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COMMONWEALTH



OF AUSTRALIA

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REPORT
OF
THE DIRECTOR-GENERAL
OF
HEALTH

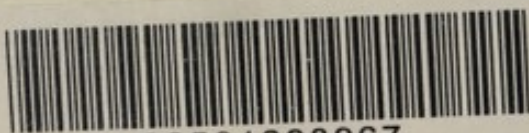
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COMMONWEALTH



OF AUSTRALIA

REPORT
OF
THE DIRECTOR-GENERAL
OF
HEALTH

JULY 1, 1961 — JUNE 30, 1962

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COMMONWEALTH

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Commonwealth Health Laboratories are located at the following centres:—

Townsville, Cairns, Rockhampton, Toowoomba, Lismore, Tamworth, Albury,
Bendigo, Launceston, Hobart, Port Pirie, Kalgoorlie, Darwin, Canberra, Alice
Springs.

The names listed above are those of the officers occupying the various positions at the time of publication of this Report. In several instances the officer concerned assumed the position either during or since the period covered by the Report, the officer formerly occupying the position having either retired or taken up other duties.

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Communicable Diseases Laboratory, Albany, N.Y.

Communicable Diseases Laboratory, Albany, N.Y.

The names listed above are those of the officers occupying the various positions at the time of publication of this Report. In several instances where the position was assumed during the period covered by the Report, the officer formerly occupying the position having either retired or died, the date

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COMMONWEALTH DEPARTMENT OF HEALTH

REPORT FOR THE PERIOD FROM 1st JULY, 1961, TO 30th JUNE, 1962.

THIS report deals in detail with the activities of the Commonwealth Department of Health during the year ending 30th June, 1962.

No major outbreak of communicable disease occurred during the period, although 572 confirmed cases of poliomyelitis were notified, compared with 191 in the previous twelve months.

There was, however, a fall in the number of cases of infectious hepatitis from 12,847 in 1960-61 to 11,557 during the year under review.

The National Health Scheme continued to expand, the Commonwealth providing substantial financial assistance towards meeting the cost of medical and hospital treatment, and the provision of drugs prescribed by doctors, both for private patients and persons receiving treatment in hospitals. The Commonwealth provided medical treatment and drugs free to pensioners and gave financial assistance to State Governments which facilitated the provision of hospital treatment to pensioners without charge.

In the case of both hospital and medical treatment, Commonwealth assistance to patients took the form, principally, of payment of a substantial part of the benefit accruing to persons insured with the hospital and medical insurance funds; also to their dependants. In addition, the Commonwealth met the cost of deducting 8s. a day from the accounts of all patients, insured or otherwise, treated in public and approved private hospitals. In the case of uninsured pensioners treated in public hospitals, the Commonwealth's contribution was 12s. a day.

Membership of the Hospital Benefits insurance scheme at 30th June, 1962, covered 73 per cent. of the population, including members and dependants, and Medical Benefits Scheme membership covered 68 per cent. of the population. In addition, a large section of the community is protected by the Pensioner Medical Service (the cost of which is met by the Commonwealth), Commonwealth Repatriation benefits, and other provisions.

As a result of higher charges for hospital treatment, which in most States have applied in recent years, most hospital fund organizations now operate tables providing a combined Commonwealth and Fund benefit of 80s. a day, while a few organizations operate tables providing combined benefits as high as 120s. a day.

No amendments were made in 1961-62 to legislation governing the operation of these schemes.

Under the Pharmaceutical Benefits Scheme the Commonwealth meets all but 5s. of the cost of dispensing by chemists of a wide range of prescriptions written by qualified medical practitioners. No charge is made to eligible pensioners for the supply of these prescriptions. No legislative changes were made in this scheme during the year under review, although the range of benefits was extended. Restrictions were placed on the prescribing of tranquillizer drugs.

Expenditure under the scheme increased during the year by £7,308,662 to £35,189,883 (including £9,097,498 for pensioners and £3,776,141 reimbursed by the Commonwealth to approved hospitals, Bush Nursing Centres, &c.). Payments by patients, at 5s. per prescription amounted to £6,503,888. Approximately 37,700,000 prescriptions were handled under the scheme, 11,700,000 of them for pensioners. The average price per prescription was 20s. 1d.

The increase in the cost of the scheme was due, principally, to the increasing volume of prescriptions. This resulted from the expansion in the list of benefits, more frequent prescribing and, to a lesser degree, natural expansion accompanying increased population.

The National campaign against tuberculosis, with finance provided to the States under the Commonwealth-State arrangement of 1948, has shown progress in the level of control of the disease in Australia as a whole. However, it is apparent that the uniform attack on the disease envisaged at the initiation of the campaign has not yet been accomplished.

The annual death rate has fallen again slightly, reflecting the success of modern treatment. The current figure of 3.9 deaths from pulmonary tuberculosis per 100,000 of population is very satisfactory. However, the continued incidence of new infections, with 3,570 notifications in all forms of tuberculosis during 1961, suggests the need for greater co-operation from the public and a more positive case-finding programme, at least in some States, if the goal of eradication is to be accomplished as rapidly as is desirable.

Annual expenditure by the Commonwealth is now well below the peak year 1956-57 and has levelled out, being approximately the same as for the previous two financial years.

The work of the Divisions of Human, Animal and Plant Quarantine was pursued vigorously. Although the steady increase in air traffic and reduced times of flights has greatly increased the problems confronting all three divisions, there was no evidence during the period that the quarantine barriers have been broken in any material respect. In December, 1961, it was first discovered that the Sirex Wood Wasp had become established in Victoria. Hitherto the wasp had been confined to Tasmania. At a conference in Canberra in February, 1962, a National Sirex Committee was established, with funds provided jointly by the Commonwealth and States, to survey the extent of the infection in detail and to adopt measures aimed at eradication.

The Department's specialist laboratories, which carry out a wide range of research, collaborate with the medical professions and industry in many fields, provide specialist services and in many instances have teaching functions associated with the Universities and other educational authorities, were active throughout the year. The work of these institutions is outlined in detail in this report.

Officers of the Department co-operated, wherever opportunity presented, with the National Health and Medical Research Council, the principal functions of which are to advise the Minister for Health in the allocation of grants to encourage medical research, and to advise Commonwealth and State Governments on questions of public health.

The Department continued to administer health services in the Australian Capital Territory and the Northern Territory.

Commonwealth Health Laboratories which are located at strategic points throughout Australia, continued to collaborate in research projects and assisted local members of the medical profession by the pathological and other examination of clinical specimens to further the diagnosis of disease not otherwise readily identifiable.

Australia continued to play an active role in the work of the World Health Organization. Australia is a financial member of the Organization and is represented regularly at its Assembly and the meetings of its Regional Committees.

NATIONAL HEALTH BENEFITS

The National Health Scheme had its beginnings in 1946, when the Commonwealth entered into agreements with the States providing for payment by the Commonwealth of a hospital benefit of 6s. per day in respect of each daily occupied bed in public hospitals.

The Scheme has since been expanded so that to-day it covers a wide range of benefits and services for the community. The Commonwealth provides substantial financial assistance towards meeting the cost of medical, hospital and pharmaceutical treatment for the individual generally. Special consideration has been given to the health needs of pensioners.

The National Health Act was introduced in 1953 to consolidate into a single Act all legislation which provided the necessary authority for the separate services. The *National Health Act 1953-1961* provides for the Medical Benefits Scheme, the Hospital Benefits Scheme, the Pensioner Medical Service and the Pharmaceutical Benefits Scheme.

Commonwealth expenditure on these activities has continued to expand and in the year ended 30th June, 1962 amounted to £72,700,000 compared with £62,800,000 in the previous year.

The graph below compares the amounts paid under each Scheme in 1960-61 and 1961-62.

COMMONWEALTH EXPENDITURE UNDER NATIONAL HEALTH SCHEME 1960-61 AND 1961-62.

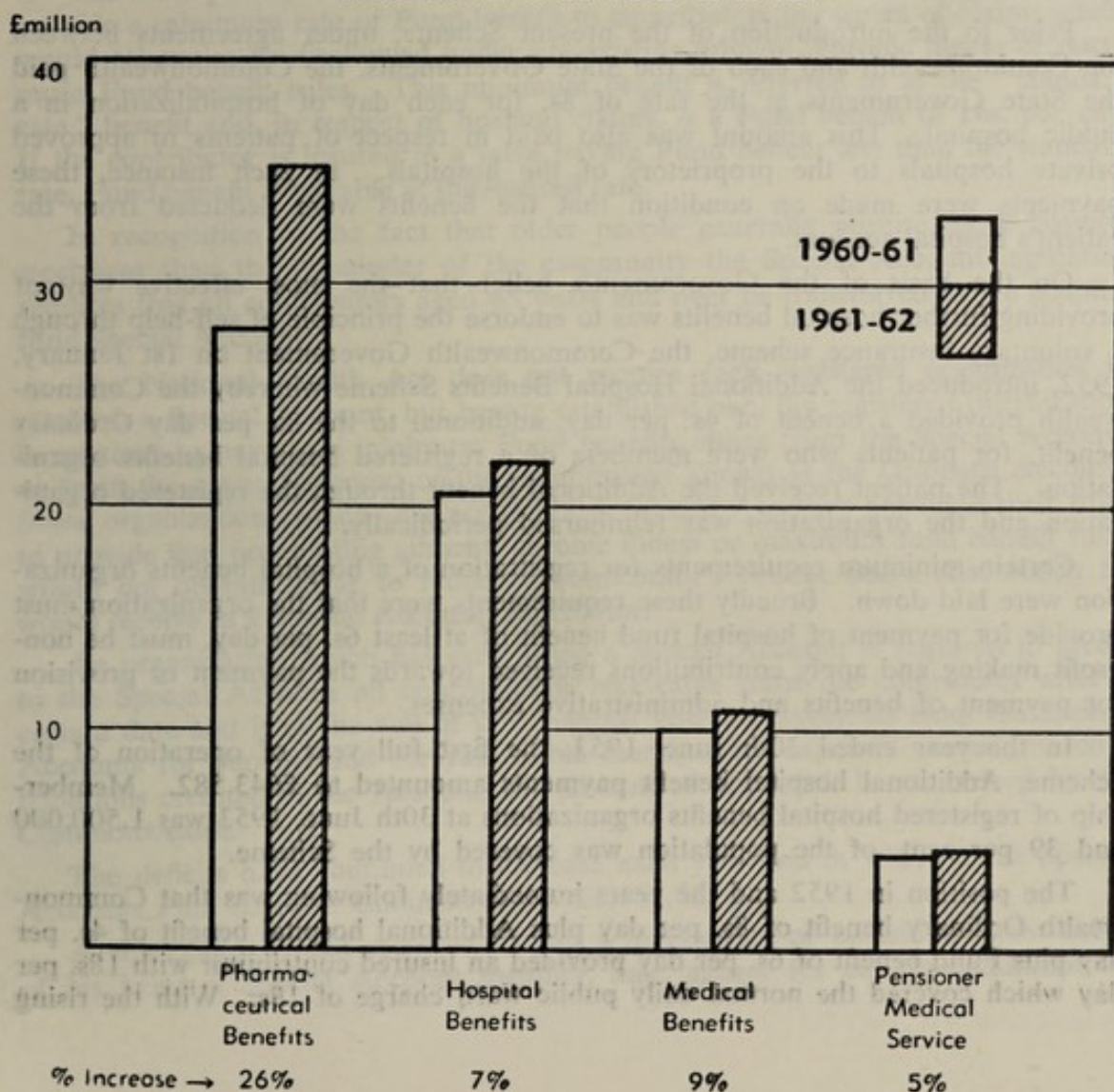


Table I on page 22 sets out the total Commonwealth expenditure since 1st July, 1945, while tables II to XV on page 23 and 35 show the detailed statistics relating to each of the various benefits.

HOSPITAL BENEFITS

During 1961-62 Commonwealth hospital benefits were of two types, known as Ordinary hospital benefits and Additional hospital benefits.

Commonwealth Ordinary hospital benefit was provided for patients in public and approved private hospitals by way of deduction from the patient's hospital account at the rate of 8s. per day or, for pensioners enrolled in the Pensioner Medical Service, who were not contributors to a registered hospital benefit organization and who were patients in public hospitals, at the rate of 12s. per day.

Additional hospital benefits are paid through the registered organizations to their members at the rate of 4s. per day to contributors who are insured for a Fund benefit of at least 6s. per day but less than 16s. per day, and at the rate of 12s. per day to contributors who are insured for a Fund benefit of at least 16s. per day. Contributors also receive the Fund benefit to which they are entitled under the rules of the organizations.

As it is now ten years since the present Hospital Benefits Scheme, based on the principle of self-help, was introduced, this is an appropriate time to review the operation of the Scheme.

Prior to the introduction of the present Scheme, under agreements between the Commonwealth and each of the State Governments, the Commonwealth paid the State Governments at the rate of 8s. for each day of hospitalization in a public hospital. This amount was also paid in respect of patients in approved private hospitals to the proprietors of the hospitals. In each instance, these payments were made on condition that the benefits were deducted from the patient's hospital account.

On the basis of the Government's belief that the most effective way of providing further hospital benefits was to endorse the principle of self-help through a voluntary insurance scheme, the Commonwealth Government on 1st January, 1952, introduced the Additional Hospital Benefits Scheme whereby the Commonwealth provided a benefit of 4s. per day, additional to the 8s. per day Ordinary benefit, for patients who were members of a registered hospital benefits organization. The patient received the Additional benefit through the registered organization and the organization was reimbursed periodically.

Certain minimum requirements for registration of a hospital benefits organization were laid down. Broadly these requirements were that the organization must provide for payment of hospital fund benefit of at least 6s. per day, must be non-profit making and apply contributions received towards the payment or provision for payment of benefits and administrative expenses.

In the year ended 30th June, 1953, the first full year of operation of the Scheme, Additional hospital benefit payments amounted to £643,582. Membership of registered hospital benefits organizations at 30th June, 1953 was 1,500,000 and 39 per cent. of the population was covered by the Scheme.

The position in 1952 and the years immediately following was that Commonwealth Ordinary benefit of 8s. per day plus Additional hospital benefit of 4s. per day plus Fund benefit of 6s. per day provided an insured contributor with 18s. per day which covered the normal daily public ward charge of 18s. With the rising

cost of hospital treatment, however, the charge for public ward hospitalization had been increasing and by 1957 the usual charge was 36s. per day in all States except Queensland where public ward treatment was, and still is, free. To meet this situation the Commonwealth, in conformity with the principle of the insurance scheme, introduced from 1st January, 1958 a 12s. per day Additional hospital benefit for contributors who insured for a Fund benefit of at least 16s. per day. Accordingly, as from 1st January, 1958 a person insured for 16s. Fund benefit received, together with Commonwealth benefits amounting to 20s., a total of 36s. a day which generally covered the public ward charges throughout the Commonwealth.

As a result of the introduction of the increased daily rate of Additional hospital benefits, the payment of Commonwealth Additional benefits rose from £2,831,944 in 1957-58 to £6,146,007 in 1958-59.

At this time an appreciable percentage of claims for Fund benefit was being rejected by the organizations under rules which provided for non-payment of benefits in cases of pre-existing ailments, chronic illnesses and claims in excess of the specified maximum. Although these exclusions were a source of criticism of the Hospital Benefits Scheme, the level of organizations' contributions did not permit them to extend benefits in such cases.

To meet these problems, Special Accounts were introduced from 1st January, 1959.

The basic principle of the Special Accounts is that the registered organizations provide a minimum rate of Fund benefit to contributors in respect of claims which would otherwise be disallowed under pre-existing ailment, chronic illness or maximum Fund benefit rules. This minimum benefit is referred to as the "standard rate" benefit and, in respect of hospital claims, is a Fund benefit of 16s. per day. If the contributor is insured in a table paying Fund benefit less than the standard rate, Fund benefit is payable at the insured rate.

In recognition of the fact that older people generally require more hospital treatment than the remainder of the community the Special Account legislation requires that all contributors aged 65 years and over be transferred to the hospital fund Special Account.

The National Health Act does not require each registered organization to establish a Special Account, but having established one, the registered organization is required to pay these minimum Fund benefits either from the Special Account or from the general account of the organization known as the Ordinary Account. Some organizations which did not establish Special Accounts amended their rules to provide that pre-existing ailment, chronic illness or maximum fund benefit rules would not operate so as to reduce a contributor's benefit below that which he would receive as a Special Account contributor.

An organization which has established a Special Account is required to credit to the Special Account all contributions receivable from the contributor after a certain date and if at the end of the financial year the payments from the Special Accounts for benefits and for reasonable management expenses exceed the contributions credited to the Account, the amount of the deficit is reimbursed by the Commonwealth.

The deficits have continued to increase each year and in 1961-62 the Special Accounts Plan cost the Commonwealth £2,665,565.

A contributor is not required to pay a higher rate of contribution by virtue of his being a Special Account member, and, except for certain conditions, is

entitled to the same fund benefit as if he were an ordinary contributor. The main conditions are that the hospital must be recognized for Special Account purposes and that combined Commonwealth and Fund benefit must not exceed the amount of the hospital charge and certain extra charges.

When the Special Accounts were introduced it was provided that Fund benefit was not payable to a Special Account contributor unless he was a patient in a hospital recognized for the purpose. The Act provided that benevolent homes, convalescent homes, homes for the aged, rest homes and institutions that catered principally for permanent patients could not be recognized. The decision to exclude these institutions were based partly on financial considerations, partly on the ground that the Commonwealth was already contributing generously by way of Commonwealth Ordinary and Additional hospital benefits towards the maintenance of patients in these institutions, but principally on the ground that, in general, Fund benefit had never been paid for treatment in such institutions.

The policy was subject to criticism mainly on the grounds that the rigidity of the provision excluded from benefit some patients in certain of these institutions, who, to all intents and purposes, were genuine hospital cases. In 1959, the National Health Act was accordingly amended to re-define the class of institution which was not to be recognized by omitting the reference to institutions catering for permanent patients and by providing also for payment of Special Account Fund benefit to particular individual patients in unrecognized hospitals where the patient was suffering from an illness or injury requiring treatment of the kind provided in recognized public hospitals and had in fact received such treatment.

During 1961-62 a total of 2,177 cases received consideration under this provision and hospital fund Special Account benefit was authorized in full in 1,692 cases and in part in 94 cases.

In 1961, the condition limiting the combined Commonwealth and Fund benefits for Special Account contributors to the amount of the hospital charge was liberalized to permit extra charges to be taken into account. These extra charges are those made by a hospital by way of theatre fees or charges for drugs, dressing (including plaster) or special nursing or laundry services incurred by a patient during his period of hospitalization.

An indication of the success of the Special Accounts in extending the availability of benefits under the voluntary insurance scheme is shown in the fact that hospital benefit funds with more than 90 per cent. of the total membership have voluntarily established Special Accounts, while 11.6 per cent. of the overall membership of all hospital benefits funds are members of Special Accounts.

As charges for hospitalization have increased, hospital benefit tables have been introduced by registered organizations to afford opportunity to obtain adequate benefit cover. Most organizations now operate tables providing a combined Commonwealth and Fund benefit of 80s. per day, while a few organizations operate tables providing a combined benefit as high as 120s. per day.

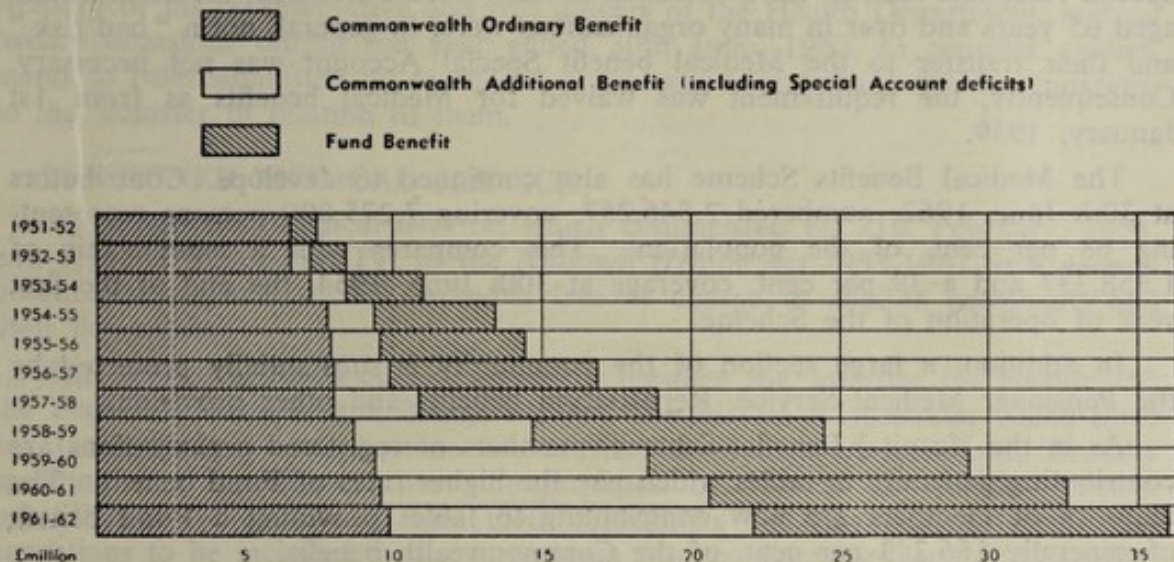
Influenced by increased hospital charges and the incentive of the higher Commonwealth Additional benefit, almost all members of registered organizations are now contributing to tables which pay a Fund benefit of at least 16s. per day; for more than 98 per cent. of the days for which Commonwealth Additional benefits are paid, those benefits are at the rate of 12s. per day.

