman

Dr H. B. TURBOTT, I.S.O., M.B., CH.B., D.P.H.; nominated by Board of Health.

Members

Miss R. M. LILICO, N.Z.R.N., P.G.; nominated by Board of Health.

Mr N. A. F. ATKINS, D.F.C.; nominated by Social Security Department.

Dr R. A. BARKER, M.B., CH.B., F.R.A.C.P., M.R.C.P.; nominated by Board of Health.

Mr T. L. BREWERTON, nominated by Treasury.

Dr John A. M. BOYD, M.B., CH.B., B.COMM., A.C.A.; nominated by Board of Health.

Mr K. COVENY, nominated by Department of Labour.

Dr H. R. J. DONALD, O.B.E., B.M., B.CH., M.R.C.S., M.R.C.P.; nominated by Board of Health.

Prof. J. R. McCREARY, M.A., nominated by Board of Health.

Dr D. G. McLACHLAN, M.D., CH.B., D.P.M., M.A.N.Z.C.P.; nominated by Hospital Boards' Association.

Rev. A. D. ROBERTSON, M.B.E., B.A.; nominated by Board of Health.

Secretary

Mr K. SWANN, Department of Health.

¹Registration boards not included. Medical Research Council reports separately—H. 31B.

EPIDEMIOLOGY ADVISORY COMMITTEE (COMMUNICABLE DISEASES)*Chairman*

Prof. C. W. DIXON, M.D., D.P.H., M.R.C.S., L.R.C.P., D.C.H., D.L.O., R.C.P., R.C.S., F.R.A.C.P.;
nominated by Board of Health.

Members

Prof. J. A. R. MILES, M.D., B.CHIR.; nominated by University of Otago.
Dr C. N. D. TAYLOR, M.B., CH.B., D.P.H., M.P.H.; nominated by Board of Health.
Dr H. T. KNIGHTS, M.B., CH.B., D.P.H.; nominated by Board of Health.
Dr E. J. MARSHALL, M.B., CH.B., F.R.C.G.P.; nominated by New Zealand College of
General Practitioners.
Dr N. C. BEGG, M.B., CH.B., M.R.C.P., D.C.H.; nominated by Plunket Society.
Dr C. McDOWELL, M.B., CH.B., F.R.C.P., F.R.A.C.P.; nominated by Board of Health.

Medical Secretary

Dr B. W. CHRISTMAS, M.B., CH.B., D.P.H.; Department of Health.

Secretary

Mr R. S. JONES, Department of Health.

FOOD AND NUTRITION ADVISORY COMMITTEE*Chairman*

Dr H. B. TURBOTT, I.S.O., M.B., CH.B., D.P.H.; nominated by Board of Health.

Members

Prof. J. D. HUNTER, M.D., CH.B., M.R.C.P., F.R.A.C.P.; nominated by Medical School,
University of Otago
Dr W. C. R. NORTH, B.SC., M.B., CH.B., M.R.C.G.P.; nominated by Royal College of General
Practitioners.
Dr G. M. WALLACE, B.SC., PH.D., F.N.Z.I.C.; nominated by Massey University of Manawatu.
Dr MARION ROBINSON, M.H.SC., PH.D.; nominated by University of Otago.
Dr W. MURPHY, M.D., CH.B., D.P.H., DIP.NUT.; nominated by Department of Health.
Dr I. A. M. PRIOR, M.D., CH.B., M.R.C.P., F.R.A.C.P.; nominated by Nutrition Society of
New Zealand.
Mr A. M. W. GREIG, B.SC., N.D.H., F.R.H.S.; nominated by Department of Agriculture.
Mr P. A. MCCONNON, M.SC.(HON.), A.N.Z.I.C.; nominated by New Zealand Institute of
Food Science and Technology.
Miss F. DAVIDSON, B.H.S.C.; nominated by New Zealand Dietetic Association.
Dr T. G. LUDWIG, M.SC., D.D.S.; nominated by Dental Association of New Zealand.
Dr F. B. SHARLAND, D.SC.; nominated by Food Chemistry Division, DSIR.