From a modest beginning where, at 30th June, 1952, only 25 per cent. of the population was covered by voluntary health insurance under the Hospital Benefits

Scheme and total benefit (including Fund Benefit) paid during 1951-52 amounted to £7,500,000, the Scheme has grown to the stage that at 30th June, 1962, 73 per cent. of the population is covered and total benefits paid in 1961-62 amounted to £36,200,000.

The graph below illustrates the growth of the Scheme between 1951-52 and 1961-62.

COMMONWEALTH AND FUND HOSPITAL BENEFITS PAID 1951-52 TO 1961-62



MEDICAL BENEFITS

Commonwealth Medical benefits are paid only to financial contributors to registered Medical benefits organizations. The benefits paid for each type of medical service rendered by or on behalf of registered medical practitioners are set out in the Schedules to the National Health Act. Payments are made through the contributor's registered organization, which, subject to its rules, also pays for each medical service a Fund benefit equal to or greater than the amount of Commonwealth benefit.

Certain minimum requirements have been laid down for registration of a medical benefits organization. These requirements are similar to those for hospital benefits organizations inasmuch as the organization must be non-profit making and apply contributions received towards the payment, or provision for payment, of benefits and administrative expenses. The organization must provide a Fund benefit equal to or greater than the amounts specified for all the professional services included in the First Schedule to the National Health Act.

Generally, for a weekly contribution of between 1s. 3d. and 2s. for a single person and 2s. 6d. and 4s. for a family, a contributor receives a combined Commonwealth and Fund benefit ranging from 12s. to 16s. for a general practitioner consultation to £60 for some major operations. The combined benefit must not, however, exceed 90 per cent. of the fee charged by a medical practitioner.

In addition, most registered organizations provide Fund benefits for certain ancillary services such as physiotherapy treatment, home nursing and optometrical services, for which no Commonwealth benefit is paid.

The Special Accounts system also operates in the Medical Benefits Scheme to provide minimum Fund benefits to contributors in respect of claims which would otherwise be disallowed under organizations' rules relating to pre-existing ailments and maximum benefits. In the case of medical benefits, the standard rate is a Fund benefit for each medical service equivalent to the amount specified for that service in the First and Second Schedules to the National Health Act.

Initially, the Special Account legislation required that all contributors to medical benefits organizations aged 65 years and over be transferred to the Special Account. However, it was found during the first year of operation of the Special Accounts that, so far as medical benefits were concerned, the contributors aged 65 years and over in many organizations were, in general, not a "bad risk" and their transfer to the Medical benefit Special Account was not necessary. Consequently, the requirement was waived for Medical benefits as from 1st January, 1959.

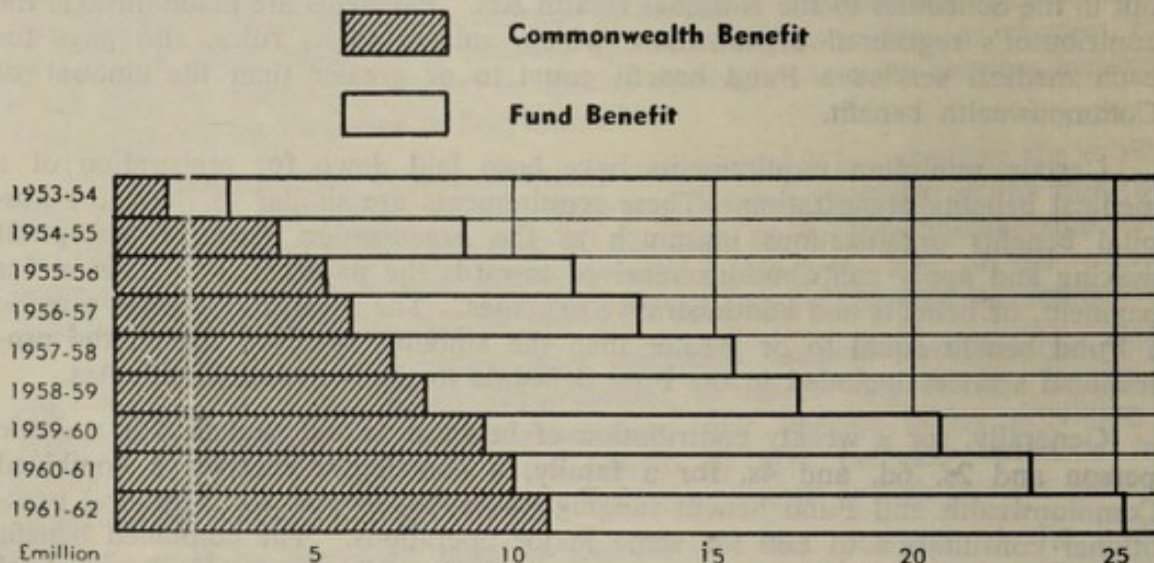
The Medical Benefits Scheme has also continued to develop. Contributors at 30th June, 1962, numbered 2,846,257, covering 7,275,000 persons representing 68 per cent. of the population. This compares with a membership of 1,358,337 and a 39 per cent. coverage at 30th June, 1954, the end of the first year of operation of the Scheme.

In addition, a large section of the community is substantially protected by the Pensioner Medical Service, Repatriation benefits and other provisions.

As in the Hospital Benefits Scheme, members of registered organizations are contributing generally to tables which pay the higher rates of Fund benefit. The majority of members are now contributing to tables providing a Fund benefit of generally 166.2/3 per cent. of the Commonwealth benefit.

The graph below sets out the benefits paid under the Medical Benefits Scheme from 1953-54 to 1961-62.

COMMONWEALTH AND FUND MEDICAL BENEFITS PAID 1953-54 TO 1961-62.



Commonwealth Health Insurance Council: The Commonwealth Health Insurance Council is constituted under Section 136 of the National Health Act. Its functions are to advise the Minister on matters relating to the Medical Benefits and Additional Hospital Benefits Schemes and to recommend means by which improvements in methods and standards may be effected. The Council consists

of the Director-General of Health as Chairman, six members nominated by the State Associations of registered organizations, members representative of registered organizations generally and one member nominated by the Federal Council of the Australian Medical Association.

The Council met in Canberra in November, 1961. It discussed various aspects relating to the Medical and Hospital Benefits Schemes and made a number of recommendations to the Minister.

Registration Committee: The Registration Committee, which is constituted under Section 70 of the National Health Act and consists of the Commonwealth Actuary or his representative and two officers of the Health Department, met on twenty occasions during the year ended 30th June, 1962, to consider amendments to rules submitted by registered organizations and make recommendations to the Minister in relation to them.

PENSIONER MEDICAL SERVICE

The Pensioner Medical Service, which commenced on 21st February, 1951, and operates under Part IV. of the *National Health Act* 1953-1961, is a general practitioner medical service provided free of charge to eligible pensioners and their dependants.

The Service is based on an agreement between the Minister for Health and the Federal Council of the British Medical Association in Australia which since 1st January, 1962, has become the Australian Medical Association. Broadly speaking, the agreement covers the provision of medical services by medical practitioners for pensioners and their dependants and sets out the terms and conditions to be included in the agreements that the Director-General of Health, on behalf of the Commonwealth, enters into with individual medical practitioners who wish to participate in the Service. The fees and allowances which will be paid by the Commonwealth to medical practitioners for the medical services are prescribed by Regulation under the National Health Act.

Under this Service, participating doctors provide medical attention of a general practitioner nature, such as is ordinarily rendered by a general practitioner in his surgery or at the patient's home to enrolled pensioners and their dependants. This includes treatment of a patient who has undergone a surgical operation from the time that he returns home from a hospital, but the Service does not extend to specialist medical services. The pensioner (or dependant) has freedom of choice as to which participating doctor he will consult.

Doctors participating in the Service are remunerated by the Commonwealth on a fee-for-service basis, the fees payable as at 30th June 1962, being 11s. for surgery consultations and 13s. for domiciliary visits. The table below sets out the fees paid to participating doctors since the commencement of the Pensioner Medical Service:—

Period.	Fees Paid.	
	Surgery.	Domiciliary.
21.2.51 to 30.6.51	<i>s. d.</i> 6 0	<i>s. d.</i> 7 6
1.7.51 to 31.12.51	8 0	10 0
1.1.52 to 31.10.54	9 0	11 0
1.11.54 to 30.6.58	10 0	12 0
1.7.58 to 30.6.62	11 0	13 0

Under the agreement, doctors are entitled to be paid a mileage allowance by the Commonwealth of 4s. per mile for mileage travelled, one way, where the doctor is required to travel beyond a distance of three miles in metropolitan areas or provincial cities, or two miles in country districts, to attend a pensioner. A mileage fee of 1s. per mile may also be collected by the doctor from the pensioner concerned, provided that no pensioner will be required, in any circumstances, to pay more than 10s. mileage fee. A doctor is also permitted to charge a pensioner an "after hours" fee of 5s. where a service is given under the Pensioner Service outside the doctor's usual hours of practice.

The permissible charges for mileage and after hours services explained above are the only charges that a doctor may make to a pensioner for attention provided under the Pensioner Medical Service.

In addition to the general practitioner service given to enrolled pensioners, a full range of medicines is available free of cost from chemists upon presentation of prescriptions written by doctors.

The number of doctors participating in the Pensioner Medical Service continued to increase in 1961-62. At 30th June, 1962, 6,012 doctors were enrolled, an increase of 151 on the number participating at 30th June, 1961. The table below sets out the number of doctors participating in the Pensioner Medical Service, the average number of medical services given by, and the average payment to, each doctor per annum, since the inception of the Service.

Year ended 30th June.	No. of participating Doctors at 30th June.	Average No. of medical services per doctor p.a.	Average payment per doctor p.a.
1951	2,980	230	£ 75
1952	3,502	699	310
1953	3,898	886	464
1954	4,239	1,009	512
1955	4,567	1,061	566
1956	4,730	1,142	618
1957	4,990	1,106	617
1958	5,243	1,120	622
1959	5,531	1,165	688
1960	5,685	1,220	733
1961	5,861	1,212	728
1962	6,012	1,236	738

To receive the benefits of the Service an eligible pensioner must be in possession of an entitlement card issued by the Department of Social Services, which is the authority for the doctor to provide free medical attention under the Scheme and must be presented to the doctor on each occasion that medical treatment is required. An entitlement card may be retained by the person in whose name it is issued as long as he remains eligible for the Pensioner Medical Service. If, for any reason, a person ceases to be eligible, the card must be returned as soon as possible to the Department of Social Services.

Persons eligible for the Pensioner Medical Service are persons receiving an age, invalid or widow's pension under the Commonwealth Social Services Act or a service pension under the Repatriation Act, subject to an income means test set out in the following paragraph, and persons receiving a tuberculosis allowance under the Tuberculosis Act. Dependent wives and children (under sixteen years of age) of persons who are eligible, are also entitled to the benefits of the Pensioner Medical Service.

The means test applied for new enrolments for the Pensioner Medical Service is the income test that had to be satisfied in order to qualify for a full social service pension as at 31st December, 1953. Details of the means test applied are, except in special circumstances—

Age, Invalid, Widows' and Service Pensions.	Maximum permissible income* per week excluding pension.
Single pensioners	£ 2
Widow	2
Married couple—both pensioners	4
Married couple—one a pensioner	5

* The permissible income is that assessed by the Commonwealth Department of Social Services after making allowances for dependent children, &c.

Persons whose pensions commenced prior to the 1st November, 1955, and persons in receipt of a tuberculosis allowance may receive the benefits of the Pensioner Medical Service even if their income, apart from pension, exceeds the above limits.

The Pensioner Medical Service was introduced to provide a free general practitioner medical service to persons in indigent circumstances. At the time the Service came into operation, pensioners who satisfied the means test to qualify for a social services pension were considered to come within that class. However, with the progressive easing of the pensions means test and increases in pension rates, pensioners were being admitted who, by their means, could not be regarded as being in the indigent class. Accordingly, the limitations on eligibility above were imposed from 1st November, 1955, on all persons granted age, invalid, widows' or service pensions commencing on or after that date.

The Pensioner Medical Service has shown a steady growth since its inception and the number of pensioners and their dependants enrolled in the Service increased a further 5.75 per cent. in 1961-62 to reach 810,317 or 7.6 per cent. of the population at 30th June, 1962.

Committees of Inquiry: Medical Services Committees of Inquiry have been established in each State under the provisions of Section 110 of the National Health Act. The personnel of each Committee consists of the Commonwealth Director of Health for the particular State and four medical practitioners appointed by the Minister for Health from among medical practitioners nominated by the Council of the State Branch of the Australian Medical Association. A member of the Committee holds office during the Minister's pleasure and not for a specified period. The functions of the Committees are to inquire into and report to the Minister for Health or the Director-General of Health on any matter referred to them arising out of the services or conduct of medical practitioners in respect of the Pensioner Medical Service. Broadly, the Committees' investigations are directed to breaches of the spirit and principles of the Pensioner Medical Service rather than to breaches of the statutory provisions of the National Health Act. The Committees' functions also include matters in relation to the prescribing by medical practitioners of pharmaceutical benefits.

The Committees have no power to impose penalties or to take disciplinary action themselves. However, on completion of an inquiry, the Committee recommends to the Minister what it considers to be the appropriate action to be taken.

The Minister on receipt of the Committee's report may disallow, in whole or in part, payment of fees to the doctor in respect of medical services specified in the report, reprimand the medical practitioner or terminate immediately the agreement entered into with the medical practitioner. Notice of the action taken may be published in the Commonwealth Gazette.

A Federal Medical Service Committee of Inquiry has also been established consisting of the Director-General of Health and four medical practitioners appointed by the Minister for Health from among six medical practitioners nominated by the Federal Council of the Australian Medical Association. The Federal Committee deals with matters involving questions of principle or matters common to more than one State.

PHARMACEUTICAL BENEFITS SCHEME

Pharmaceutical Benefits are provided by the Commonwealth in accordance with Part VII. of the *National Health Act 1953-1961* and the National Health (Pharmaceutical Benefits) Regulations.

In September, 1950, a scheme was implemented whereby certain life-saving drugs were made available on doctors' prescriptions. The drugs were dispensed by chemists of the patients' choice and the Department of Health paid the chemist for the benefits supplied. The Scheme was expanded in August, 1951, to provide, in addition to the life-saving drugs already available, a comprehensive range of medicines for pensioners who were enrolled in the Pensioner Medical Service. No charge was made for benefits supplied either to the general public or to pensioners.

Over the years, the lists of General Pharmaceutical Benefits and Pensioner Benefits were expanded to meet advances in medical knowledge. In March, 1960, a major departure was made from the previous Schemes. On the 1st March, the General and Pensioner Benefit Schemes were amalgamated and the entire range of drugs in both Schemes, with the exception of a small number of drugs restricted to eligible pensioners, was thenceforth made available to the general public. Eligible pensioners have continued to receive benefits free of charge, but other persons are required to pay a fee of 5s. for each prescription.

Pharmaceutical Benefits Advisory Committee: The present Scheme is designed to provide the community with therapy to cover the general scope of medicine. With this end in view the list of drugs available under the broadened Scheme has continued to be enlarged by the addition of new drugs to the list of benefits.

Drugs and medicinal preparations are added to the list of pharmaceutical benefits by the Minister for Health on the recommendation of an expert committee known as the Pharmaceutical Benefits Advisory Committee. This Committee is established under the National Health Act and is required to make recommendations to the Minister on the drugs and medicinal preparations which it considers should be made available as Pharmaceutical Benefits. The Committee also advises the Minister, when required, on the operation of the Scheme.

The Committee consists of nine members. The Australian Medical Association and The Federated Pharmaceutical Service Guild each submit a panel of names selected from members of their profession. From these panels the

Minister appoints to the Committee six doctors and a pharmaceutical chemist. A pharmacologist and a Departmental pharmacist are also members of the Committee.

Appreciation is recorded here of the valuable assistance rendered by this Committee in the operation of the Pharmaceutical Benefits Scheme.

Operations of the Pharmaceutical Benefits Advisory Committee: The Committee met on three occasions during the year. It recommended the addition of a total of 57 new drugs to the list of benefits.

Of the drugs and medicinal preparations added to the list of benefits the most important categories were:—

- (a) Synthetic Penicillins;
- (b) Antifungal antibiotic; and
- (c) Certain antibiotic and anti-tuberculous drugs for use in approved hospitals.

In addition, the Committee recommended that a number of new forms and strengths of existing drugs be added to the list of benefits. An important recommendation of this nature was the addition of ready prepared eye-drops in sterile form.

The Committee also made a number of recommendations varying the categories of the diseases and conditions for which a number of drugs could be prescribed as pharmaceutical benefits. The most important of these recommendations was the imposition of restrictions on the tranquillizing drugs.

Prescribers' Journal: The British National Health Service, concerned by the difficulty of busy doctors in obtaining early and reliable information about new pharmaceutical products, decided to produce in 1961 a journal that would provide early and impartial information on new drugs and medicinal preparations. This journal is known as *Prescribers' Journal*.

A similar problem exists for Australian doctors and it was considered that the Journal would prove of valuable assistance to doctors throughout this country. Negotiations have been completed with the British authorities and permission obtained to reproduce and distribute the Journal to doctors in Australia. The first issue of the Australian edition of the Journal will be made in August, 1962.

Cost of the Scheme: Expenditure by the Commonwealth for the year increased by £7,308,662 over that for the previous year to a total of £35,189,883 (including £9,097,498 for pensioners and £3,776,141 reimbursed for approved hospitals, Bush Nursing Centres, &c.). Total payments by patients at 5s. per prescription amounted to £6,503,888.

The number of prescriptions represented by the above payments (excluding £3,776,141 reimbursement to approved hospitals, Bush Nursing Centres, &c.) totalled 37,714,406 made up of 11,664,036 for pensioners and 26,050,370 for the general public.

Expenditure for benefit prescriptions (excluding approved hospitals and Bush Nursing Centres, &c.) increased by £6,934,145. The increase consisted of £1,836,692 due to the rise in cost to the Commonwealth per prescription and £5,097,453 due to the increased volume of prescriptions.

A marked increase in the average cost per benefit prescription towards the end of 1960-61 continued consistently throughout 1961-62. As a result the annual average cost rose from 19s. for 1960-61 to 20s. 1d. for 1961-62. The increased

volume of prescriptions (the greatest contributing factor to increased expenditure) was due to a combination of an expanded list of benefits, more frequent prescribing and, to a lesser degree, the rise in population.

Itemized expenditure on some of the more widely known therapeutic groups is set out below. Figures are based on claims received during the year and include the patient contribution of 5s. per prescription but exclude reimbursements to approved hospitals and Bush Nursing Centres, &c.

Therapeutic Category.	Expenditure for Period 1.7.61 to 30.6.62.
	£
Broad Spectrum Antibiotics	8,559,426
Penicillins	3,665,931
Diuretics	3,176,749
Tranquillizers	1,685,598
Analgesics	1,356,524
Cardiac drugs	1,340,217
Sulphonamides	1,260,777
Anti-Hypertensives	989,727
Insulins	639,629
Urinary Antiseptics	480,871
Anti-Convulsants	426,621
Vitamins	407,939
Drugs for treatment of cancer	319,385
Corticosteroids	267,608

The remaining expenditure was on a wide variety of drugs whose usage is not so common.

Legislation: Whilst there were no legislative changes in the Scheme during the year, there were several administrative changes.

The Department of Health assumed responsibility for checking chemists' Repatriation benefit claims. These claims had previously been priced and checked by the Pharmaceutical Service Guild. The Public Accounts Committee had reported that this was an undesirable method of checking expenditure of public money and recommended that the Department of Health carry out this check for the Repatriation Department. This has involved checking a much wider scope of items than those covered in the list of pharmaceutical benefits. The volume of Repatriation prescriptions is in the vicinity of 4,000,000 per annum. An arrangement has now been reached whereby prices paid for Health benefits and Repatriation benefits are the same and Repatriation benefits which are not on the Health list are priced in accordance with Department of Health principles.

It has been necessary to recruit additional staff to check claims, because of the introduction of Repatriation checking and the continued extension in the range of pharmaceutical benefits provided, and increased usage.

The provisions for writing pharmaceutical benefit prescriptions were changed to permit doctors to order less than the maximum quantity for the original supply and still order repeats of that benefit on the same prescription. This was done at the request of the Australian Medical Association, which considered that, on occasions, it was necessary, to ascertain with a small supply of a drug, the patient's reaction to it. If satisfactory, the patient would then procure the repeats ordered by the doctor.

Committees of Inquiry: Medical and Pharmaceutical Committees of Inquiry have been established in each State to consider possible breaches in the supply of pharmaceutical benefits. The system is that references concerning doctors are investigated by a Committee comprising four practising medical practitioners (nominated by the Australian Medical Association) and the Director-General of Health or his nominee. Similarly references involving chemists are considered by a Committee comprising four members nominated by the Pharmaceutical Service Guild of Australia, the Commonwealth Director of Health of the State concerned, and a pharmacist who is an officer of the Department of Health. During the year, of the cases considered by Medical Services Committees, eight concerned supply of pharmaceutical benefits whilst Pharmaceutical Services Committees considered 68 cases.