Secretary

Mr J. B. MOLES, Department of Health.

LOCAL AUTHORITY AFFAIRS COMMITTEE*Chairman*

Dr C. N. D. TAYLOR, M.B., CH.B., D.P.H., M.P.H.; nominated by Board of Health.

Members

Mr M. E. H. KEMP, M.B.E., A.C.A.; nominated by Municipal Association.
Mr A. E. REID, M.B.E.; nominated by Counties Association.
Mr B. W. SPOONER, B.E., M.I.C.E., F.N.Z.I.E.; nominated by Ministry of Works.
Mr K. WOOD, B.C.A.(HONS.); nominated by Treasury.
Mr R. R. L. HARCOURT, M.I.C.E., M.N.Z.I.E.; nominated by Department of Health.
Mr A. M. GRIGG, B.E., M.I.C.E., M.N.Z.I.E.; nominated by Institute of Engineers.

Secretary

Mr A. R. TILL, Department of Health.

MAORI AND POLYNESIAN HEALTH COMMITTEE*Chairman*

Dr H. B. TURBOTT, I.S.O., M.B., CH.B., D.P.H.; nominated by Board of Health.

Members

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 Mr W. HEREWINI, nominated by Maori and Island Affairs Department.
 Prof. J. R. MCCREARY, M.A.; nominated by Board of Health.
 Dr M. N. PAEWAI, O.B.E., M.B., CH.B.; nominated by Board of Health.
 Dr P. W. TAPSELL, M.B.E., M.B., CH.B., F.R.C.S.(EDIN.), F.R.C.S.(ENG.); nominated by Board of Health.
 Dr H. R. BENNETT, M.B., CH.B., D.P.M., F.A.N.Z.C.P.; nominated by Department of Health.
 Dr G. BLAKE-PALMER, E.D., L.R.C.P., F.A.N.Z.C.P., D.P.M., M.R.C.S., L.D.S., R.C.S.; nominated by Department of Health.
 Prof. C. W. DIXON, M.D., D.P.H., M.R.C.S., L.R.C.P., D.C.H., D.L.O., R.C.P., R.C.S., F.R.A.C.P.; nominated by Department of Health.
 Mr H. B. HOLST, B.A.; nominated by Department of Education.
 Mrs M. KARAUARIA, nominated by Maori Women's Welfare League.
 Dr C. N. D. TAYLOR, M.B., CH.B., D.P.H., M.P.H.; nominated by Board of Health.
 Mr J. M. McEWEN, LL.B.; nominated by Maori and Island Affairs Department.
 Mr J. S. JOLLIFF, nominated by Maori and Island Affairs Department.
 Miss J. I. SUTHERLAND, R.N., R.M., DIP.N.; nominated by Department of Health.

Secretary

Mrs M. R. NIVEN; Department of Health.

MATERNITY SERVICES COMMITTEE*Chairman*

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Members

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 Prof. D. G. BONHAM, M.B., B.CHIR., F.R.C.S., F.R.C.O.G.; nominated by the Post-graduate School of Obstetrics and Gynaecology.
 Dr I. B. FARIS, M.B., CH.B., F.R.C.S., F.R.C.O.G.; nominated by N.Z. O. and G. Society.
 Dr G. N. FINDLAY, M.B., CH.B., F.R.C.S.; nominated by St. Helens Hospitals.
 Dr R. G. GUDEX, M.B., CH.B., M.R.C.O.G.; nominated by M.A.N.Z.
 Dr B. J. MACKAY, B.SC., M.B., CH.B., D.P.H.; nominated by Board of Health.
 Dr DIANA MASON, M.B., CH.B., D.C.H., R.C.P., R.C.S., M.R.C.G.P.; nominated by the Royal College of General Practitioners.
 Miss J. MOTLEY, R.N., R.M., Infant Welfare (Plunket) Certificate, DIP.N. (Hospital Administration); nominated by New Zealand Nurses' Association (Incorporated).
 Dr A. M. RUTHERFORD, M.B., CH.B., M.R.C.O.G.; nominated by New Zealand Council R.C.O.G.
 Mrs G. STACEY, nominated by Minister of Health.
 Prof. J. L. WRIGHT, M.B., CH.B., F.R.C.S., F.R.A.C.S., F.R.C.O.G.; nominated by University of Otago.

Secretary

Miss D. J. VAN DE ZANDE, Department of Health.

AIR CONSERVATION ADVISORY COMMITTEE*Chairman*

Dr H. B. TURBOTT, I.S.O., M.B., CH.B., D.P.H.; nominated by Board of Health.

Members

Prof. R. L. EARLE, B.E., B.SC., PH.D., A.M.I.CHEM.E., M.N.Z.I.E., C.ENG.; nominated by the New Zealand Vice Chancellors' Committee.
 Mr L. EVANS, B.ECON.(HONS.), M.A., M.I.MECH.E., C.ENG.

Mr A. J. W. LAMB, B.E., M.N.Z.I.E., C.ENG., nominated by the New Zealand Counties Association and the Municipal Association of New Zealand.

Mr T. F. S. JOHNSON, M.T.P.I., DIP.T.P.(MCH.); nominated by the Ministry of Works.

Mr K. E. SEAL, M.SC., F.N.Z.I.C., M.AUST.I.M.M.; nominated by the New Zealand Manufacturers Federation.

Dr I. K. WALKER, D.SC., F.N.Z.I.C.; nominated by the Department of Scientific and Industrial Research.

Mr R. T. DOUGLAS, B.SC., F.INST.F., A.M.I.CHEM.E., M.N.Z.I.E., C.ENG.; Department of Health (Technical Executive Officer).

Secretary

Mr R. C. PILGRIM, Department of Health.

COMMITTEE ON DRUG DEPENDENCY AND DRUG ABUSE

Chairman

Dr G. BLAKE-PALMER, E.D., L.R.C.P., F.A.N.Z.C.P., D.P.M., M.R.C.S., L.D.S., R.C.S.; nominated by Board of Health.

Members

Prof. F. N. FASTIER, D.SC., D.PHIL., F.R.I.C., F.N.Z.I.C.; nominated by the University of Otago.

The Very Rev. Dean W. E. W. HURST, M.A., representing religious organisations.

Mr S. G. LITTLE, M.P.S.; nominated by the Pharmacy Board of New Zealand.

Asst. Prof. A. J. METGE, M.A., PH.D.; nominated by Victoria University of Wellington.

Dr W. MURPHY, M.D., CH.B., D.P.H., DIP. NUT.; nominated by Board of Health.

Dr J. A. KILPATRICK, M.D., CH.B., M.R.C.P., F.R.A.C.P.; nominated by M.A.N.Z.

Mr D. H. ROSS, M.A., DIP.ED., A.C.E.; nominated by Department of Education.

Dr P. P. E. SAVAGE, E.D., M.B., CH.B., M.A.N.Z.C.P., D.P.M.; nominated by Department of Health.

Asst. Commissioner R. J. WALTON, O.B.E., E.D.; nominated by the Police Department.

Secretary

Mrs K. SWIFT, Department of Health.

COMMITTEE ON CHILDREN WITH HANDICAPS

Chairman

Dr H. J. H. HIDDLESTONE, M.D., CH.B., F.R.C.P., F.R.A.C.P.; nominated by Board of Health.

Members

Dr B. J. MACKAY, B.SC., M.B., CH.B., D.P.H.; nominated by Department of Health.

Dr S. W. P. MIRAMS, M.B., CH.B., F.A.N.Z.C.P.; nominated by Department of Health.

Prof. R. B. ELLIOTT, M.B., B.S., M.R.A.C.P.; nominated by Board of Health.

Mr O. R. NICHOLSON, M.B., CH.B., F.R.C.S., F.R.A.C.S.; nominated by Board of Health.