TABLE II

(a) List of cases referred to the Director-General of Health for consideration by the Medical Services Committees and the Pharmaceutical Services Committees during the year 1961-62

State	Medical Services Committees	Pharmaceutical Services Committees	Total
ACT	1	1	2
NSW	1	1	2
NT	1	1	2
Qld	1	1	2
SA	1	1	2
Tas	1	1	2
Vic	1	1	2
WA	1	1	2
Total	8	68	76

CONTINUING SUBMITTED

MAY 1962

TABLE I
NATIONAL HEALTH
Commonwealth Expenditure

Year Ended.	Hospital Benefits.	Medical Benefits.	Pharmaceutical Benefits.(a)	Pensioner Medical Service.	Tuberculosis.(c)	Free Milk for School Children.	Mental Institutions.	Total.
	£	£	£	£	£	£	£	£
30th June, 1946	1,111,292	..	..	..	..	..	..	1,111,292
30th June, 1947	4,380,296	..	..	..	109,603	..	..	4,489,899
30th June, 1948	4,448,015	..	..	..	27,590	..	..	4,475,605
30th June, 1949	5,885,446	..	149,037	..	151,079	..	..	6,185,562
30th June, 1950	6,320,164	..	304,689	..	757,870	..	255,586	7,638,309
30th June, 1951	6,535,628	..	2,930,163	75,511	2,682,749	35,775	405,664	12,665,490
30th June, 1952	6,683,106	..	7,685,046	1,036,225	4,613,154	814,806	517,780	21,350,117
30th June, 1953	7,223,241	..	7,215,309	1,739,953	6,168,289	1,521,394	522,552	24,390,738
30th June, 1954	8,330,053	..	9,229,413	2,115,539	6,959,130	1,999,312	494,833	30,562,446
30th June, 1955	9,320,603	1,434,166	10,739,467	2,516,077	7,366,728	2,237,425	(b) 225,585	36,615,380
30th June, 1956	9,552,944	5,413,320	11,887,434	2,874,364	7,454,255	2,405,349	773,149	40,360,815
30th June, 1957	9,813,283	6,146,029	11,716,825	2,998,886	8,596,624	2,607,040	1,248,132	43,126,819
30th June, 1958	10,823,096	7,085,524	15,033,989	3,198,791	7,908,464	2,755,602	1,256,399	48,061,865
30th June, 1959	14,802,290	7,779,451	20,972,797	3,806,457	7,261,075	3,068,636	1,120,394	58,811,100
30th June, 1960	18,599,245	9,291,706	24,335,671	4,112,637	6,143,772	3,359,369	1,147,472	66,989,872
30th June, 1961	20,668,010	9,976,154	27,881,222	4,200,273	5,535,828	3,560,124	727,242	72,548,853
30th June, 1962	22,202,153	10,911,483	35,189,883	4,397,938	5,592,329	3,741,638	824,216	82,859,640

(a) The amounts shown in this column include some minor expenditure under departmental votes.

(b) Payments up to 30th June, 1955, were made under the *Mental Institutions Benefits Act 1948*.

(c) The amounts shown in this column do not include administrative expenses (Administrative expenses for 1961-62 were £86,000).

TABLE II
HOSPITAL BENEFITS
Commonwealth Expenditure

Year Ended.	Ordinary Benefit.					Total Ordinary Benefit (Public and Private Hospitals).	Additional Benefit.(c)	Payments Towards Special Account Deficits.	Grand Total (Commonwealth Ordinary Benefit, Additional Benefit and Payments Towards Special Account Deficits).
	Public Hospitals.		Private Hospitals.	Total.	Total.				
	8s. per day.	12s. per day (South Australian Part IV. Hospitals).								12s. per day (Pensioners).
30th June, 1946 ..	£ 912,848	£ ..	£ ..	£ 912,848	£ 198,444	£ 1,111,292	£ ..	£ 1,111,292	
30th June, 1947 ..	(a) 3,502,614	..	..	3,502,614	877,682	4,380,296	..	4,380,296
30th June, 1948 ..	(a) 3,433,790	..	..	3,433,790	1,014,225	4,448,015	..	4,448,015
30th June, 1949 ..	4,561,202	..	..	4,561,202	1,324,244	5,885,446	..	5,885,446
30th June, 1950 ..	4,762,431	..	..	4,762,431	1,557,733	6,320,164	..	6,320,164
30th June, 1951 ..	4,915,202	..	..	4,915,202	1,620,426	6,535,628	..	6,535,628
30th June, 1952 ..	4,997,876	..	..	4,997,876	1,642,522	6,640,398	42,708	6,683,106
30th June, 1953 ..	4,186,144	80,441	653,976	4,920,561	1,659,098	6,579,659	643,582	7,223,241	
30th June, 1954 ..	4,197,570	95,882	1,136,460	5,429,912	1,768,856	7,198,768	1,131,285	8,330,053	
30th June, 1955 ..	4,598,496	103,405	1,252,998	5,954,899	1,852,609	7,807,508	1,513,095	9,320,603	
30th June, 1956 ..	4,551,223	105,012	1,377,303	6,033,538	1,880,692	7,914,230	1,638,714	9,552,944	
30th June, 1957 ..	4,314,566	131,443	1,546,932	5,992,941	1,980,222	7,973,163	1,840,120	9,813,283	
30th June, 1958 ..	4,201,007	139,984	1,620,737	5,961,728	2,029,424	7,991,152	2,831,944	10,823,096	
30th June, 1959 ..	4,680,741	145,542	1,653,849	6,480,132	2,167,151	8,647,283	6,146,007	14,802,290	
30th June, 1960 ..	5,527,778	146,283	1,363,354	7,037,415	2,409,490	9,446,905	7,898,573	18,599,245	
30th June, 1961 ..	5,551,606	173,781	1,139,863	6,865,250	2,727,734	9,592,984	8,940,722	20,668,010	
30th June, 1962 ..	(b) 5,804,977	(b) 186,650	(b) 908,527	6,900,154	2,945,045	9,845,199	9,691,388	22,202,153	

(a) 6s. per day up to 30th June, 1948.

(b) Figure subject to revision.

(c) Figures in this column do not include payments towards Special Account deficits.

TABLE III
HOSPITAL BENEFITS
Number of Registered Organizations, Membership, and Coverage as at 30th June, 1961 and 30th June, 1962

State.	Number of Registered Organizations.		Membership as advised by Organizations.		Estimated Coverage (including Dependents).		Percentage of Population Covered.	
	As at 30th June, 1961.	As at 30th June, 1962.	As at 30th June, 1961.	As at 30th June, 1962.	As at 30th June, 1961.	As at 30th June, 1962.	As at 30th June, 1961.	As at 30th June, 1962.
New South Wales	30	30	1,189,756	1,225,338	2,808,000	2,946,000	71	73
Victoria	47	46	860,323	901,596	2,313,000	2,415,000	78	81
Queensland	3	3	311,409	292,579	779,000	724,000	53	47
South Australia	14	13	314,793	336,445	740,000	786,000	74	80
Western Australia	10	11	257,992	269,123	605,000	623,000	81	83
Tasmania	11	10	109,787	104,645	255,000	244,000	71	68
Commonwealth	115	113	3,044,060	3,129,726	7,500,000	7,738,000	72	73

TABLE IV
HOSPITAL BENEFITS
Fund Benefit Statistics for years ended 30th June, 1961 and 30th June, 1962

State.	Number of Days for which Fund Benefit was Paid.		Average Amount of Fund Benefit per Day.		Percentage of Members to whom Fund Benefit was Paid.		Average Stay in Hospital (Days).		Fund Benefit.			
	Year ended 30th June, 1961.	Year ended 30th June, 1962.	Year ended 30th June, 1961.	Year ended 30th June, 1962.	Year ended 30th June, 1961.	Year ended 30th June, 1962.	Year ended 30th June, 1961.	Year ended 30th June, 1962.	Excluding Ancillary.		Ancillary.	
									Year ended 30th June, 1961.	Year ended 30th June, 1962.	Year ended 30th June, 1961.	Year ended 30th June, 1962.
New South Wales ..	4,188,497	4,331,336	£ 1 11 7	£ s. d. 1 14 2	31.6	31.9	11.16	11.06	£ 6,623,666	£ 7,391,703	£ 11,038	£ 16,291
Victoria ..	2,223,364	2,442,035	1 4 8	1 9 0	23.5	24.7	11.68	11.31	2,742,724	3,542,933	27,929	111,806
Queensland ..	1,114,748	1,214,823	1 5 6	1 6 6	28.7	34.9	12.36	11.79	1,423,638	1,611,677	454	815
South Australia ..	940,374	1,049,659	1 9 7	1 14 0	33.1	33.5	9.42	9.19	1,389,648	1,782,608	103,815	127,168
Western Australia ..	955,542	1,002,128	1 6 0	1 9 6	38.0	39.3	9.98	9.76	1,243,233	1,477,617	6,717	55,736
Tasmania ..	317,741	301,227	1 16 3	1 18 11	30.3	29.5	9.83	9.59	575,552	585,892	374	1,492
Commonwealth	9,740,266	10,341,208	1 8 9	1 11 8	29.7	30.9	11.02	10.78	13,998,461	16,392,430	150,327	313,308

TABLE V

MEDICAL BENEFITS

Number of Registered Organizations, Membership, and Coverage as at 30th June, 1961 and 30th June, 1962

State.	Number of Organizations.		Membership as advised by Organization.		Estimated Coverage (including Dependents).		Percentage Population Covered.	
	As at 30th June, 1961.	As at 30th June, 1962.	As at 30th June, 1961.	As at 30th June, 1962.	As at 30th June, 1961.	As at 30th June, 1962.	As at 30th June, 1961.	As at 30th June, 1962.
							Per cent.	Per cent.
New South Wales	26	26	1,210,614	1,157,535	2,842,000	2,804,000	72	69
Victoria	23	23	753,096	797,068	2,126,000	2,253,000	72	76
Queensland	6	6	296,582	280,001	765,000	719,000	52	46
South Australia	9	8	273,778	291,489	687,000	707,000	68	72
Western Australia	9	9	216,891	225,328	523,000	564,000	70	75
Tasmania	10	10	99,112	94,836	230,000	228,000	64	64
Commonwealth	83	82	2,850,073	2,846,257	7,173,000	7,275,000	68	68

TABLE VI
MEDICAL BENEFITS
Fund Benefit Statistics for Years ended 30th June, 1961 and 30th June, 1962

State.	Services received—(Fee-for-service and Contract).				Services received—Fee-for-service only.				Average No. of Services per Contributor.		Fund Benefit paid.					
	No. of Services.		Percentage of G.P. Services to Total Services.		Total Cost.		Percentage of Total Cost met by—		1960-1961-1962.		Excluding Ancillary.		Ancillary.			
	1960-1961.	1961-1962.	1960-1961.	1961-1962.	1960-1961.	1961-1962.	Fund.	Commonwealth.	Contributor.	1960-1961-1962.	Year Ended 30th June, 1961.	Year Ended 30th June, 1962.	Year Ended 30th June, 1961.	Year Ended 30th June, 1962.		
			Per cent.	Per cent.	£	£	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	£	£		
New South Wales ..	8,369,871	8,821,000	71	71	15,754,816	16,874,521	37.2	38.1	26.1	25.8	36.7	36.1	5,874,225	6,450,531	365,995	477,988
Victoria ..	5,078,882	5,644,558	76	74	8,919,367	10,237,729	30.2	31.5	27.1	26.8	42.7	41.7	2,705,299	3,234,623	71,009	99,485
Queensland ..	2,204,442	2,493,878	73	73	3,544,798	4,124,802	40.2	41.2	28.8	28.1	31.0	30.7	1,425,390	1,698,303	114,543	148,389
South Australia ..	2,139,080	2,268,490	74	72	3,554,400	3,917,143	38.1	38.2	29.8	29.4	32.1	32.4	1,355,786	1,496,374	40,396	67,203
Western Australia ..	1,702,750	1,825,965	71	72	2,756,462	3,016,258	39.3	39.5	30.7	30.5	30.0	30.0	1,100,019	1,207,242	41,637	35,557
Tasmania ..	628,002	615,241	66	67	1,090,970	1,079,074	39.6	40.6	26.9	26.6	33.5	32.8	436,277	444,001	35,601	43,154
Commonwealth ..	20,123,027	21,669,132	73	72	35,620,813	39,249,527	36.0	36.9	27.4	27.0	36.6	36.1	12,896,996	14,531,074	669,181	871,776

TABLE VII
PENSIONER MEDICAL SERVICE

Pensioners and Dependants Enrolled in the Pensioner Medical Service as at 30th June, 1961 and 30th June, 1962

State.	1960-61.			1961-62.		
	Number of Pensioners and Allowances Current.	Pensioners Enrolled (including Pensioner Wives).	Total Number of Pensioners and Dependants Enrolled.	Number of Pensioners and Allowances Current.	Pensioners Enrolled (including Pensioner Wives).	Total Number of Pensioners and Dependants Enrolled.
New South Wales	300,742	269,963	305,484	317,207	287,065	324,836
Victoria	188,849	161,812	186,010	202,846	174,804	197,215
Queensland	117,902	107,286	127,578	125,153	111,797	133,254
South Australia	69,221	60,394	67,759	74,230	64,305	72,147
Western Australia	54,827	46,625	52,926	58,328	48,862	55,465
Tasmania	24,161	22,135	26,018	24,389	22,917	26,937
Northern Territory	1,143	425	476	1,612	413	463
Commonwealth	756,845	668,640	766,251	803,765	710,163	810,317

Australian Capital Territory figures are included in those shown for New South Wales.

TABLE VIII
PENSIONER MEDICAL SERVICE
Payments to Participating Doctors for Years ended 30th June, 1961 and 30th June, 1962

State.	1960-61.			1961-62.			
	Number of Participating Doctors.	Payments to Doctors.		Number of Participating Doctors.	Payments to Doctors.		
		Medical Services.	Mileage.		Total.	Medical Services.	Mileage.	Total.
New South Wales	2,297	£ 1,873,575	£ 16,752	2,322	£ 1,904,092	£ 19,806	
Victoria	1,732	988,159	15,690	1,788	1,077,594	15,994	
Queensland	744	540,497	6,050	775	583,448	5,582	
South Australia	517	361,483	4,311	535	385,172	3,838	
Western Australia	414	284,078	811	428	285,250	756	
Tasmania	152	101,131	6,578	160	109,272	6,074	
Northern Territory	5	1,051	107	4	984	76	
Commonwealth	5,861	4,149,974	50,299	6,012	4,345,812	52,126	
							£ 1,923,898
							1,093,588
							589,030
							389,010
							286,006
							115,346
							1,060
							4,397,938

Australian Capital Territory figures are included in those shown for New South Wales.

TABLE X
PHARMACEUTICAL BENEFITS EXPENDITURE

State.	Cost of Benefit Prescriptions.												Total Commonwealth Payment for Prescriptions.	
	Total Cost.		For Population Excluding Pensioners.				For Pensioners.				1960-61.		1961-62.	
			Total Amount.		Amount Met by Patients.		Amount Met by Commonwealth.		Total Amount Met by Commonwealth.		1960-61.		1961-62.	
	1960-61.	1961-62.	1960-61.	1961-62.	1960-61.	1961-62.	1960-61.	1961-62.	1960-61.	1961-62.	£	£	£	£
New South Wales	12,302,606	15,601,092	9,052,182	11,601,192	2,114,647	2,640,195	6,937,535	8,960,997	3,250,424	3,999,900	10,187,959	12,960,897	£	£
Victoria	8,028,669	10,306,749	6,365,996	8,224,894	1,376,316	1,753,726	4,989,680	6,471,168	1,662,673	2,081,855	6,652,353	8,553,023		
Queensland	3,959,767	5,208,478	2,882,650	3,857,511	708,422	915,753	2,174,228	2,941,758	1,077,117	1,350,967	3,251,345	4,292,725		
South Australia	2,645,713	3,352,643	1,983,620	2,523,384	484,199	590,173	1,499,421	1,933,211	662,093	829,259	2,161,514	2,762,470		
Western Australia	1,947,471	2,514,810	1,448,308	1,905,013	340,245	436,499	1,108,063	1,468,514	499,163	609,797	1,607,226	2,078,311		
Tasmania	757,741	933,858	570,862	708,138	138,541	167,542	432,321	540,596	186,879	225,720	619,200	766,316		
Commonwealth	29,641,967	37,917,630	22,303,618	28,820,132	5,162,370	6,503,888	17,141,248	22,316,244	7,338,349	9,097,498	24,479,597	31,413,742		

NOTE.—Australian Capital Territory figures are included in New South Wales. Northern Territory figures are included in South Australia.

TABLE XI
PHARMACEUTICAL BENEFITS PRESCRIPTIONS

State.	Number of Benefit Prescriptions.						Average Cost per Benefit Prescription.					
	Total.		For Population Excluding Pensioners.		For Pensioners.		For All Prescriptions.		For Population Excluding Pensioners.		For Pensioners.	
	1960-61.	1961-62.	1960-61.	1961-62.	1960-61.	1961-62.	1960-61.	1961-62.	1960-61.	1961-62.	1960-61.	1961-62.
New South Wales	13,188,911	15,736,247	8,381,840	10,574,917	4,807,071	5,161,330	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Victoria	7,727,184	9,578,615	5,442,499	7,024,291	2,284,685	2,554,324	18 8	19 10	21 7	21 11	13 6	15 6
Queensland	4,506,406	5,514,348	2,809,918	3,667,916	1,696,488	1,846,432	20 9	21 6	23 5	23 5	14 7	16 4
South Australia	2,889,138	3,408,362	1,937,899	2,363,851	951,239	1,044,511	17 7	18 11	20 6	21 0	12 8	14 8
Western Australia	2,086,513	2,523,068	1,359,355	1,748,332	727,158	774,736	18 4	19 8	20 6	21 4	13 11	15 11
Tasmania	818,483	953,766	557,554	671,063	260,929	282,703	18 8	19 11	21 4	21 10	13 9	15 9
Commonwealth	31,216,635	37,714,406	20,489,065	26,050,370	10,727,570	11,664,036	19 0	20 1	21 9	22 2	13 8	15 7

NOTE.—Australian Capital Territory figures are included in New South Wales. Northern Territory figures are included in South Australia.

TABLE XII
PHARMACEUTICAL BENEFITS
Payments to Hospitals, Bush Nursing Centres, Flying Doctor Services and Miscellaneous

Period.	Hospitals,						Bush Nursing Centres, &c.	Total.
	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.		
Twelve months ended 30th June, 1961 ..	£ 892,418	£ 1,310,000	£ 594,896	£ 255,397	£ 207,692	£ 86,028	£ 55,193	3,401,624
Twelve months ended 30th June, 1962 ..	1,226,868	1,268,179	706,344	208,278	326,171	4,891	35,410	3,776,141

NOTE.—The amounts shown under the heading " Bush Nursing Centres, &c. " are in respect of Bush Nursing Centres, Royal Flying Doctor Services and miscellaneous services located in various parts of Australia.

TABLE XIII
PHARMACEUTICAL BENEFITS
Drugs Dispensed by Chemists
Distribution by Therapeutic Categories
 (Benefits dispensed in hospitals are excluded)

Therapeutic Category.	Percentage of Total Expenditure.	Percentage of Total Prescriptions.
Broad spectrum antibiotics	22.9	9.2
Penicillins	9.8	7.3
Diuretics	8.5	5.6
Sulphonamides	3.4	4.5
Analgesics	3.6	6.6
Cardiacs	3.6	4.8
Anti-hypertensives	2.6	1.5
Tranquillizers	4.5	4.5
Anti-convulsants	1.1	0.7
Vitamins	1.1	1.9
Urinary antiseptics	1.3	1.2
Insulins	0.9	0.2
Drugs for treatment of cancer	0.9	0.4
Corticosteroids	0.7	0.2
Other drugs	35.1	51.4

TABLE XIV
FREE MILK FOR SCHOOL CHILDREN

State.	Number of Children.*	Payments.
	As at 30th June, 1962.	1961-62.
		£
New South Wales	565,000	1,326,863
Victoria	430,000	1,034,283
Queensland	248,000	563,801
South Australia	180,000	331,701
Western Australia	120,000	263,067
Tasmania	57,000	170,918
Australian Capital Territory	11,000	27,734
Northern Territory	7,000	23,271
Total	1,618,000	3,741,638

* These figures represent the approximate number of school children eligible to participate in the Free Milk Scheme.

TABLE XV

DISPENSING OF PHARMACEUTICAL BENEFIT PRESCRIPTIONS

A. *Pharmaceutical Chemists* approved under Section 90 of the *National Health Act 1953-1961* for the purpose of supplying pharmaceutical benefits.

B. *Medical Practitioners* approved under Section 92 of the *National Health Act 1953-1961* for the purpose of supplying pharmaceutical benefits in areas in which there are no other pharmaceutical services available.

As at 30th June.	New South Wales.		Victoria.		Queensland.		South Australia.		Western Australia.		Tasmania.		Total Commonwealth.	
	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.	A.	B.
1950	1,200	2	1,038	6	285	3	265	27	202	12	90	..	3,080	50
1951	1,252	25	1,054	6	332	4	292	30	208	12	93	7	3,231	84
1952	1,323	26	1,070	7	348	5	305	29	212	12	95	8	3,353	87
1953	1,368	29	1,102	8	388	5	329	24	221	10	94	10	3,502	86
1954	1,452	31	1,170	8	437	6	368	25	232	11	95	11	3,754	92
1955	1,519	32	1,206	5	476	7	384	20	243	12	95	12	3,923	88
1956	1,574	31	1,245	6	520	8	396	20	261	11	97	11	4,093	87
1957	1,615	27	1,284	7	554	8	403	19	270	12	101	11	4,227	84
1958	1,681	28	1,299	7	571	8	424	18	282	12	111	11	4,368	84
1959	1,763	30	1,348	6	603	9	433	16	292	11	113	12	4,552	84
1960	1,818	29	1,383	6	645	9	436	17	296	10	118	12	4,696	83
1961	1,877	34	1,402	6	676	7	449	14	311	7	123	12	4,838	80
1962	1,933	36	1,414	6	696	6	459	13	312	6	127	11	4,941	78

TABLE XVI

States Grants (Mental Institutions) Act 1955

STATES' EXPENDITURE AND COMMONWEALTH GRANTS

	1955-56.	1956-57.	1957-58.	1958-59.	1959-60.	1960-61.	1961-62.	Total.
	£	£	£	£	£	£	£	£
New South Wales—								
State Expenditure ..	626,290	1,150,666	972,455	590,492	1,077,181	1,298,642	1,945,912	7,661,638
Commonwealth Grant ..	208,763	383,555	324,152	196,831	359,060	432,881	648,637	2,553,879
Victoria—								
State Expenditure ..	1,337,239	1,581,639	1,636,095	1,858,862	1,554,704	251,461	..	8,220,000
Commonwealth Grant ..	445,746	527,213	545,365	619,621	518,235	83,820	..	2,740,000
Queensland—								
State Expenditure ..	199,764	264,203	342,311	355,536	223,839	292,927	212,151	1,890,731
Commonwealth Grant ..	66,588	88,068	114,103	118,512	74,613	97,642	70,718	630,244
South Australia—								
State Expenditure ..	36,735	385,400	456,476	366,983	275,310	137,073	83,518	1,741,495
Commonwealth Grant ..	12,245	128,467	152,159	122,328	91,770	45,691	27,839	580,499
Western Australia—								
State Expenditure ..	29,953	155,565	87,709	51,631	110,397	45,827	231,067	712,149
Commonwealth Grant ..	9,985	51,855	29,236	17,210	36,799	15,276	77,022	237,383
Tasmania—								
State Expenditure ..	89,467	206,923	274,151	137,677	200,984	155,798	..	1,065,000
Commonwealth Grant ..	29,822	68,974	91,384	45,892	66,995	51,933	..	355,000
Total—								
State Expenditure ..	2,319,448	3,744,396	3,769,197	3,361,181	3,442,415	2,181,728	2,472,648	21,291,013
Commonwealth Grant ..	773,149	1,248,132	1,256,399	1,120,394	1,147,472	727,243	824,216	7,097,005

TUBERCULOSIS DIVISION

The National campaign against tuberculosis, which has now been developing for fourteen years since the passing of the *Tuberculosis Act* 1948, has shown considerable progress with the level of control of the disease in Australia as a whole, being the equal of that reached in the most advanced countries.

However, it is apparent that a uniform attack on the disease as originally envisaged at the start of the campaign has not yet been achieved, in spite of the availability of Commonwealth finance.

The States have each developed somewhat different approaches, to some extent relative to their fundamental geographic, social and population differences. It would appear those with the smaller populations have been able to develop a more effective programme than the more densely populated States.

Thus, although broadly speaking, all States have an established framework for their control measures and there are more than sufficient beds, due to the reduction in demand as a result of modern treatment, further advances are still being made.

A new and larger chest clinic was opened in Brisbane in March, 1962. Thus all States except New South Wales now have an ideal central base from which to develop and co-ordinate the State campaign.

In order further to develop control of tuberculosis in the Northern Territory, the position of Chest Physician (Tuberculosis) has been created.

Annual expenditure by the Commonwealth Department of Health is now well below the peak year 1956-57 and has levelled out, being approximately the same for the last two financial years.

The following table shows the expenditure reimbursed to the States under the *Tuberculosis Act* 1948 from the inception of the campaign until 30th June, 1961, as well as the amount paid to sufferers:—

EXPENDITURE REIMBURSED TO STATES UNDER *TUBERCULOSIS ACT* 1948
TO 30TH JUNE, 1962

Period.	Capital Reimbursements.	Maintenance Reimbursements.	Allowances Paid to sufferers.	Total.
	£	£	£	£
1949-50	236,179	346,142	..	582,321
1950-51	404,600	943,554	1,344,891	2,693,045
1951-52	645,131	2,114,291	1,777,620	4,537,042
1952-53	1,163,439	2,982,321	1,907,945	6,053,705
1953-54	1,295,476	3,738,885	1,876,582	6,910,943
1954-55	1,710,812	3,800,578	1,904,467	7,415,857
1955-56	1,747,722	4,050,581	1,689,774	7,488,077
1956-57	2,378,647	4,805,003	1,460,650	8,644,300
1957-58	2,128,462	4,569,215	1,254,693	7,952,370
1958-59	1,411,062	4,844,106	1,062,609	7,317,777
1959-60	729,236	4,376,256	1,025,473	6,130,965
1960-61	388,018	4,236,687	946,446	5,571,151
1961-62	378,095	4,400,034	872,853	5,650,982
Total	14,616,879	45,207,653	17,124,003	76,948,535

Tuberculosis Allowance (first commenced 13th July, 1950): The number in receipt of the allowance again decreased slightly in 1961, and in spite of the increase in rates in line with the cost of living and pension adjustments at 5th October, 1961, the cost was below £1,000,000 for the second year in succession.

The scale of weekly rates was as follows:—

	£	s.	d.
Sufferer with dependent wife	12	2	6
Sufferer with dependent child or children only	7	7	6
Sufferer without dependants—			
when not in an institution	7	7	6
when maintained in an institution free of charge	5	5	0
Allowance for children under sixteen years of age—			
first child		15	0
other children		10	0

Table showing number of recipients of allowance at 31st December—

1951	6,548
1952	6,127
1953	5,696
1954	5,742
1955	5,029
1956	4,182
1957	3,326
1958	2,750
1959	2,503
1960	2,235
*1961	2,017

* Average length of time that sufferers are in receipt of the allowance is now half that of 1951.

Notifications: It is pleasing to report a slight drop in the total number of notifications for Australia in line with the general trend overseas in developed countries, but this could still show some increase in the future should activities in case detection increase.

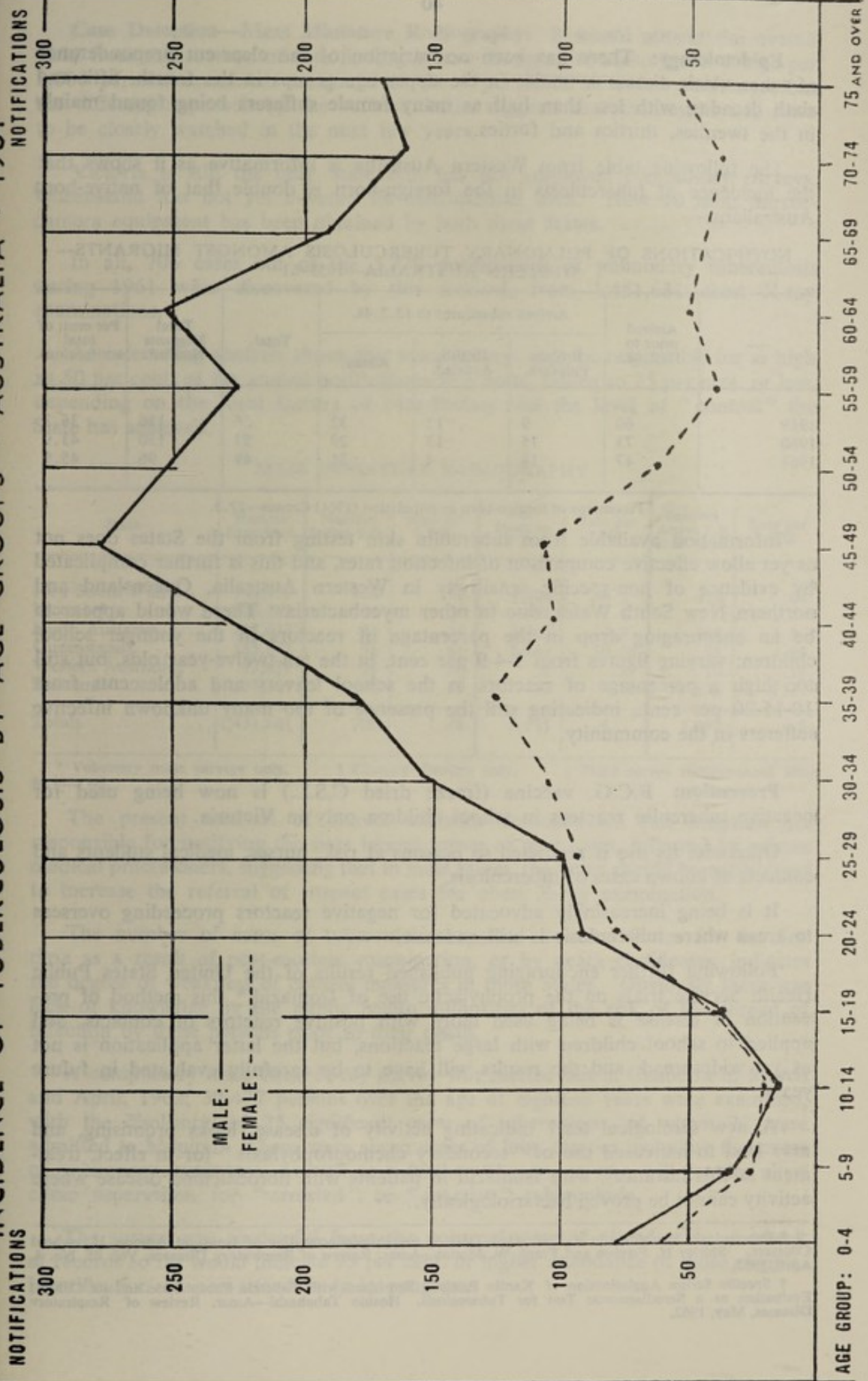
TABLE OF NOTIFICATIONS OF TUBERCULOSIS, 1961

State	Population.	All Forms.	Pulmonary.	Rate per 100,000.
New South Wales	3,915,706	1,455	1,365	34.8
Victoria	2,919,044	727	614	21.0
Queensland	1,514,759	686	650	42.8
South Australia	969,359	230	196	20.2
Western Australia	737,367	293	252	34.1
Tasmania	353,609	129	115	32.5
Australian Capital Territory	58,792	12	11	18.7
Northern Territory	26,457	38	36	136.0
Total	*10,495,093	3,570	3,239	30.8

* Mean population for year ended 31st December, 1961.

Year.	Number of Notifications— Tuberculosis All Forms.	Population.	Rate per 100,000.
1949	3,914	8,045,570	49
1950	4,491	8,307,841	54
1951	4,675	8,527,907	55
1952	4,786	8,739,569	55
1953	4,979	8,902,686	56
1954	4,952	9,090,395	54
1955	4,602	9,313,291	49
1956	4,419	9,533,334	46
1957	4,035	9,747,471	41
1958	3,708	9,951,618	37
1959	3,582	10,166,173	35
1960	4,084	10,398,170	39
1961	3,570	10,495,093	34

INCIDENCE OF TUBERCULOSIS BY AGE GROUPS • AUSTRALIA • 1961



Total Male 2,481, Female 1,089.

Epidemiology: There has been no variation of the clear-cut preponderance of tuberculosis disease in males in the upper age groups in the fourth, fifth and sixth decades, with less than half as many female sufferers being found mainly in the twenties, thirties and forties.

The following table from Western Australia is informative as it shows that the incidence of tuberculosis in the foreign-born is double that of native-born Australians:—

NOTIFICATIONS OF PULMONARY TUBERCULOSIS AMONGST MIGRANTS—
WESTERN AUSTRALIA—1959-61

—	Arrived prior to 12.2.48.	Arrived subsequent to 12.2.48.			Total.	Total Migrants Notified.	Per cent. of total notifications.
		British, Full-fare.	British, Assisted.	Aliens.			
1959 ..	60	9	15	32	56	116	36.3
1960 ..	73	15	13	29	57	130	43.9
1961 ..	47	14	4	31	49	96	45.9

Percentage of foreign-born in population (1961) Census—22.3.

Information available from tuberculin skin testing from the States does not as yet allow effective comparison of infection rates, and this is further complicated by evidence of non-specific sensitivity in Western Australia, Queensland and northern New South Wales, due to other mycobacteria. There would appear to be an encouraging drop in the percentage of reactors in the younger school children; varying figures from 3-4-9 per cent. in the ten-twelve-year olds, but still too high a percentage of reactors in the school leavers and adolescents from 10-15-20 per cent., indicating still the presence of too many unknown infective sufferers in the community.

Prevention: B.C.G. vaccine (freeze dried C.S.L.) is now being used for negative tuberculin reactors in school children only in Victoria.

Otherwise its use is restricted to persons at risk, nurses, medical students and contacts of known cases of tuberculosis.

It is being increasingly advocated for negative reactors proceeding overseas to areas where tuberculosis is still endemic.

Following further encouraging published results of the United States Public Health Service trials on the prophylactic use of Isoniazid,* this method of prevention of disease is being used more with positive reactors of contacts, and applied to school children with large reactions, but the latter application is not as yet widespread, and the results will have to be carefully evaluated in future years.

A new serological test† indicating activity of disease, looks promising, and may lead to increased use of "secondary chemoprophylaxis" (or in effect, treatment in this instance), with Isoniazid in patients with fibrocalcified disease where activity cannot be proven bacteriologically.

* Tuberculosis Morbidity in a Controlled Trial of the Prophylactic Use of Isoniazid Among Household Contacts. Shirley H. Ferebee and Frank W. Mount—*Amer. Review of Respiratory Diseases*, Vol. 85, No. 4, April, 1962.

† Specific Serum Agglutination of Kaolin Particles Sensitized with Tubercle Phosphatide and its Clinical Evaluation as a Serodiagnostic Test for Tuberculosis. Hoshio Tabahashi—*Amer. Review of Respiratory Diseases*, May, 1962.

Case Detection—Mass Miniature Radiography: It would appear the overall yield from this method of case finding is now dropping to about 1 active case per 2,000 persons examined, compared to the 1 per 1,000 of a few years ago, but the different approach by the various States suggests that the results will have to be closely watched in the next few years.

Victoria is still the only State that has not employed compulsory surveys. Queensland has not yet covered its metropolitan area. New 70 mm. mirror-camera equipment has been obtained by both these States.

In all, 706 cases out of the 3,239 notifications of pulmonary tuberculosis during 1961 were discovered by this method, from 1,451,681 chest X-ray examinations.

An interesting analysis shows that mass surveys may be responsible for as high as 50 per cent. of the annual notifications in a State, falling to 25 per cent. or less, depending on the local factors of case-finding and the level of "control" the State has achieved.

MASS MINIATURE RADIOGRAPHY

State.	Number Examined.	Number Active T.B.	Rate per 1,000.	No. Inactive T.B.	Rate per 1,000.	Suspect Active T.B. at 31.12.61.	Rate per 1,000.
New South Wales ..	740,969	434	.58	4,524	6.1	478	.64
Victoria* ..	276,289	71	.26	781	2.8	..	..
South Australia ..	117,633	31	.26	1,763	14.9	398	3.3
Queensland† ..	155,842	96	.61	1,649	10.58	38	.24
Western Australia‡ ..	53,681	14	.26	6	.11	10	.18
Tasmania ..	107,267	60	.61	12	.10	173	1.7
Totals ..	1,451,681	706	.48	8,735	6	1,097	.7

* Voluntary mass surveys only.
an interval.

† Country districts only.

‡ Third survey recommenced after

The present analysis of annual statistics demonstrates that hospitals are responsible for notifying the next largest group of new cases, followed by private medical practitioners, suggesting that in most States, the latter should be encouraged to increase the referral of suspect cases for chest X-ray examination.

The number of cases of tuberculosis reported in some States for the first time as a result of post-mortem examination, or by death certificates, indicates the degree of weakness of control measures in those States. Obviously there was lack of knowledge by the public health authorities of the risk of the spread of infection by these persons prior to their death.

A compulsory mass chest X-ray survey was carried out in Canberra in March and April, 1962; 32,477 persons over the age of eighteen years were examined, with the disclosure of 25 significant cases of tuberculosis, of whom 22 were admitted to hospital. There were seven cases of lung tumour including five cases of pulmonary carcinoma, as well as a further 81 persons who will require chest clinic supervision for "arrested" or "inactive" tuberculosis.

The survey was successful from the point of view of attendance. A check of records so far would indicate 95 per cent. or higher attendance of those eligible. Identification of non-attenders is in progress.

Treatment: The number of beds in use for tuberculous patients (including Repatriation beds) as at 30th June, 1962, decreased from the previous year, distributed as follows:—

New South Wales	..	..	..	..	..	..	1,157
Queensland	..	..	..	..	..	..	792
Victoria	..	..	..	..	..	..	801
South Australia	..	..	..	..	..	..	263
Western Australia	..	..	..	..	..	..	194
Tasmania	..	..	..	..	..	..	167
Total	..	..	..	..	..	..	<u>3,374</u>

The use of Streptomycin, Isoniazid and P.A.S. as the main drugs in the treatment of tuberculosis has not altered, and is effective in rendering the patients non-infectious in considerably more than 90 per cent. of cases.

The amount of primary and secondary drug resistance shown by the tubercle bacillus to these drugs does not seem to be increasing and at the moment can only be estimated at last year's figure of 2-3 per cent.

The lack of standard procedures by the different State laboratories in estimating this problem, however, had been recognized, and following meetings of a Bacteriological Sub-Committee, certain recommendations regarding methods of examination and drug sensitivity testing for mycobacterium tuberculosis were finally circulated in June, 1962, and should allow of a more accurate assessment of this important factor.

It is well known, of course, that P.A.S. is not an ideal drug due to the amount that must be taken and the side-effects of nausea and abdominal discomfort, but as yet no more effective drug has been discovered to replace it.

Of the "second line drugs" it is apparent that Ethionomide is assuming definite importance in the treatment of those patients resistant to one or more of the three main drugs, but it also produces gastric discomfort in approximately one-third of the persons taking it.

Trials with one new drug, Ethambutol, are being carefully watched.

Mortality: The annual death rate reflects the success of modern treatment and has dropped again slightly from the previous year. The majority of deaths reported as due to pulmonary tuberculosis also occur in the upper age groups.

The figure of 3.9 deaths from pulmonary tuberculosis per 100,000 of the population is therefore highly satisfactory.

However, in appraising the position in regard to tuberculosis it is the continued incidence of new infectious sufferers and the prevalence of the numbers of persons requiring supervision for the complaint that must be now recognized as the problem.

MORTALITY

Year.	Population.	Deaths from Tuberculosis (all forms).	Rate per 100,000.	Deaths from Tuberculosis (Pulmonary).	Rate per 100,000.
1949	8,045,570	1,964	24.3	1,800	22.4
1950	8,307,841	1,675	20.18	1,586	19.1
1951	8,527,907	1,538	18.03	1,411	16.5
1952	8,739,569	1,290	14.76	1,165	13.3
1953	8,902,686	974	10.94	879	9.9
1954	9,090,395	897	9.86	823	9.1
1955	9,313,291	729	7.82	672	7.2
1956	9,533,334	724	7.59	663	7.0
1957	9,747,471	585	6.00	543	5.6
1958	9,951,618	538	5.4	501	5.0
1959	10,166,173	549	5.4	509	5.0
1960	10,398,170	489	4.70	447	4.3
1961	10,495,093	447	4.4	412	3.9

The picture is becoming clearer due to the gradual overall decline of tuberculosis in Australia. With the aim now at possible eradication of the disease, the deficiencies of the programme have become more apparent, and with this it is evident that any complacency would result in an unsatisfactory level of control.

It has also become obvious that a more accurate assessment of the anti-tuberculosis measures now being carried out is necessary so that activities may be directed to the best advantage.

Realizing this, the National Tuberculosis Advisory Council at its twelfth session in February, 1962, made recommendations on the definition and extent of the basic data required, and the necessity for the uniform establishment of an effective tuberculosis case register in each State and Territory.

The next decade could be a decisive one in the application of knowledge and experience and the correction of weaknesses in the tuberculosis control structure.

To accept the concept of eradication will perhaps require a revised national policy; it is a public health administrative problem that may necessitate a greater degree of central co-ordination.

A new series of State returns (Statistical forms T.B.S. 1-15) was introduced to enable compilation of more accurate national statistics.

PUBLICATION

THE VALUE OF REPEATED COMMUNITY-WIDE COMPULSORY MASS CHEST X-RAY SURVEYS IN CASE DETECTION FOR PULMONARY TUBERCULOSIS IN WESTERN AUSTRALIA, by Alan King, *Med. J. Aust.* Vol. 2, pp. 172-178 (July 29, 1961).

PUBLIC HEALTH DIVISION

Poliomyelitis: In the year 1960-61 there were 191 confirmed cases of poliomyelitis in Australia. During the year 1961-62 the total rose to 572.

Details are as follows:—

States.	Confirmed Cases.	
	1960-61.	1961-62.
New South Wales	11	367
Victoria	75	21
Queensland	25	157
South Australia	32	19
Western Australia .. .. .	..	6
Tasmania	47	..
Northern Territory	1	2
Total	191	572

The New South Wales outbreak was caused by Type 1, whereas the Queensland outbreak was predominantly Type 3 poliovirus. A notable feature of the Queensland cases was that approximately one-third occurred in fully vaccinated persons. Both outbreaks ended in April, 1962. It was evident that, in the latter stages of the New South Wales outbreak, more Type 3 cases were occurring.