Dr P. J. LEWIS, B.SC., M.B., CH.B., M.R.C.P., M.A.N.Z.C.P., D.C.H., D.P.M., R.C.S., R.G.P.; nominated by Board of Health.

Mrs R. W. MANCHESTER, B.A.(ADMIN.), Cert. Med. Soc. Work, Cert. Ment. Health, A.A.P.S.W.; nominated by Board of Health.

Mr. D. H. ROSS, M.A., DIP.ED.; nominated by Department of Education.

Prof. J. T. WARD, B.LITT.(OXON.), B.SC(ECON.), PH.D.; nominated by Board of Health.

Dr C. P. ANYON, M.B., CH.B.; nominated by Board of Health.

Mrs B. CALVERT, M.A., M.H.SC., A.I.ED.; nominated by Board of Health.

Medical Secretary

Dr E. E. DAVIDGE, M.R.C.S., L.R.C.P.; Department of Health.

Secretary

Mr P. R. OPPY, Department of Health.

COMMITTEE ON CLINICAL AND PUBLIC HEALTH LABORATORY SERVICES

Chairman

Dr H. J. H. HIDDLESTONE, M.D., CH.B., F.R.C.P., F.R.A.C.P.; nominated by Board of Health.

Members

Dr F. B. DESMOND, M.B., CH.B., M.R.C.PATH., M.C.P.A.; nominated by Board of Health.
 Mr. H. E. HUTCHINGS, C.O.P.(N.Z.); nominated by Board of Health.
 Prof. N. P. MARKHAM, M.D., M.C.P.A.; nominated by Board of Health.
 Dr W. M. PLATTS, M.B., CH.B.; nominated by Board of Health.
 Dr P. J. SCOTT, M.D., B.MED.SC., M.R.C.P., F.R.A.C.P.; nominated by Board of Health.
 Dr D. T. STEWART, M.D., M.C.P.A.; nominated by Board of Health.

Secretary

Miss E. G. SMITH, Department of Health.

B. MEDICAL SERVICES ADVISORY COMMITTEE*Chairman*

Dr A. W. S. THOMPSON, O.B.E., M.B., CH.B., D.P.H., F.R.C.P.; nominated by the Minister of Health.

Members

Dr B. J. BOWDEN, M.B., CH.B., F.R.C.S.; nominated by M.A.N.Z.
 Dr A. G. CUMMING, M.B., CH.B., M.R.C.O.G., F.R.C.O.G.; nominated by M.A.N.Z.
 Dr W. J. TREADWELL, M.B., CH.B.; nominated by M.A.N.Z.
 Dr B. H. YOUNG, M.B., CH.B.; nominated by M.A.N.Z.

Secretary

Mrs M. J. M. CHURCHHOUSE, B.A.; Department of Health.

SUBCOMMITTEES**LABORATORY SERVICES ADVISORY COMMITTEE***Chairman*

Dr A. W. S. THOMPSON, O.B.E., M.B., CH.B., D.P.H., F.R.C.P.; nominated by the Minister of Health.

Members

Prof. N. P. MARKHAM, M.D., M.B., CH.B., M.C.P.A.; nominated by M.A.N.Z.
 Dr J. T. O'BRIEN, M.D., CH.B., M.C.PATH., M.C.P.A.; nominated by M.A.N.Z.
 Dr N. G. PRENTICE, M.B., CH.B., M.R.A.C.P.; nominated by M.A.N.Z.
 Dr D. T. STEWART, M.D., CH.B., M.C.P.A.; nominated by M.A.N.Z.

Secretary

Mrs M. J. M. CHURCHHOUSE, B.A.; Department of Health.

PHARMACOLOGY AND THERAPEUTICS ADVISORY COMMITTEE*Chairman*

Dr A. W. S. THOMPSON, O.B.E., M.B., CH.B., D.P.H., F.R.C.P.; Director, Division of Clinical Services, Department of Health.

Members

Dr J. L. ADAMS, M.D., CH.B., F.R.C.P., F.R.A.C.P.; nominated by M.A.N.Z.
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