In consideration of these experiences the National Health and Medical Research Council recommended, at its meeting in Adelaide in May, that Commonwealth and State immunization authorities be authorized to encourage and administer a fourth dose of Salk poliomyelitis vaccine, a minimum of one year after the third dose of Salk vaccine. The recommendation was subsequently adopted.

The Council also recommended that Sabin oral vaccine as a protection against poliomyelitis should be imported as soon as possible, to permit the vaccine to be used either in a possible emergency or for pilot studies or administrative procedures.

The Council recommended that there should be no slackening in the campaign to immunize both children and adults with Salk vaccine pending the evaluation of live oral vaccine for Australian use. The Council's Poliomyelitis Committee advised that the use of Salk vaccine should be maintained in all States for all age groups, and that it should remain the basis of the immunization programme. This Committee deplored the fact that there were still a number of young children and young adults in the community who had not received their protection with Salk vaccine.

Infectious Hepatitis: The annual increase in the number of cases of this disease has not been maintained and, in fact, the total dropped more than 1,000 during 1961-62.

1959-60	6,148
1960-61	12,847
1961-62	11,557

The incidence was highest during the summer months and the age group most commonly affected was 5-9 years, followed by the 10-14 years group. It is well known that many cases of infectious hepatitis are not notified and, in cases without jaundice, the diagnosis is often in doubt. However, on the figures available, country areas show a higher incidence than metropolitan areas, often in the ratio of two to one. The incidence has been lowest in Western Australia and highest in Canberra, which had a rate four times that of Sydney. There is no ready explanation of this wide variation in incidence in these two cities, but it may be related to the thoroughness with which cases are notified in the Australian Capital Territory.

Desiccated Coconut: Following the visit to Ceylon in April, 1960, by the then Director of the Public Health Division, Dr. C. E. Cook, and the implementation of recommendations resulting from his discussions with the Ceylon Coconut Board, recent consignments of this product arriving at Australian ports have been free from pathogenic organisms. Consignments are branded clearly to identify the mill of origin and it is a comparatively simple matter to trace the manufacturer should that be necessary at any time.

Customs (Prohibited Imports) Regulations: Data and literature on imported therapeutic appliances and devices are referred, from time to time, by the Comptroller-General, Department of Customs and Excise for advice (1) concerning accompanying literature, (2) regarding therapeutic claims made, and (3) occasionally when there is a suspicion that the goods may be of a dangerous nature to the user. Referrals during 1961-62 totalled eleven.

Medical Statistics: Work on the Eighth Revision of the W.H.O. International Classification of Diseases was brought to completion. When the recommendations have been incorporated into a report, this will be forwarded to Geneva as Australia's contribution to the Revision discussions. In this task the Department has worked in close association with the Bureau of Census and Statistics.

IMMIGRATION MEDICAL SERVICE

During the period under review, the Department again provided medical facilities in Migrant Centres controlled by the Department of Immigration.

At the Bonegilla Centre Hospital, 271 beds, cots and basinettes are installed while at Scheyville, Wacol and Benalla first-aid posts are manned for the benefit of migrants.

The number accommodated in all centres varied from a maximum of 4,514 in July, 1961, to a minimum of 1,576 in June, 1962. At Bonegilla the highest monthly intake of migrants was 915 during August, 1961, and the lowest monthly intake was 247 during May, 1962.

A total of 1,092 in-patients, covering 7,200 bed days, were treated at Bonegilla, and 30,657 out-patient attendances were recorded, 403 infectious cases treated and 2,686 immunizations given at all Centres. In addition, 97 minor operations were performed.

One hundred and eighteen babies were born in local hospitals to Centre residents.

Staff figures at the Bonegilla Centre Hospital at the commencement and end of the period were—

	1st July, 1961.	30th June, 1962.
Medical officers	1	1
Nursing staff	10	9
Orderlies	28	18
Other	29	27

NATIONAL FITNESS MOVEMENT

ADMINISTRATION

The administration of the National Fitness Movement was carried out on the same lines as in previous years with the Commonwealth providing a central administration and the activities in the States centred around the State National Fitness Councils, the State Departments of Education and one University in each State.

FINANCE

The Commonwealth Government again appropriated the sum of £72,500 for National Fitness activities during the year. This supplemented assistance given to National Fitness agencies in the States by State instrumentalities.

The Commonwealth appropriation was allocated to—

State National Fitness Councils	£ 36,954
State Education Departments	17,000
Universities	12,400
Central Administration	3,396
Australian Capital Territory	2,750
	<u>72,500</u>

STATE NATIONAL FITNESS COUNCILS

State Councils continued their State-wide activities in the fields of youth leadership training, assistance to youth and amateur sports organizations, the extension and conducting of camps and youth hostels, assistance in the conduct of holiday play centres and the running of swimming classes and schools.

Details of the allocation of £36,954 from the National Fitness Fund to State National Fitness Councils are set out in the following table:—

Item.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
	£	£	£	£	£	£
1. Salaries and travelling expenses, Director and Assistant Director	1,750	1,750	1,500	1,500	1,500	1,500
2. Services to Associated Groups ..	2,000	2,000	1,500	1,500	1,500	1,500
3. Grants to voluntary Youth Organizations	500	500	438	438	438	258
4. Subsidies to local National Fitness Committees	750	750	654	654	654	384
5. Services to sports organizations ..	243	243	150	150	150	100
6. Development of Camps and Hostels	2,000	2,000	1,500	1,500	1,500	1,500
Totals	7,243	7,243	5,742	5,742	5,742	5,242

STATE EDUCATION DEPARTMENTS

The programmes in State Education Departments financed from the National Fitness Fund again provided for special instruction for teachers, the organization of school camps, the provision of bursaries for teachers and of materials for book and film libraries and teaching aids.

The Commonwealth allocation of £17,000 to State Education Departments from the National Fitness Fund during the year comprised—

Item.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
	£	£	£	£	£	£
1. Training of general teachers in physical education—						
(a) Short courses	500	500	500	300	300	300
(b) Residential courses .. .	500	500	500	500	500	500
2. Provision of bursaries to enable selected teachers to undertake university courses .. .. .	..	..	..	600	600	600
3. Development of health and physical education in practising schools and Teachers' Colleges—						
(a) Equipment	300	300	300	200	200	200
(b) Camps for Teachers' College students	250	250	250	150	150	150
4. Publications, films, records, &c. ..	484	484	483	483	483	483
5. Development of school camping and hostelling—						
(a) Equipment of camps and schools	500	500	500	400	400	400
(b) School camping, hostelling ..	300	300	300	200	200	200
Totals	2,834	2,834	2,833	2,833	2,833	2,833

UNIVERSITIES

Through their courses in physical education the Universities continued to provide the trained personnel necessary to impart instruction and train others in physical education.

The sum of £2,100 was again paid from the National Fitness Fund to each of the Universities of Melbourne, Queensland, Adelaide and Western Australia and the sum of £2,000 each was paid to the Universities of Sydney and Tasmania.

AUSTRALIAN CAPITAL TERRITORY

As in the past direct financial assistance from the National Fitness Fund was given to youth organizations and amateur sporting bodies for specific projects coming within the scope of National Fitness activities. Funds were also provided to assist in meeting the cost of instruction in physical education and promoting a physical recreation programme for young people in the Australian Capital Territory. Financial assistance was given to the Department of the Interior to conduct holiday play centres.

COMMONWEALTH COUNCIL FOR NATIONAL FITNESS

A meeting of the Commonwealth Council for National Fitness was held in Canberra on 1st and 2nd March, 1962.

The object of the meeting was to review past achievements and present activities and define the aims and policy of the Movement.

The Council advised the Minister that the initial conception, planning and general direction of the Movement by the Commonwealth were sound and much had been achieved. Badly needed specialists in physical education are emerging from the university courses established at Commonwealth request. Grants to the Physical Education Sections of Education Departments in each State are stimulating interest in physical education throughout schools and laying the foundation of physical fitness in the community. The National Fitness Councils in each State, also established at Commonwealth request, are active permanent bodies assisting community sport, recreation and cultural activities.

However, in the Council's opinion, the National Fitness Councils are not equipped to meet all present demands for their services much less the demands which will need to be met with the emergence of increased numbers of young people in the next five years due to population increase.

The main need of the Councils was additional money to provide more trained staff, more adequate headquarters, increased camping facilities and a public relations campaign. Substantially increased Commonwealth leadership and interest were needed also.

The future aims and policy of the movement were stated by the Council in these terms—"This Council now considers that it should concentrate its main attention upon physical education and upon community health and recreation as integral parts of a national health policy, at the same time maintaining co-operative relationships with voluntary youth organizations."

DIVISION OF NURSING

An important aspect of the work of the Division of Nursing has been the arranging of basic and post-graduate programmes for nurses coming to Australia under the Colombo Plan Technical Co-operation Scheme and the World Health Organization.

Countries participating in the Colombo Plan have nominated many trained nurses for post-graduate study in Australia. Malaya has nominated girls to undergo a three-year basic nursing training course.

The post-graduate Nursing Colleges and Hospital Authorities have, as in previous years, played a most important part by providing the technical training required, and assisting the nurses to adapt to the needs in their own country the many procedures and ideas they are learning.

Diverse Training: There has been considerable diversity in the types of training programmes arranged for the post-graduate Colombo Plan students. The majority of the students have followed the regular courses provided by the post-graduate Colleges. The specialities in which 34 students were studying during 1961-62 were Diploma in Nursing Administration, Diploma for Sister Tutor, Midwife Teacher Diploma, Certificate in Operating Theatre Management and Certificate in Ward Management. Other qualified nurses have studied the organized hospital courses in the following specialities: tuberculosis, paediatrics, plastic and cancer nursing.

For those undergoing College courses field experience has been planned by the Colleges as an integral part of the students' study. This experience has

been planned concurrently with the course. Post-course hospital experience was arranged for several students on the completion of their formal college programme. This hospital experience is planned to extend, broaden and deepen the nurse's understanding of her special field.

All the nurses attending College and formal hospital courses have qualified for the diploma and certificates awarded by the respective institutions.

The countries nominating these nurses are: Burma, North Borneo, Ceylon, India, Indonesia, the Philippines, Sarawak, Singapore and Thailand.

Under the sponsorship of the World Health Organization two graduate nurses commenced the Midwife Teacher Diploma College Course. One came from Cyprus and the other from Korea.

The arrival in Australia during 1961-62 of another 54 students from Malaya under the Colombo Plan for basic nursing training brought the number up to 70 undergoing a three-year course. This year's intake of nurses was placed in the following hospitals: The Royal Melbourne Hospital, The Royal Children's Hospital, St. Vincent's Hospital, The Alfred Hospital, The Queen Victoria Hospital, The Austin Hospital, The Repatriation General Hospital and the Footscray and District Hospital, Victoria. The Royal Adelaide Hospital, South Australia, the Royal Perth Hospital and the Fremantle Hospital, Western Australia.

During the year eight Malayan nurses and five nurses from Ceylon completed a basic nursing course and return to their own countries to take up their nursing work as fully-fledged nurses.

AUSTRALIAN INSTITUTE OF ANATOMY

The Australian Institute of Anatomy is situated in a building erected in Canberra by the Commonwealth Government under the Zoological Museum Agreement Act 1924. Prior to the passing of this Act, the Commonwealth Government had expressed regret that the Australian nation possessed neither a collection of specimens of the unique and fast disappearing fauna of Australia, nor a museum in which such specimens could be preserved for future generations. Sir Colin MacKenzie, the first Director of the Institute of Anatomy, presented his entire private collection of Australian fauna to the Commonwealth Government. This gift was housed in the Institute. The Institute became part of the Commonwealth Department of Health in 1931.

The Institute consists of a museum section and a laboratory section. In the museum section, which is open to the public, a portion of the original collection of anatomical specimens assembled by Sir Colin MacKenzie is displayed, together with ethnological collections which have been added since the foundation of the Institute. The material has been arranged to present simple lessons in human hygiene, to display the anatomical features and peculiarities of Australian fauna, and to display aspects of the character of Australian aboriginals and natives of Papua and New Guinea.

Work has continued with the revision of the displays illustrating aboriginal culture, such as the provision of shelter, the use of fire, and techniques of hunting, fishing and food gathering.

An exhibit demonstrating the physiology of speech has been designed and is under construction. The travelling exhibit on Dental Health was loaned for display at Adelaide and Perth.

A number of Health Department sections are now situated in the Institute. These include the Museum and Medical Artistry Section, the Nutrition Section, the Commonwealth Health Laboratory for the Australian Capital Territory and a Veterinary Laboratory.

Nutrition: The scientific research work of the Institute is now concentrated on problems of nutrition. It takes the form of field surveys of the dietary status of the Australian population and laboratory investigations into the biochemistry of nutrition and metabolism.

At the request of the Territory of Papua and New Guinea and the South Pacific Commission, a medical officer and a nutritionist carried out a study of the dietary intake and expenditure of energy by two groups of New Guineans—one living in the eastern highlands and another group living in a marine village on the coast of Papua. The report of this study is being prepared.

In continuation of a study of the diets of young women in Australia, a survey of the diets of young women working in Cairns was carried out during June, 1962.

As part of a campaign for the prevention of goitre in Australia, the distribution of iodine tablets to the Department of Health in Victoria and in Tasmania has continued.

The bi-monthly publication "Food and Nutrition Notes and Reviews" has been produced as for the past eighteen years. The pamphlets "Keep Fit With Food" and "Healthy Teeth For Your Children" have been revised.

The following papers were prepared and read at the 10th Pacific Science Congress held in Honolulu: "Nutrition Problems in Australia and the Territories of Papua and New Guinea", "Food Enrichment Policies in Pacific Islands, with Special Reference to Iodized Salt, Thiamine-fortified Rice and Vitamin-A-fortified Foods".

PUBLICATIONS

FOOD AND NUTRITION NOTES AND REVIEWS, Vol. 18, 1960, Nos. 7-12. *IBID*, Vol. 19, 1961, Nos. 1-6.

(Published by the Commonwealth Department of Health.)

REVIEW OF PROGRESS IN NUTRITION IN AUSTRALIA AND THE TERRITORY OF PAPUA-NEW GUINEA. N. E. Kirk and E. H. Hispley, (1961), *Food and Nutrition Notes and Reviews*, Vol. 18, p. 66.

A THEORETICAL ASSESSMENT OF ADEQUATE DIETARY ALLOWANCES. E. H. Hipsley, (1961), *Food and Nutrition Notes and Reviews*, Vol. 18, p. 93.

THERAPEUTIC SUBSTANCES

THERAPEUTIC SUBSTANCES ACT AND REGULATIONS

The Therapeutic Substances Act and Regulations came into operation in 1956 for the purpose of controlling standards of therapeutic substances imported into Australia, traded interstate or exported from Australia in accordance with the standards fixed by the British Pharmacopoeia, the British Pharmaceutical Codex

or by Regulation. The provision of the Act and Regulations also apply to the standards of therapeutic substances supplied in the form of pharmaceutical benefits and to the Commonwealth Government.

A number of samples were obtained during the year and submitted for analysis by the official testing laboratories.

EPIDEMIOLOGY

The following information in respect of the year under review has been collated from information received from State Health Authorities:—

TABLE I

Diseases Notifiable in each State and Territory of Australia and Number of Cases Reported during the Year Ended 31st December, 1961

Disease.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Acute Rheumatism..	58	61	78	9	10	8	8	1	233
Amoebiasis ..	*	2	5	..	7	..	1	..	15
Ancylostomiasis ..	35	..	40	..	..	..	192	..	267
Anthrax ..	*	..	..	..	..	..	..	..	..
Bilharziasis ..	*	..	..	..	..	..	..	..	..
Breast Abscess ..	15	53	33	*	*	*	2	..	103
Brucellosis ..	12	25	1	..	5	..	..	..	43
Chorea ..	4	7	..	1	..	*	3	..	15
Dengue ..	4	..	..	..	..	*	2	..	6
Diarrhoea Infantile..	226	604	142	3	48	14	218	6	1,261
Diphtheria ..	19	2	4	5	15	..	..	..	45
Dysentery Bacillary..	*	95	40	97	117	6	40	..	395
Encephalitis ..	30	22	8	11	2	..	..	..	73
Erythema Nodosum ..	*	22	..	1	..	*	..	..	23
Filariasis ..	*	1	..	..	..	..	..	..	1
Homologous S. Jaundice ..	*	..	*	1	..	*	..	..	1
Hydatid ..	*	11	..	1	..	12	..	..	24
Infective Hepatitis ..	6,025	3,515	1,022	1,406	262	304	61	281	12,876
Influenza ..	*	*	*	..	*	*	*	*	..
Lead Poisoning ..	*	..	19	..	1	*	..	..	20
Leprosy ..	..	3	6	..	15	..	62	..	86
Leptospirosis ..	7	..	88	..	13	*	..	..	108
Leukaemia ..	*	45	*	*	*	*	..	2	47
Malaria ..	*	8	32	2	2	1	7	1	53
Meningococcal Infection ..	41	46	35	5	2	18	1	2	150
Ophthalmia ..	*	*	*	..	29	..	11	1	41
Ornithosis..	1	..	4	3	2	*	..	..	10
Paratyphoid Fever ..	..	1	3	1	6	..	..	..	11
Poliomyelitis ..	175	68	154	44	1	13	3	..	458
Puerperal Fever ..	61	7	25	1	3	..	3	..	100
Q. Fever ..	*	*	131	*	*	*	*	*	131
Rubella ..	*	693	38	66	264	7	3	27	1,098
Salmonella Infection ..	*	*	*	36	43	*	5	4	88
Scarlet Fever ..	273	493	97	129	45	40	2	12	1,091
Staphylococcal Infection (Infancy) ..	78	42	1	*	*	*	*	*	121
Tetanus ..	*	11	33	2	5	*	1	..	52
Trachoma ..	*	..	*	124	369	*	15	..	508
Trichinosis ..	*	*	*	..	..	*	..	..	..
Tuberculosis ..	1,455	698	679	214	238	128	50	12	3,474
Typhoid Fever ..	8	11	2	3	4	..	1	..	29
Typhus (flea, mite or tick borne) ..	2	..	13	..	4	..	..	..	19

* Not notifiable.

NOTE.—No case of cholera, smallpox, plague, epidemic typhus or yellow fever was notified.

TABLE II
INFECTIOUS HEPATITIS: CASES NOTIFIED

State.	1958.	1959.	1960.	1961.	1962.*
New South Wales	3,262	3,183	4,924	6,025	3,358
Victoria	1,053	1,452	2,385	3,515	3,533
Queensland	469	762	719	1,022	884
South Australia	307	749	1,121	1,406	504
Western Australia	396	142	256	262	117
Australian Capital Territory	16	16	88	281	88
Northern Territory	45	53	23	61	101
Tasmania	51	21	44	304	630
Total Australia	5,599	6,378	9,560	12,876	9,215

* Figures in this column are subject to confirmation.

TABLE III
POLIOMYELITIS STATISTICS—AUSTRALIA

Showing Age and Sex, Type of Disease, 1st July, 1960, to 30th June, 1961

Age Group.	Paralytic.				Non-paralytic.		Total.
	Respirator.		No Respirator.		Fatal.	Not Fatal.	
	Fatal.	Not Fatal.	Fatal.	Not Fatal.			
<i>Males.</i>							
0-1	2	..	..	2
1-4	26	..	3	29
5-9	18	..	..	18
10-14	5	..	..	5
15-19	4	..	..	4
20-24	2	5	..	1	8
25-29	2	..	..	11	..	3	16
30-34	1	9	..	..	10
35-39	5	..	..	5
40-44	3	..	..	3
45 and over	1	..	..	1
Total	2	..	3	89	..	7	101
<i>Females.</i>							
0-1	4	..	..	4
1-4	24	..	5	29
5-9	12	..	1	13
10-14	2	..	..	2
15-19	2	..	..	2
20-24	1	10	..	1	12
25-29	5	..	1	6
30-34	5	..	..	5
35-39	1	..	..	1	..	..	2
40-44	1	..	..	1
45 and over	1	..	..	1
Total	1	..	1	67	..	8	77

TABLE IV
POLIOMYELITIS STATISTICS

Total All Persons 1955-56, 1956-57, 1957-58, 1958-59, 1959-60 and 1960-61

Age Group.	Number.					
	1955-56.	1956-57.	1957-58.	1958-59.	1959-60.	1960-61.
0- 1	15	10	..	5	7	6
1- 4	200	66	9	35	24	58
5- 9	241	69	8	24	13	31
10-14	167	36	1	9	1	7
15-19	115	16	4	5	1	6
20-24	117	34	4	4	3	20
25-29	150	26	3	10	5	22
30-34	114	20	4	6	4	15
35-39	48	9	2	2	2	7
40-44	25	2	1	2	..	4
45 and over	17	2	1	..	..	2
Not stated	11	..	..	..	..	..
Total	1,220	290	37	102	60	178

TABLE V
POLIOMYELITIS STATISTICS
Summary

State.	1955-56.			1956-57.			1957-58.			1958-59.			1959-60.			1960-61.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
New South Wales	175	88	263	45	37	82	13	8	21	12	6	18	11	6	17	6	2	8
Victoria	128	108	236	37	25	62	..	3	3	46	32	78	8	2	10	44	36	80
Queensland	64	42	106	18	18	36	2	1	3	1	2	3	3	1	4	10	9	19
South Australia	83	77	160	36	25	61	1	4	5	1	..	1	4	3	7	13	9	22
Western Australia	186	233	419	8	4	12	1	1	2	1	..	1	6	..	6	..	..	..
Tasmania	12	9	21	25	12	37	1	2	3	..	1	1	2	..	2	25	21	46
Australian Capital Territory	6	5	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Northern Territory	4	..	4	..	..	..	..	..	..	..	..	..	6	8	14	3	..	3
Total	658	562	1,220	169	121	290	18	19	37	61	41	102	40	20	60	101	77	178

BROADCASTING AND TELEVISION CENSORSHIP

The censorship of medical talks and advertisements relating to medicines, used in sound broadcasting and television, is carried out under the *Broadcasting and Television Act 1942-1961*. During the year, 1,559 commercials for broadcasting and 88 television commercials were received.

BROADCASTING

In the censorship of radio commercials no serious problems were encountered. Some were rejected because the claims made were grossly exaggerated and several others were rejected because no precise knowledge of the method of treatment advertised was known.

Of the 1,559 broadcast commercials received during the year 1,396 were approved without amendment, 94 were approved with amendment, and 69 were rejected.

The standard attained by the advertising agencies who have submitted these scripts over the past years has shown considerable improvement. There has been a large degree of co-operation between representatives of the Australian Association of Advertising Agencies, the Australian Association of National Advertisers and the Department.

TELEVISION

Out of a total of 88 television commercials received during the year, 67 were approved, 17 were approved with amendment and 4 were rejected. Some of the advertising agencies submit the television commercials in the form of a "storyboard" while others submit a typed script describing the audio and video portions of the commercial and giving the full text of the statements which will be made.

GUIDE FOR MANUFACTURES AND ADVERTISERS

A code relating to the advertising of proprietary medicines was brought to finality and was agreed upon by industry and the Department. This document achieved uniformity in the rules relating to press advertising and broadcasting and television censorship of commercials.

Work is proceeding on the revision of the Departmental Notes on Censorship as applied to medical talks, advertisements and medical films.

LEGISLATION

The Director-General's authority is contained in the following sections of the *Broadcasting and Television Act 1942-1961*:—

Section 100 (6). A licensee shall not broadcast or televise an advertisement relating to a medicine unless the text of the proposed advertisement has been approved by the Director-General of Health, or, on appeal to the Minister under this section, by the Minister.

Section 121 (1). Except as prescribed, a person shall not broadcast or televise a talk on a medical subject unless the text thereof has been approved by the Director-General of Health, or, on appeal to the Minister under this section, by the Minister.

Departmental policy can be summed up as follows:—

- (a) Within a broad interpretation of the principles of truth and ethics, a reasonable degree of latitude is given to the advertiser, the objective being to provide a balance between his economic motives on the one hand, and the contents of, and therapeutic claims made for, his product on the other hand.
- (b) Claims for disease prevention or for "protection" against an illness or illnesses will, in future, require to be substantiated by unequivocal scientific proof. It is not consistent with current acceptable standards of ethics in patent medicine advertising for an advertiser to confuse exaggeration with a misleading and untrue statement.
- (c) A little exaggeration has, over the years, been permitted in all instances where it has been based on a definite truth and on incontrovertible facts. No scripts will be accepted for broadcast or television commercials in which claims for protection or prevention are merely selling propositions based on no, or on negligible, supporting evidence.
- (d) It is not desired to interfere unduly with the buying and selling of proprietary medicines in so far as any member of the public has a perfect right to purchase a product for self-medication if one is available. One merely wishes to ensure that he will have a fair chance of receiving the benefit which he expects to accrue from the recommended dosage.

NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL

The Fifty-second Session of the National Health and Medical Research Council was held at University House, Canberra, on 2nd November, 1961, and the fifty-third Session at Parliament House, Adelaide, on 17th May, 1962. The Adelaide meeting was officially opened by the Honorable Colin Rowe, Attorney-General of South Australia. The Commonwealth Assistant Director-General of Health, Dr. H. E. Downes, deputized for the Chairman (Major-General Refshauge), who was absent overseas.

The membership of the Council during the year was as follows: Major-General W. D. Refshauge (Chairman), Sir Edward Ford and Dr. C. E. Cook, representing the Commonwealth, Dr. R. W. Greville representing the Commonwealth Serum Laboratories Commission, Dr. E. S. A. Meyers (October, 1961) and Dr. C. J. Cummins (May, 1962) representing New South Wales, Dr. A. Fryberg representing Queensland, Dr. P. S. Woodruff representing South Australia, Dr. J. Edis representing Tasmania, Dr. K. Brennan (November, 1961) and Dr. R. Farnbach (May, 1962) representing Victoria, Dr. W. S. Davidson (November, 1961) and Dr. D. J. R. Snow (May, 1962) representing Western Australia, Dr. R. F. R. Scragg representing the Territory of Papua and New Guinea, Dr. W. F. Simmons representing the Australian Medical Association, Professor S. Sunderland representing the Universities having Medical Schools, Professor N. D. Martin (November, 1961) and Professor A. J. Arnott (May, 1962) representing the Australian Dental Association, Dr. J. N. Chesterman representing the Australian Regional Council of the Royal College of Obstetricians and Gynaecologists, Dr. J. G. Radford representing the Australian College of General Practitioners, Professor E. S. J. King representing the Royal Australasian College of Surgeons, Dr. J. J. Billings representing the Royal Australasian College of Physicians, Dr. A. V. Jackson (November, 1961) and Dr. J. A. Bonnin (May, 1962) representing the College of Pathologists of Australia, Professor V. L. Collins representing the Australian Paediatric Association, Dr. H. J. Ham representing the College of Radiologists of Australasia, Sir Norman Nock, a prominent layman appointed by the Commonwealth Government, Miss G. N. Burbidge, a prominent laywoman appointed by the Commonwealth Government, and Dr. R. E. Richards (Secretary).

The Committees of the Council during the year included: Medical Research Advisory, Public Health, Occupational Health, Food Additives, Food Standards, Antibiotics, Medical Statistics, Veterinary Public Health, Poliomyelitis, Preventive Medicine in General Practice, Traffic Injury Research, Advertising of Proprietary Medicines, Radio-active Isotopes, Radio-therapy Advisory, Medical Radiation, Ultrasonics, Epidemiology and Epidemic Diseases, Maternal and Child Health, Nutrition, Dental Research Advisory, Nursing, and Tropical Physiology and Hygiene.

Medical Research: The Council approved the expenditure of £307,718 from the Medical Research Endowment Fund. Approximately 75 per cent. of this expenditure was for salaries of medical research personnel, 16 per cent. was for apparatus, equipment and consumable research supplies, and the remainder was for travel grants and grants-in-aid to particular laboratories. It was decided to organize regional sub-committees to visit the main cities and aid in the assessment of applications for medical research grants. A central register of research

grants was established, in co-operation with the National Heart Foundation and Life Assurance Medical Research Fund of Australia and New Zealand and arrangements were made to stagger the dates of future meetings of the three groups.

Food Additives and Food Standards: Considerable progress was made in drawing up a list of safe food additives and colouring agents, which should be of value to the food industry as well as helping to protect the public from toxic substances. Work continued on producing a comprehensive set of draft food standards, to aid in the development of uniform food legislation throughout the States.

Infected Coconut: The contamination of imported desiccated coconut by Salmonella organisms was investigated, and it was recommended that the nuts be sterilized before disintegration and be shipped in packages marked with the manufacturers' code numbers. Gunny sacks were considered unsuitable for the transportation of coconut to this country.

Pesticides: Work continued on the development of draft legislation for the control of agricultural chemicals and pesticides, and detailed proposals were completed for the control of phosphine, methyl bromide, hydrogen cyanide, and organic phosphates.

Poliomyelitis: The Council recommended that, in an attempt to eradicate poliomyelitis in Australia, the administration of a fourth (booster) dose of Salk vaccine should be encouraged a minimum of one year after the third dose of the vaccine. The particular value of the oral Sabin vaccine was recognized in dealing with a threatened or actual outbreak of poliomyelitis, and the Council therefore recommended that a supply of this vaccine be imported and reserved for use in such emergencies. The Council, however, did not recommend the use of Sabin vaccine as part of the normal campaign against poliomyelitis.

Measles: In view of the encouraging reports about an American measles vaccine, it was suggested that consideration be given to the production of a similar vaccine by the Commonwealth Serum Laboratories.

Traffic Injury Prevention: It was considered that while the epileptic who is under adequate control or who has an aura, presents a negligible risk of liability to road traffic accidents, no one with a history of epilepsy should be permitted to drive a public vehicle.

Hormones in Animal Production and in the Poultry Industry: Although there may be economic advantages to the producer, the Council considered that from the public health point of view the use of hormones for other than therapeutic purposes was inadvisable.

Penicillin in Milk: Penicillin is often used for the treatment of bovine mastitis, and there is a risk that traces of penicillin may then get into milk which is sold for public consumption. This constitutes a risk to people drinking milk who are hypersensitive to penicillin. Investigation is proceeding into the development of a suitable dye to mark veterinary penicillin so that traces of penicillin in milk could easily be recognized by the dye discolouration of the milk.

National Morbidity Survey: One hundred doctors in private practice agreed to take part in a nation-wide survey, which will produce valuable information on the incidence of illness episodes and the frequency and value of prophylactic inoculations, surgical procedures and routine examinations.

Domiciliary Nursing: Detailed recommendations were formulated for the better orientation of nursing training towards domiciliary nursing, which should aim at extending the best of hospital care into patients' homes to minimize the burden on their families and ensure better follow-up treatment.

Snake Bite Anti-venene: In South Africa, snakebite treatment outfits (including anti-venene) are readily available for purchase by the lay public. It was decided to request the Commonwealth Serum Laboratories to investigate the practicability of producing an effective snakebite anti-venene pack suitable for wide distribution in Australia.

The main objective of this report is to provide a summary of the work done in the Department of Health, Victoria, during the year 1965-66. The report is divided into two main sections, the first dealing with the work done in the Department of Health, Victoria, and the second dealing with the work done in the Commonwealth Serum Laboratories, Melbourne.

TEACHING ACTIVITIES

In addition to its University function as an undergraduate department and postgraduate school of the Faculty of Medicine, the Institute of Health, Victoria, has also been directed into providing extra-curricular courses. These courses are designed to provide a practical approach to the study of health and disease, and to provide a means of continuing education for health workers in industry. During the period under review a course in Occupational Health for medical practitioners, recently established as an annual course, was well attended, and a further course for technical and managerial staff in industry on the prevention of occupational hazards was arranged.

The Institute of Health, Victoria, has been established in 1965. It is a non-profit-making organization, and its main objective is to provide a means of continuing education for health workers in industry. The Institute is a registered charity, and its income is derived from the sale of its publications and from the fees charged for its courses. The Institute is a member of the Australian Association of Health Workers, and is affiliated to the Australian Medical Association.

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MEDICAL RESEARCH AND TEACHING INSTITUTIONS

SCHOOL OF PUBLIC HEALTH AND TROPICAL MEDICINE

The School of Public Health and Tropical Medicine performs the functions of teaching, investigation and consultation in the subjects relating to Public Health, Social and Preventive Medicine, and Tropical Medicine. The academic work of the School is under the direction of the University of Sydney, and various training, consultative and professional services are maintained by the Commonwealth Department of Health.

The main sections of the School comprise: Public Health and Preventive Medicine, Tropical Medicine, Bacteriology and Pathology, Biochemistry, Occupational Health, Environmental Health, Parasitology, Entomology and Vital Statistics.

TEACHING ACTIVITIES

In addition to its University functions as an undergraduate department and postgraduate school of the Faculty of Medicine, the teaching activities of the School have also been directed into broader, extra-mural fields. This is in accord with Departmental policy that the School should be an Educational adjunct to the Commonwealth Health Services in maintaining and improving Public Health.

During the period under review a course of three weeks in Occupational Health for medical practitioners, recently established as an annual feature, was well attended, and a further course for technical and managerial staffs in industry, on the prevention of occupational hazards, was arranged.

Postgraduate Studies: Diploma in Public Health (one academic year).—Subjects comprise: Bacteriology, Parasitology, Entomology, Physiology, Biochemistry, Nutrition, Public Health Practice and Administration, Vital Statistics, Epidemiology, Maternal and Child Health, Hygiene and Sanitation, Communicable Disease Control, Occupational Health and Health Education. In 1961 fifteen students were enrolled and in 1962 eight.

Diploma in Tropical Medicine and Hygiene (six months).—Subjects comprise: Parasitology, Entomology, Bacteriology, Vital Statistics, Tropical Physiology, Nutrition, Tropical Medicine, Tropical Hygiene and Sanitation, Epidemiology, Communicable Disease Control, and Child Health. In 1961 eleven students were enrolled and in 1962 fourteen.

University Diploma courses (single subjects provided).—

Diploma in Dermatological Medicine: Mycology, Entomology.

Diploma in Clinical Pathology: Parasitology.

Diploma in Social Work: Physical and Mental Health.

Diploma in Public Health Dentistry: Preventive Medicine, Public Health Administration, Epidemiology, Vital Statistics (with D.P.H.).

Undergraduate Studies: Medicine (5th Year).—Preventive and Social Medicine (55 lectures and practical instruction). The number of students enrolled were 219 in 1961 and 236 in 1962.

Medicine (4th Year).—Helminthology.

Science (3rd Year).—Protozoology (Advanced Zoology).

Architecture (3rd Year).—Hygiene.

Engineering (3rd Year).—Industrial Hygiene and Safety.

Miscellaneous: *Australian School of Pacific Administration.*—Lectures for teachers, patrol officers and others attending ASOPA courses.

Annual Course for Industrial Medical Officers.—Arranged by public advertisement—for medical practitioners.

Courses for Armed Services.—Army: malaria control—local units; instruction to medical officers and to personnel, as arranged. Other services: as arranged.

Annual Non-professional Course in Tropical Medicine and Hygiene.—Arranged by public advertisement for missionaries, planters, nurses and other residents of tropical areas (30 lectures).

Courses in association with New South Wales College of Nursing.—

Diploma in Nursing Administration and Sister Tutor's Diploma.—Public Health and Preventive Medicine; Bacteriology.

Diploma in Industrial Nursing.

RESEARCH AND INVESTIGATION

Bacteriology and Pathology: *Serological examination of meat inspectors.*—A serological examination for evidence of Q fever, leptospirosis and brucellosis in Commonwealth meat inspectors in all States was completed.

Medical mycology.—An investigation of dermatophytosis in the native inhabitants of the British Solomon Islands, in association with Dr. G. E. Hoult, of Honiara, is being continued.

Histopathology of tumours.—The long-term study of tumours in the native population of Papua and New Guinea, which was commenced in 1957 by the establishment of a Papua-New Guinea Tumour Registry, was continued. In this project, the School is associated with the Department of Public Health of the Territory, the Tumour Clinic at St. Vincent's Hospital, Sydney, and the Department of Pathology, University of Western Australia.

Enteritis necroticans.—A bacteriological investigation of an outbreak of food poisoning which occurred in the indigenous population of a district in New Guinea is in progress.

Leptospirosis.—A serological survey of leptospiral infection in domestic animals in New South Wales, to define animal reservoirs of this disease, was completed in association with the Veterinary Research Institute, Glenfield. Reports have been prepared for publication.

Biochemistry: *Serum protein studies.*—Serum protein examinations of New Guinea natives, as part of a longitudinal study associated with a malaria-eradication programme, continued into its third and final year, in association with the Department of Public Health of Papua-New Guinea. Correlation of electrophoretogram quantitation methods was continued in connexion with this and material from other sources.

Cholinesterase levels in workers with organo-phosphorous compounds.—An investigation of cholinesterase levels in normal persons and in persons working with organo-phosphorous compounds, by various assay methods, is in progress.

Micro-estimation of serum bromide.—An investigation of the micro-estimation of bromide in serum and biological tissues is to be completed.

Amino-acid excretion.—Studies in the amino-acid excretion of "benign" albuminurics are in progress.

Environmental Health: Radiant cooling.—In co-operation with the Engineering Division of the C.S.I.R.O., experiments to assess physiologically the effectiveness of a method of radiant cooling have been completed. A paper has been prepared and will be submitted for publication.

Preferred thermal environment.—The results of a survey conducted at Darwin, Northern Territory, to inquire into the preferred thermal environment, are at present in process of analysis.

Thermal comfort.—In association with the C.S.I.R.O., Division of Building Research, the analysis of the results of a field study of thermal comfort during both waking and sleeping conditions undertaken at Batchelor, Northern Territory, is proceeding. One paper has already been published.

Acclimatization to cold.—In a cold room made available by the C.S.I.R.O., Dairy Research Section, studies in facial acclimatization to cold have been carried out in conjunction with the Antarctic Division of the Department of External Affairs.

Antarctic physiology.—The results of physiological investigations conducted in Antarctica in 1959 by Dr. G. M. Budd are at present being analyzed.

Thermal comfort in ships.—A paper entitled "Thermal Comfort in a Small Warship", by Surgeon-Lieutenant D. A. Noble, has been completed and was submitted to the Medical Director-General, Department of the Navy, in December, 1961, who in turn submitted it for publication.

Entomology: Myxomatosis and mosquitoes.—The field studies on myxomatosis transmission, conducted at Mt. Flora in association with the C.S.I.R.O., Wildlife Survey Section, have been restricted during this period. Observations have been made, however, in order to maintain the continuity of the studies. A further report of the series on this work was published.

Biting midge (sandfly) investigations.—Work on the biting midges, in this period, was largely confined to consideration of the extensive data already collected. A paper on biting midges as possible vectors of virus diseases in the Townsville area was published, and a further paper, on sandflies as possible vectors of diseases of domesticated animals in Australia, was submitted for publication.

Mosquito feeding habits.—Precipitin tests of the blood meals of mosquitoes, to determine their feeding preferences, were continued.

Occupational Health: Health of telegraphists.—Further progress was made in the investigation of the health of telegraphists, including detailed analysis of the sickness and absence records of more than 2,000 employees in the Postmaster-General's Department. It has been proposed that a continuation of this project should include a comprehensive medical interview and examination, and appropriate environmental investigations.

Blood changes in chemical workers.—A detailed analysis of changes in the blood of chemical workers was undertaken, with particular referenece to eosinophilia. Since so many chemicals were involved, however, it was not possible to reach any firm conclusions as to the agents that might have been responsible for the blood changes observed.

Oxides of lead manufacture.—A survey of the health and working environment of men employed in the manufacture of oxides of lead was completed. No case of ill-health due to lead poisoning was discovered but there was evidence that some workers were exposed to lead in quantities higher than those of recommended standards. It is proposed to repeat the survey later in 1962.

Development of methods for the estimation of phosphine.—Analytical methods, particularly related to estimations in connexion with the use of phosphine for fumigation of grain, are in progress.

Parasitology: Filariasis.—Investigations into the epidemiology and control of filariasis in New Guinea natives, conducted in association with the Department of Public Health of the Territory of Papua-New Guinea, are now in their third year. The programme is designed to select a routine method for the control of the disease, suitable for general use in the Territory. The control area, which has a population of about 1,000 in whom infection was high, is situated in the Finschafen sub-district. Dr. B. McMillan visited the area in September-October, 1961, for parasite estimations and the administration of a third course of diethyl-carbamazone, the drug under trial for controlling the disease. The microfilaraemic density in treated persons remains at a very low level and the local people continue to support the scheme. Blood sampling will be carried out again in October, 1962, but treatment will be withheld until the parasite density begins to rise. This is not expected to occur for about three years, though the position will require continuous surveillance.

In certain villages in Manus, which were surveyed last year, drug treatment was commenced in combination with mosquito control by residual spraying.

Miscellaneous parasites.—Study of blood and alimentary parasites of various animals was continued, including observations on *Leishmania* species in marsupials and in culture.

Preventive Medicine: B.C.G. and Leprosy.—An investigation was planned, in association with the Department of Public Health of the Territory of Papua-New Guinea, to determine the effect of B.C.G. vaccination on the incidence of leprosy.

Development of pre-school children.—Studies in the health and development of pre-school children, conducted in association with the Institute of Child Health and the Lady Gowrie Research Fellow, were continued.

Radiobiology: The work of the Radiobiological Research Unit, under the direction of Dr. P. L. T. Ilbery, was supported by the New South Wales State Cancer Council.

Mechanism of graft versus host reaction in radiation chimaerism.—Where the donor haemopoietic tissue in a primary radiation chimaera is of foetal origin, "adaptation" of the bone marrow for both donor and host type antigen has been demonstrated. Persistence of the phenomenon was tested by transplantation into a further generation of lethally irradiated host and donor type animals. Donor tissue from F₁ litters, one parent strain of which carried the T₆ marker chromosome, was used to enable recognition of donor material.

Two lines of radiation chimaeras have been followed to the third passage of donor haemopoietic tissue, through the incompatible host strain. At each passage, haemopoietic tissue was examined and shown to be donor tissue, by the presence of the marker chromosome in all cells. It was also possible to resuscitate lethally irradiated donor type animals (the unmarked component strain of the F₁ donor tissue) by transplantation of the donor tissue from each passage. Three host type mice surviving from the third passage, subsequently accepted skin grafts from both host and donor type animals, thus strengthening the evidence for the persistence of the phenomenon of adaptation. These animals were later passaged, and the donor tissue again observed to have persisted. These experiments have demonstrated the persistence of the phenomenon of adaptation of haemopoietic

tissue to both donor and host type antigens in transplantation to the third incompatible host. In these cases, the possibility that the donor material acts as a blood-forming transfusion, allowing a small number of host type cells to proliferate and form a host type isograft has been excluded.

Production of mouse strains.—An attempt is being made to produce sub-strains carrying marker chromosomes.

Very low temperature storage.—The viability of tissues stored at -196°C . was tested. Leukaemic cells stored for between $7\frac{1}{2}$ and 12 months, and bone marrow cells stored for 13 months, proved viable when given to host mice.

Radiouleukaemia.—Last year results were reported on cytogenetic examination for chromosome aberrations of mice considered to be in the pre-leukaemic phase. Scoring was continued and it was found finally that 17 of the 25 mice considered to be in the pre-leukaemic state showed some chromosome abnormalities. All the pre-leukaemic cells carrying abnormal chromosomes failed to transplant, with the exception of one case already reported, in which chromosome aberrations were present in bone marrow as well as in the thymus.

Tropical Medicine and Hygiene: *Health of plantation workers, British Solomon Islands.*—A study by Dr. R. H. Black included observations on the working conditions on coconut plantations, living conditions, disease patterns, diet, industrial hazards in the field and the mill and other workers. Advice directed towards the improvement of some of these was given in a series of monthly reports. The whole study was made within a framework of a social anthropological approach to the subject. Several papers are in preparation for publication based on results of this expenditure under the following titles: "The cuts of copra cutters"; "The house-groups of plantation labourers on a large coconut plantation"; "Heat hazard in a tropical agricultural enterprise: the hot air drying of copra"; "Christianity as a cross-cultural bond in the British Solomon Islands".

Goitre in New Guinea.—A goitre survey was carried out by Dr. W. B. Hennessy in the mountainous area to the north-east of Lae in the Territory of New Guinea. The highest incidence of goitre and the largest goitres were found at the headwaters of the rivers at highest altitudes and furthest from the town influence. The study was an assessment of the prophylactic effect of iodised oil previously given at an iodine depot by one of the medical officers of the Department of Public Health of the Territory of Papua and New Guinea some years before. A report is in preparation.

CONSULTATIVE AND ADVISORY SERVICES

The consultative service provided by the various sections of the School on their particular subjects has been widely used by Departmental institutions and by a wide range of Commonwealth and State departments, institutions and public authorities, individual doctors and others. Inquiries have continued to increase and in some sections must frequently be deferred on account of lack of staff to undertake requests requiring special surveys or investigations. Honorary consultant physicians' posts to various hospitals are also held by various staff members.

Consultative assistance has been afforded to a number of Commonwealth departments during this review period, including the Departments of Territories, Works, Postmaster-General and External Affairs. Requests for advice have also been received from Territory Administrations.

The Commonwealth Health Laboratories Consultant Service provides advice, as required, on pathology, bacteriology, biochemistry, parasitology and entomology, to the Commonwealth Health Laboratories. In recent years the work of the Health Laboratories has steadily increased in amount and complexity, due to the growing importance of clinical pathology in medical practice, and this has been reflected in the additional consultative assistance required.

Occupational Health Services: A full-time medical service at the Munitions Filling Factory, St. Marys, is directed and medical and nursing arrangements supervised at the Small Arms Factory, Lithgow, by the Occupational Health Section of the School. As well as providing for the health and safety of employees, these services also furnish a valuable adjunct to the teaching facilities of the Section.

The Armed Services have maintained close liaison with the School and requests for instructional and advisory services have been received from all three. Members of the School staff serve as consultants to the Army, some as serving officers, in tropical medicine, preventive medicine, environmental health, and other subjects. The Director is on the strength of Army Headquarters as Director of Army Health. Instruction is provided to local units and to individual members, whenever possible. Assistance has also been given in special investigational projects.

Association with a wide range of health agencies, and professional, educational and community bodies has been maintained. The Department and the School are widely represented on such bodies by the personal, and usually unofficial membership of staff members. As these are generally admitted for their professional qualifications, this necessary work tends to be particularly time-consuming for senior staff. The following are among the bodies on which representation is maintained in this way: The National Health and Medical Research Council (and its various committees); the National Radiation Advisory Committee; the Council of the Australian School of Pacific Administration; the New South Wales Board of Health; the Health Advisory Committee to the New South Wales Minister for Health; the Poisons Advisory Committee of New South Wales; the New South Wales State Cancer Council; the World Health Organization (Expert Committees on Malaria, Public Health Education, Occupational Health); a wide range of University of Sydney advisory, administrative and research bodies; the Board of Social Studies; the Advisory Committee on Radioactive Substances; the University Extension Board; the Post-Graduate Committee in Medicine; the Royal Australasian College of Physicians (Research and Editorial Committees); the Australian Medical Association (Occupational Health Committee); the Solar Energy and Tropical Housing Research Committee, University of Queensland; the Royal Institute of Health (New South Wales Division); the Australian Water and Sewage Treatment Association; the Standards Association of Australia; the Royal Society of Tropical Medicine and Hygiene (local secretary); the Nuffield Fellowship Advisory Committee; the New South Wales Ambulance Association; and various other scientific and charitable bodies and hospital boards.

GENERAL

The installation of the climatic chamber for the Environmental Health Section, which is essential for its basic research in climatic physiology, is not yet completed, and the recruitment of specialist staff proceeds slowly, due to special qualifications required. The current investigational programme of the Section, and the advisory and consultative services already provided, display its potentialities in regard to Australian development.

A small laboratory for the diagnosis of smallpox, where satisfactory isolation could be maintained, was provided at the Quarantine Station, North Head, by the Commonwealth Director of Health, Sydney, and has proved of value.

A special course of twelve lectures delivered to students for the Diploma in Public Health Engineering of the University of New South Wales by the Senior Lecturer in Medical Entomology was the first occasion on which the entomological aspects of sanitary engineering have been taught in Australia.

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THE ASSESSMENT OF THE THERMAL ENVIRONMENT. By R. K. Macpherson. *Brit. J. industr. Med* (in press).

HEALTH AND THE URBAN HOUSING OF INDIGENOUS PEOPLES IN HOT CLIMATES. By R. K. Macpherson. *Archit. in Aust.* (in press).

HUMAN CLIMATOLOGY AND AUSTRALIAN ARCHITECTURE. By R. K. Macpherson. [Proceedings of the Royal Australian Institute of Architects Convention, 22nd-25th May, 1962.] *Archit. in Aust.* (in press).

SKINFOLD THICKNESS IN RELATION TO BODY WEIGHT AND ARTERIAL BLOOD PRESSURE. By G. Palmai. *Med. J. Aust.* (in press).

POPULATION STUDIES IN ROOKERIES OF THE EMPEROR PENGUIN *Aptenodytes forsteri*. By G. M. Budd. *Proc. zool. Soc. Lond.* (in press).

INSTITUTE OF CHILD HEALTH

The Institute of Child Health is located partly in the School of Public Health and Tropical Medicine in the grounds of the University of Sydney and partly at the Royal Alexandra Hospital for Children.

The staff of the Institute conduct research and also co-operate in both undergraduate and postgraduate teaching, this co-operation being facilitated as the Director of the Institute is also Professor of Child Health in the University of Sydney.

Professor Stapleton and Dr. F. W. Clements are members of the Child Welfare Advisory Council of New South Wales. The Director is a member of the Special Committee set up by the Australian Paediatric Association to consider a higher qualification in Paediatrics, of selection committees for the Nestle Paediatric Travelling Fellowships of the Australian Paediatric Association, and of the Charles McDonald Mead Johnson Travelling Fellowship of the Australian Postgraduate Federation in Medicine, and the Mental Health in Childhood Study Group of the New South Wales Association of Mental Health.

The Director attended the Annual Meeting of the New Zealand Paediatric Society as overseas guest speaker as well as the conference of the Canterbury Mental Health Council which were both held in September, 1961. The Director also attended, as one of the two Australian representatives, a World Health

Organization Conference on Child Health and the School held in Manila in November, 1961. The Director represented the Department at the Inaugural Meeting of the Australian Medical Association in Adelaide in April, 1962.

A number of lectures and talks to outside bodies have been given by various members of the Institute staff.

RESEARCH

Rheumatic Fever: The long-term study of the effect of oral penicillin prophylaxis on children who have suffered from rheumatic fever continues and its effectiveness in preventing recurrences is confirmed. Since the commencement of this study in 1952, nearly 200 children have been included in the group. Many of the children originally enrolled in the study group are now reaching adolescence, but are still being seen regularly at the Clinic. The opportunity has been taken to observe a number of social, educational and adjustment problems relating to these patients. The children in the control group continue to be seen annually.

Hypothyroidism: The study of cretinism was continued. Seven children suffering from congenital non-goitrous hypothyroidism have been enrolled in the prospective study and their progress, both physically and mentally, is being observed. The study of antithyroid antibodies in these children, their mothers and their siblings is being continued. The method used is a modified tanned sheep cell agglutination technique.

Endemic Goitre: The studies of endemic goitre in Southern Tasmania were continued. In association with the Senior Medical Officer, School Medical Service, Tasmania, and a number of general practitioners, therapeutic trials with thyroxine and dried milk were carried out on some 200 children who had either a persistent goitre or a seasonal enlargement of the thyroid gland. The results were inconclusive and plans were made to repeat the investigation in the second half of 1962 using larger doses of thyroxine. Studies of thyroglobulin antibodies in sera from these children are being continued.

Goitre Survey in New Guinea: Assistance in the planning of, and in the chemical analyses associated with, a goitre study being carried out by Dr. Hennessy of the School of Public Health and Tropical Medicine was given.

Prematurity: The results of the study of premature babies with birth weights of 3 lb. or less was concluded and the results will shortly be ready for publication.

Urinary Tract Infections: The long-term follow-up of children with urinary tract infections was continued and a number of new patients were added to the study.

The Aetiology of Croup: An investigation into the possible viral aetiology of patients admitted to the Royal Alexandra Hospital for Children during 1962 with croup and related respiratory infections is being carried out.

Parent Education: The research initiated in 1960 on the determinants of participation and non-participation in discussion courses on child-rearing was completed and a report compiled. This was submitted for the Degree of Master of Science.

Neonatal Meningitis: A study of neonatal meningitis and its sequelae was made by the Medical Registrar to the Professorial Unit and assessments of the intelligence of some of these children were made.

Neonatal Hepatitis and Polycythaemia: A report is in the medical press on this subject discussing the possible relationship of neonatal hepatitis to materno-foetal transfusion, in collaboration with the Institute of Pathology at the Royal Alexandra Hospital for Children and the New South Wales Blood Transfusion Laboratories.

Chromosome Studies: A report was prepared and presented at the Annual Meeting of the Australian Paediatric Association on a patient with a self-perpetuating ring chromosome, which is an almost unique abnormality to be found in a mentally retarded child. Studies of the chromosomes in foetuses are being made.

Cardiac Surgery: Further instrumentation for cardiac surgery and diagnostic procedures was undertaken and modifications to the Ebsray R.A.H.C. Heart Lung Machines have been incorporated in models produced recently. Several items of electronic equipment have been constructed to specific requirements, namely a 6-channel recorder for use in the operating theatre, a 2-channel recorder for post-operative monitoring, a miniature pacemaker and an E.C.G. monitor. More recently an electronic stethoscope has been constructed with an outlet for connection with a phonocardiogram, and this is at present under trial.

Malignant Disease: A Tumour Study Group has been formed at the Royal Alexandra Hospital for Children to investigate problems in this field.

Institutional Care: A study into various aspects of care of infants and small children in an institution is being undertaken. A detailed survey is being made of the incidence of infections, cross-infections, activities (both mental and physical) of a group of children and their mothers, with a view to identifying possible ways of avoiding institutional care and improving it when it is necessary. In this study we have the co-operation of the School of Social Work at the University of Sydney.

The following persons have visited and spoken to the Institute staff and to the students:—Dr. Cicely Williams (Beirut); Professor W. B. Macdonald (Perth); Professor J. T. Rendle-Short (Brisbane); Dr. E. M. Darmady (England); Dr. Howard Williams (Melbourne); Dr. John Menkes (U.S.A.); Dr. Mary Crosse (England); Dr. Donald Buckle (W.H.O.); Dr. Joan Segall (U.S.A.); Professor B. S. Platt (England); Dr. Cecily de Monchaux (England); Dr. Lam Po Tang (Mauritius); and Dr. S. Dorairajan (India).

Library: Additional books and journals in the fields of child growth and development, child psychiatry and clinical paediatrics have been obtained with a view to making the Library more comprehensive.

PUBLICATIONS.

THE RESPONSIBILITY OF THE GENERAL PRACTITIONER FOR HEALTH EDUCATION OF THE PUBLIC. F. W. Clements (1961). *World Med. J.*, Vol. 8, p. 199.

SOME PROBLEMS IN THE COMMUNICATION OF PROFESSIONAL KNOWLEDGE TO THE PUBLIC. F. W. Clements (1961). *Aust. Dent. J.*, Vol. 6, p. 330.

THE HEALTH OF THE CHILD IN AUSTRALIA. F. W. Clements (1961). *Quart. Rev. Pediat.*, Vol. 16, p. 221.

A MINIATURE CARDIOSCOPE. V. Hercus, D. Cohen and E. C. Hulme (1962). *Med. J. Aust.*, Vol. 1, p. 44.

MALIGNANT DISEASE IN CHILDHOOD. D. Cohen and C. W. G. Lee (1961). *Med. J. Aust.*, Vol. 2, p. 1015.

THE EVALUATION OF ACCIDENTS TO CHILDREN. J. S. Cullen (1961). *Amer. J. Public Health*, Vol. 51, p. 990.

TRACING FAMILIES AND SECURING THEIR CO-OPERATION IN HEALTH STUDIES. P. E. Grave (1962). (In Press.)

A SELF-PERPETUATING RING CHROMOSOME. B. Turner, A. N. Jennings, Gesina M. den Dulk and T. Stapleton (1962). *Med. J. Aust.*, Vol. 2, p. 56.

POLYCYTHEMIA AND NEONATAL HEPATITIS. R. J. Walsh, R. D. K. Reye, and T. Stapleton (1962). *Arch. Dis. Childh.* (In Press.)

PAEDIATRICS, PSYCHIATRY, AND DELINQUENCY. T. Stapleton (1962). *J. Pediat.*, Vol. 60, p. 740.

SOME CLINICAL FEATURES OF JUVENILE RHEUMATOID ARTHRITIS. H. Walsh (1962). *Med. J. Aust.*, Vol. 1, p. 507.

QUARANTINE

ANIMAL QUARANTINE AND VETERINARY HYGIENE

Increased speed of travel, increased international trade and an increased diversity of products of animal origin intended for importation into Australia from overseas, have each brought with them an increased variety of problems for the animal Quarantine administration.

LEGISLATION

During the year amendments have been made to the Quarantine (Animals) legislation by Proclamations 69A, 70A and 71A of 13th and 20th July, 1961, and 10th April, 1962, respectively.

Proclamation 69A consolidated and revoked Proclamation 65A and Proclamation 67A and also introduced an amendment making it obligatory for horses, asses and mules to be consigned by a route which does not pass through the Suez Canal, a precaution considered necessary because of an epidemic of African Horse Sickness throughout the Middle East.

Proclamation 70A consolidated and revoked Proclamation 62A and Proclamation 68A and also introduced amendments to permit movement by air from New Zealand to Australia of meat and edible parts of animals and birds, and samples of fertiliser and stock feed of animal origin. This Proclamation also prohibited the importation from all countries excepting only Canada, New Zealand and the United States of America of milk, including dried or powdered milk, condensed or concentrated milk, milk albumen, cream and ice cream, unless special permission is granted by the Director of Quarantine for therapeutic purposes, but allowance was also incorporated in this Proclamation for a limited quantity of prepared infants food containing milk to be imported with infants arriving as passengers.

Proclamation 71A amended Proclamation 70A insofar as cattle hides are concerned and these may only be imported now from animals slaughtered for human consumption in certain countries, considered to be of low-risk in respect of Foot and Mouth Disease and specified as Canada, Fiji, New Caledonia, New Hebrides, New Zealand, Norfolk Island, the Republic of Ireland, the Territory of Papua, the Territory of New Guinea, Tonga, the United Kingdom of Great Britain and Northern Ireland, the United States of America or Western Samoa.

In addition to these amendments to the legislation, the Minister has permitted the movement of horses, poultry, dogs and cats from New Zealand to Australia by aircraft, provided such movement is made on an aircraft which flies only routes within or between the two countries; prior to this relaxation of Quarantine requirements, these animals could only be brought to Australia by sea vessel.

An Act, cited as the Foot and Mouth Disease Act 1961, assented to on 31st August, 1961, provides for compensation to owners in the event of an outbreak of Foot and Mouth Disease in the Australian Capital Territory or the Northern Territory. The States have each passed similar legislation or have taken steps towards doing so. This legislation is supported by an agreement between the Commonwealth and all States for the sharing, on a stock population basis, of the cost of eradication should Foot and Mouth Disease be introduced into Australia.

IMPORTATIONS SUBJECT TO QUARANTINE**Domesticated Animals:** Importations during the year comprised—

From—					Horses.	Dogs and Cats.
Great Britain	..	..	..	..	57	384
New Zealand	..	..	..	..	395	228
Total	..	..	..	..	452	612

Laboratory Animals: Recognised scientific institutions in Australia imported 84 small laboratory animals under Quarantine permits during the year. In addition the Commonwealth Serum Laboratories continued the importation of monkeys from Asia for use in the preparation of Salk Poliomyelitis vaccine, a total of 2,941 arriving by aircraft; on arrival these aircraft were carefully disinfected, cleaned and disinfected and all litter and waste was incinerated, as in previous years.

Zoological and Other Animals: A total of 182 animals were permitted to enter Australia for permanent Quarantine in registered zoological gardens and circuses. Consignments of queen bees and large numbers of aquarium fish were also imported, inspected for disease and when found to be healthy, were given Quarantine clearance.

Products of Animal Origin: In recent years, with a continuation of the total prohibition of importation for many species of animals, including all ruminants (cattle, sheep, goats, &c.) and pigs; the restriction on the importation of birds, including poultry, to those of New Zealand origin; the restriction on the places from which horses, dogs and cats may be imported to Great Britain, Northern Ireland, the Republic of Ireland, New Zealand and in the case of dogs and cats the Channel Islands as well; the marked movement in the animal Quarantine work is to problems associated with products of animal origin which represent a risk of introducing exotic animal diseases, as well as to problems associated with live animal imports.

Products of animal origin which are either prohibited from importation, or alternatively need animal quarantine clearance before importation is permitted, include such items as canned meats, products containing milk or egg, animal hides, and biological products intended for laboratory use or for therapy. Applications for permission to import such products are all carefully considered from the viewpoint of any risk they present of introducing to the livestock industry animal diseases, including such serious conditions as Foot and Mouth Disease of cloven-footed animals, Newcastle Disease of Poultry and Swine Fever.

A wide variety of such goods subject to Quarantine control were imported during the year including hides, skins, wool, sausage casings, canned meats and other foodstuffs of animal origin. Also there were small sample lines of several products admitted under conditions of strict Quarantine control, for examination and analysis by manufacturers investigating the practicability of marketing similar Australian-made products. After examination in this way, the samples have then been incinerated.

Biological Products: The implementation of Item 28A of the Third Schedule to the Customs (Prohibited Imports) Regulations was continued to give Quarantine control of imported therapeutic substances, such as sera, glandular extracts derived from animals and vaccines and a close liaison was maintained in this field with the associated sections of the Department, especially the Pharmaceutical Section and the National Biological Standards Laboratory. All applications for permission to import were carefully considered to ensure that there would be no risk of introducing diseases of animals, including exotic virus diseases. Where there was a significant Quarantine risk the importation was prohibited through the provisions of Quarantine Proclamation 6G, under which the permission of the Director of Quarantine is required before importation may be made of vaccines, cultures, viruses, disease germs or substances likely to contain disease germs or viruses.

The volume and variety of products in this category presented for consideration has increased appreciably in recent years.

EXPORTS SUBJECT TO QUARANTINE

The health certification requirements to be met with animals intended for export vary according to the dictates of the importing country for the type of animal concerned. Correspondence has been continued with prospective importing countries to ascertain full details of their current requirements in this regard, and when necessary, modifications to such requirements have been recommended to the prospective importing country, based on the relative animal disease-free status of Australia. In particular, it has been the policy of this Department to explain clearly that, despite the presence of Contagious Bovine Pleuro-pneumonia in Australia, the disease is endemic only in some areas confined to the north of the continent and to give assurance that cattle can be collected in the south and central areas of the continent with complete freedom from contact with this disease. However, despite such assurance some countries prohibit the importation of cattle while Contagious Bovine Pleuro-pneumonia is present on this continent and this disease remains the greatest impediment on the grounds of animal health to the development of a cattle export trade to some countries.

Some countries have restricted importation of pigs as a result of the occurrence and continued presence of Swine Fever in New South Wales. It is hoped that the strenuous efforts being made in that State to eradicate this disease will soon be successful.

The principal animal exports were—

Horses	..	..	..	..	..	..	..	618
Cattle	..	..	..	..	..	..	..	10,567
Buffaloes	..	..	..	..	..	..	..	92
Sheep	..	..	..	..	..	..	..	212,835
Goats	..	..	..	..	..	..	..	834
Pigs	..	..	..	..	..	..	..	142
Dogs and Cats	..	..	..	..	..	..	..	810
Poultry	..	..	..	..	..	..	..	1,175,519
Miscellaneous (including fish and birds)	..	..	..	..	..	..	..	46,394

Most of the cattle which were exported were consigned to Hong Kong and the Philippines for slaughter, but there were also exports for dairy and breeding purposes.

Malaya was again the principal importer of sheep for slaughter.

All exports were accompanied by health certificates issued by officers of the Animal Quarantine Service, together with appropriate certificates of testing for disease as specified by the importing country.

ANIMAL QUARANTINE STATIONS

At the States' capital cities ports, Animal Quarantine stations have functioned for detention of imported animals and, when needed in any State, for cattle undergoing Quarantine prior to export to Great Britain.

As a result of a survey, made early in 1962, on costs involved in all States for feeding animals held in Quarantine stations, it was found that current charges need not be varied at present.

MISCELLANEOUS QUARANTINE MATTERS

Increased attention has been given to the dissemination of clear advice on Animal Quarantine requirements. The legislation relating to Animal Quarantine has been consolidated to facilitate reference by all concerned in this field. In addition, a summary of the prohibitions and restrictions under the Quarantine legislation as at June, 1962, has been completed and widely distributed to Departments and overseas ports, for guidance.

Liaison has been maintained with both the Department of Customs and Excise and the Department of Immigration to ensure that pamphlets issued for persons coming to Australia clearly state the need to observe the requirements of Animal Quarantine; also to have such information translated into the appropriate languages. A circular published by this Department for issue with passports has been revised and now includes advice on Animal Quarantine. Suitable advice on Animal Quarantine requirements was included in pamphlets prepared for the guidance of overseas visitors attending the Empire Games in Western Australia.

Customs officers and Quarantine officers maintained close liaison at the ports and air-ports. Whenever risk items were detected they were seized and subsequently incinerated. Customs officers also continued their assistance in the control of pet animals on 1,043 overseas ships which visited Australian ports during the year.

CONFERENCES

In September, 1961, the Biennial Conference of Commonwealth and States Veterinarians, under the aegis of the Australian Agricultural Council, was held in Canberra with the Director of Veterinary Hygiene as Chairman. Conference considered legislative precautions designed to prevent the introduction of exotic diseases, and reviewed disease control measures in Australia.

The Biennial Conference was preceded by a meeting of the Chief Quarantine Officers (Animals) at which problems associated with Animal Quarantine legislation and administration were considered.

COMMITTEES CONVENED FOR SPECIFIC PURPOSES

In October, 1961, and February, 1962, the Director of Veterinary Hygiene attended, as representative of this Department, meetings of the Standing Committee on Agriculture and as a departmental adviser at the meeting of the Australian Agricultural Council held in February, 1962.

Arising out of the discussions at the Biennial Conference and subsequent meetings of the Standing Committee on Agriculture, a sub-committee was formed to consider the threat of possible screw-worm introduction to Australia from the North, and a further sub-committee was set up to consider problems which can arise from residues which may occur in meat from the use of modern pesticides. The Director of Veterinary Hygiene is a member of each of these sub-committees.

In November, 1961, a Consultative Committee on Swine Fever was convened in Melbourne by the Director of Veterinary Hygiene. It was attended by delegates from the State Departments of Agriculture in South Australia, Victoria, Tasmania, New South Wales and Queensland, the Commonwealth Department of Health, the Commonwealth Serum Laboratories and the Commonwealth Scientific and Industrial Research Organization. This meeting considered experience in Victoria where pigs, believed to be resistant to Swine Fever virus, had been detected on two properties, the progress in the eradication campaign being pursued by New South Wales, and technical details related to diagnosis, control and eradication.

As Chairman of the Cattle Tick Control Commission, the Director of Veterinary Hygiene conducted meetings in Lismore in July, 1961, Sydney in December, 1961, February and March, 1962, and in Brisbane in July, 1962.

HUMAN QUARANTINE

The Quarantine service authorized under the *Quarantine Act* 1908-1961 was maintained during the year ending 30th June, 1962.

With the increase in air traffic and the constant threat of the introduction of smallpox into Australia, the Quarantine Act was amended in 1961 to give Quarantine Officers full powers to inspect any vessel entering Australia and to conduct medical inspections and examinations of any or all persons travelling on the vessel at a place on or in the vicinity of the vessel.

Although no quarantinable disease was encountered during the year, a suspected case of cholera on the R.M.S. *Strathmore* (England to Australia via Suez and Manila) was notified prior to the arrival of the vessel at Brisbane in February, 1962.

Eighty-two passengers were released under surveillance and allowed to disembark at Brisbane.

As it was considered that the patient was too ill to be removed from the vessel at Brisbane, the *Strathmore* proceeded in quarantine to Sydney with the patient on board in strict isolation. A Quarantine Officer travelled on the vessel from Brisbane to Sydney.

On arrival at Sydney, the patient and contact were transferred to the North Head Quarantine Station.

Disembarking passengers (186 in all) were released under surveillance and allowed to proceed.

Every facility was provided at the Quarantine Station and specialists in the field of Tropical Medicine were called in to attend the patient. Despite active treatment, the patient died. A post-mortem examination revealed that death was due to portal thrombosis with massive liver infarct. There was no evidence of cholera.

Watch on Smallpox:—The quarantine service maintained the closest possible watch on all ships and aircraft reaching Australia during the outbreak of smallpox in Great Britain and West Germany. Strict observance was insisted upon the

requirement that everyone coming to Australia by air from overseas must be vaccinated, as well as all assisted migrants and other passengers on ships. No case of smallpox was detected by the Quarantine service during the outbreak. The Department was kept in close touch with the position in Britain and Pakistan, where the outbreak originated, by the Chief Commonwealth Medical Officer at Australia House, London, and the Australian High Commissioner at Karachi.

During March and April six Commonwealth medical officers were sent to India to gain first-hand knowledge of the diagnosis and treatment of smallpox. They visited Calcutta and then spent nearly a fortnight studying the disease at the Infectious Diseases Hospital at Madras.

It is essential that doctors associated with the Australian Quarantine service should be competent in the immediate diagnosis of smallpox. Since 1949, the Department has made a practice of sending small groups of doctors overseas periodically so that they can study cases in areas where the disease exists. In every instance they have received excellent practical training in diagnosis from courses of study arranged by the local authorities.

Assistant Director-General of Health, Dr. G. M. Redshaw, represented Australia at a seminar on smallpox organized by the Regional Office of the World Health Organization in India and Ceylon, in February, 1962.

TABLE I
Vessels Boarded and Cleared—1961-62

Port.	Surface.			Air.		
	Vessels.	Crew.	Passengers.	Vessels.	Crew.	Passengers.
Sydney	737	15,099	38,400	779	8,312	32,407
Newcastle	226	25,089	92	..	..	..
Port Kembla	121	20,046	26	..	..	..
Botany Bay	143	17,120	52	..	..	..
Coffs Harbour	1	26	..	..	..	..
Total (N.S.W.) ..	1,228	77,380	38,570	779	8,312	32,407
Melbourne	338	24,269	20,666	2	11	12
Geelong	222	10,030	95	..	..	..
Portland	3	154	..	..	..	..
Total (Victoria) ..	563	34,453	20,761	2	11	12
Brisbane	264	16,577	2,296	12	102	569
Bundaberg	1	14	..	..	..	..
Cairns	75	3,310	71	..	..	..
Gladstone	29	1,282	7	..	..	..
Mackay	12	450	1	..	..	..
Mourilyan Harbour	6	211	..	..	..	..
Rockhampton	4	204	1	..	..	..
Townsville	63	2,871	256	24	127	46
Thursday Island	31	1,087	1,120	..	..	..
Urangan	3	99	..	..	..	..
Amberley .. ..	..	..	..	42	280	319
Total (Q'ld.) ..	488	26,105	3,752	78	509	934

TABLE I—*continued*
 Vessels Boarded and Cleared—1961-62—*continued.*

Port.	Surface.			Air.		
	Vessels.	Crew.	Passengers.	Vessels.	Crew.	Passengers.
Port Adelaide ..	194	11,106	3,819	..	..	..
Port Augusta ..	5	202	..	..	..	..
Port Lincoln ..	29	1,270	7	..	..	..
Port Pirie ..	33	1,611	14	..	..	..
Cape Thevenard ..	6	187	1	..	..	..
Whyalla ..	1	50	..	..	..	..
Wallaroo ..	36	1,512	8	..	..	..
Total (S.A.) ..	304	15,938	3,849	..	..	..
Fremantle ..	636	67,820	116,889	..	..	..
Kwinana ..	182	9,380	..	..	..	..
Albany ..	57	2,631	37	..	..	..
Bunbury ..	49	2,114	60	..	..	..
Carnarvon ..	4	152	..	..	..	..
Derby ..	11	897	611	..	..	..
Esperence ..	14	689	32	..	..	..
Geraldton ..	75	2,935	84	..	..	..
Point Samson ..	13	683	154	..	..	..
Port Hedland ..	22	8,828	3	..	..	..
Wyndham ..	7	286	39	..	..	..
Yampi Sound ..	15	617	..	..	..	..
Perth ..	..	..	..	209	2,175	7,698
Total (W.A.) ..	1,085	89,032	117,909	209	2,175	7,698
Hobart ..	29	2,364	1,009	..	..	..
Bell Bay ..	14	776	..	..	..	..
Burnie ..	4	149	7	..	..	..
Devonport ..	2	37	..	..	..	..
Port Huon ..	1	65	..	..	..	..
Total (Tas.) ..	50	3,391	1,016	..	..	..
Darwin ..	44	1,443	35	1,349	10,833	50,030
Total All States..	3,762	247,742	185,892	2,417	21,840	91,081

TABLE II
 Infectious Diseases on Overseas Vessels arriving in Australia 1st July, 1961,
 to 30th June, 1962

Disease	No. of Cases
Bacterial Meningitis ..	1
Chicken Pox ..	102
Diphtheria ..	13
Gastro Enteritis ..	3
Infectious Hepatitis ..	6
Measles ..	48
Mumps ..	24
Rubella ..	37
Typhoid ..	1
Whooping Cough ..	1
	236

TABLE III
**Inspections and Examinations at Australian Ports Required under the
 Navigation Act 1st July, 1961 to 30th June, 1962**

Port.	Number of Vessels Inspected.			Number of Seamen Examined.
	Primary Inspections.	Annual Re-inspection.	Special Inspection.	
Sydney .. .. .	..	48	1	374
Newcastle	1	..	10	208
Melbourne .. .. .	..	..	24*	213
Brisbane	1	..	..	116
Cairns .. .. .	..	..	..	12
Townsville .. .. .	..	1	1	5
Port Adelaide	4	12	..	98
Port Pirie .. .. .	..	..	..	1
Port Augusta .. .. .	..	..	..	1
Whyalla	1	..	..	1
Fremantle	1	6	..	203
Hobart .. .. .	..	..	..	20
Launceston .. .. .	..	2	..	..
Devonport .. .. .	..	1	..	..
Darwin .. .. .	..	..	..	7
	8	70	36	1,259

* Only Medical and Hospital cabinets inspected.

PLANT QUARANTINE

Activities aimed at preventing the importation of plant pests and disease from overseas were maintained during the year. This included close quarantine supervision of plants and seeds restricted to importation as small quantities to keep out specified diseases and pests. Other imported plant and seed material, whilst not so restricted in quantity, was subject to quarantine check inspection on arrival. Plant quarantine activity extends to inspection of any material of plant origin, arriving either by sea or air, and this brings it in contact with innumerable trade transactions.

At the ports of entry in the States, officers of the respective State Department of Agriculture have continued to supervise plant quarantine activities on behalf of the Commonwealth. Amicable and co-operative relationships have continued between these Departments and the Commonwealth Department of Health. In the Northern Territory this Department has maintained an efficient vigil.

LEGISLATION

Four Proclamations made during the year related to plant quarantine activity within Australia. Proclamation 50P was a revision of 18P, whereby the movement of prescribed agricultural products within Australia was restricted. The control of the movement of citrus from north-western Australia was revoked in view of the fact that the appropriate authorities were satisfied that citrus canker had been eradicated from the Northern Territory as a result of action initiated in 1918. This Proclamation (50P) introduced quarantine control on the movement of rice from north-western Australia, which is defined as the Northern Territory plus that part of Western Australia north of latitude 26° S, to any other part of Australia, to protect the rice industry in southern Australia from specified disease and pests occurring in north-western Australia.

The discovery of the Sirex Wood Wasp in Victoria in December, 1961, necessitated the issuing of Proclamations 51P and 53P, defining the areas in eastern Victoria subject to Quarantine measures for the eradication of Sirex. With the finding of Sirex near Launceston, Proclamation 52P revoked Proclamation 49P and made coniferous plants in the whole of Tasmania subject to quarantine control.

IMPORTATIONS

There was a shortage of potatoes in the eastern States of Australia during the winter of 1961, when New Zealand had a surplus. Initially permission was granted for Australian processors, with facilities approved by Quarantine, to import potatoes from New Zealand for manufacturing purposes. Later in the season arrangements were made for bulk quantities, appropriately treated to prevent sprouting, to be imported through the port of Sydney for general distribution. In all, about 5,000 tons were imported.

Onions for culinary purposes were also imported in quantity (about 3,500 tons) from New Zealand. Careful quarantine scrutiny was maintained.

Several approaches were made during the year to import bulk quantities of seed of certain agricultural crops. This was motivated by the desire of interested parties to get a new crop or new variety established quickly. Plant Quarantine has consistently taken the view that primary industries such as cotton, linseed, maize, safflower, each of which were presented for special consideration during the year, can best be served ultimately by small importations from overseas which can be grown under strict quarantine supervision for the first season to ensure that no new disease is introduced to Australia. This policy is strongly supported by State Departments of Agriculture.

POLICY

The policy of regulating the importation of plants including bulbs, rose budding eyes, orchids, shrubs and trees continued. The total importations for the year were 151,966, compared with 390,288 in the previous year. The co-operation of virologists in the State Departments of Agriculture and at the Waite Agricultural Research Institute in screening imported commercial fruit varieties for virus whilst in post entry quarantine has continued. This specialized service merits acknowledgment.

Timber importations continued to assume a major role in plant quarantine activity at several ports. Large shipments came from Malaya, Borneo, and other sources in the region to the north of Australia. Certain consignments were found heavily infested with Ambrosia beetle and other timber pests. Fumigation with methyl bromide was ordered where necessary. Less than 1 per cent. of the timber imported from the South-East Asia region was ordered for treatment, but this small percentage taxed fumigation facilities in some instances.

CONFERENCES

In December, 1961, it was discovered that the Sirex Wood Wasp had become established in Victoria. It was first found in Tasmania in 1952. At a meeting of Ministers and representatives of all States with the Commonwealth Minister for Health, held in Canberra in February, 1962, a National Sirex Fund Committee was formed and a National Sirex Fund created, whereby the Commonwealth shared equally with the States as a group in providing £200,000. Private forest interests subsequently volunteered to contribute. The National Sirex Fund

is being administered by the Commonwealth Department of Health. The National Sirex Fund Committee is directing its activities in two spheres—one is survey and eradication and the other is research. There is a sub-committee for each of these two fields of activity. Representatives on these committees are drawn from Commonwealth and State Forestry Services, C.S.I.R.O., Waite Agricultural Research Institute and the Plant Quarantine Division of the Commonwealth Department of Health.

Early in June the Director of Plant Quarantine represented the Commonwealth at the Fourth Plant Protection Conference, held in Manila. Whilst in the region he visited Malaya for discussions with the Malayan timber authorities on the quarantine requirements and procedure for timber imported into Australia.

Representatives from the Division attended certain conferences organized by the C.S.I.R.O. Liaison Section, which were of particular interest to Plant Quarantine. These included the Third Plant Diseases Conference, the Biennial Commonwealth and State Entomologists' Conference and the conference of seed testing officers.

PUBLICITY

During the year a publication relating to the properties and uses of methyl bromide for plant quarantine purposes was released for general distribution. It was prepared primarily to assist Plant Quarantine Inspectors throughout the Commonwealth. Part II of "Plant Diseases In and Outside Australia", covering Fruit and Edible Nut Crops, was released for restricted distribution.

Plant Quarantine publicity was given added impetus with the introduction of new ideas. The displays at capital city shows were re-vitalized and the 1962 Sydney Royal Show witnessed the introduction of two cartoon characters, "Freda Fruit Fly" and "Sadie Sirex", with their message conveyed to the public by means of a special device known as "Videophone". Several new posters aimed at exhorting the public to help keep unwanted pests and diseases out of Australia were designed and released for general display throughout Australia. All the other many diversified channels and media, developed through the Plant Quarantine Publicity Campaign, were maintained throughout the year.

TERRITORY HEALTH

AUSTRALIAN CAPITAL TERRITORY

The administration of health services in Canberra and the Australian Capital Territory is a direct responsibility of the Minister for Health through the Department of Health.

The Department is called upon to perform certain duties which in the States would be carried out by local government instrumentalities.

The functions of the Department include: health inspections, the operation of the Canberra Abattoir, a health laboratory, the District Nursing Service, the School Medical Service, the School Dental Service, veterinary services and an immunization service.

HEALTH LABORATORY

The Health Laboratory provided full clinical and consultant laboratory services to Canberra and adjacent hospitals, and to private medical practitioners in the area.

The Laboratory also exercised technical control of the Red Cross Blood Transfusion Service, and carried out an extensive range of investigations in the public health and medico-legal fields.

The following table compares activities during 1961-62 with those of the previous year.

—	1961-62.	1960-61.
Total examinations performed	189,883	149,879
Total patients attended	56,127	45,897

TUBERCULOSIS CONTROL

The Chest Clinic transferred to the "old Motor Registration Offices" at Acton, adjacent to the Canberra Community Hospital.

A compulsory mass chest X-ray survey was carried out in March and April; 32,477 persons over the age of eighteen years were examined with the disclosure of 25 significant cases of pulmonary tuberculosis, of whom 22 were admitted to hospital. There were seven cases of lung tumour including five cases of cancer of the lung, one neurofibroma and one hydatid cyst. A further 81 persons required chest clinic supervision for "arrested" or "inactive" tuberculosis.

Over 300 reports were sent to private medical practitioners at the request of persons concerned relative to such other abnormalities as Bronchitis, Emphysema, Pulmonary Fibrosis, Pneumonitis and abnormalities of the heart, a number of which were already known to be present.

DISTRICT NURSING SERVICE

The District Nursing Service, functioning in co-operation with local medical practitioners, continued to play an important part in helping to deal with the problems of medical care in Canberra. Home visits increased from 12,026 in 1960-61 to 15,428 in 1961-62.

HEALTH INSPECTION

A staff of four inspectors was engaged upon public health inspections.

The following table shows the licences granted under the Public Health Ordinance compared with those of the previous year:—

	1961-62.	1960-61.
Prepared meat goods vendors	143	147
Ice cream vendors	10	12
Barbers' shops	42	44
Milk distributors	47	50
Milk shops	110	104
Eating houses	50	50
Meat vendors	38	34
Boarding houses	31	29

Samples submitted for analysis were: Water chemical, 235; water bacterial, 790; milk chemical, 205; milk bacterial, 376; sewage effluents, 13; meat samples, 9; and miscellaneous foods, 15.

Quarantine inspection of parcels arriving under bond at the Canberra Post Office was carried out by the inspection staff.

Cases of infectious and notifiable diseases notified were: Infantile Diarrhoea, 12; Infective Hepatitis, 240; Malaria, 1; Meningococcal Infection, 1; Ophthalmia, 11; Poliomyelitis, 2; Rubella, 24; Salmonella Infection, 3; Scarlet Fever, 10; and Tuberculosis, 39.

Legal action was taken in 27 cases for offences against the public health regulations.

CHILD HEALTH AND WELFARE

During the year the School Medical Service was expanded by the appointment in January, 1962 of a second medical officer and a second nurse. The new team worked for five months of this year on routine examinations in primary (and a few secondary) schools on the South Side of Canberra. The Senior School Medical Officer continued as before to supervise Infant Welfare work and carry out Triple Antigen Immunization. She was assisted by a full-time school nurse and a part-time nurse working in the immunization clinics.

Infant Welfare: Thirteen Mothercraft Centres and nine sub-centres are now functioning in Canberra. These are staffed by eight full-time and one part-time Triple Certificated Sisters employed by the Mothercraft Society.

During the year 3,587 individual children under two years attended the Baby Health Centres.

Visits to babies in their homes totalled 4,645.

Pre-School Children: Pre-school children requiring special investigation were examined.

School Children: The total number of children examined was 6,213.

Interviews with parents numbered 209.

Notification of defects was made in respect of the following conditions:—

Vision, 362; Hearing, 143; Nose and throat, 120; Other conditions, 84.

Children with hearing loss either of minor degree or not requiring medical treatment numbered 109.

An audiologist from the Commonwealth Acoustic Laboratories was available for consultation at Ainslie School at monthly intervals throughout the year.

A class for the special education of young deaf children was established at Ainslie School.

Immunization: Immunization sessions were held regularly at Baby Health Centres as in previous years, and have recently been extended to new suburbs. Those commencing courses of Triple Antigen numbered 2,255 and the majority of these were passed on to the Polio Clinic to begin courses there. Booster doses were given to 2,182 children in the age group eighteen months to twelve years. In all 8,235 injections were given at these sessions.

School and Pre-School Dental Service: The number of children examined and treated totalled 8,787. New clinics were opened at the Campbell and Downer Primary Schools.

Free Milk: Some 10,900 children attending 28 schools in the Territory each received one-third of a pint of milk a day. This milk was provided under the *States Grants (Milk for School Children) Act, 1950*.

Outdoor Recreation: The National Fitness Advisory Committee allotted the sum of £1,198 towards the cost of sports equipment, leader training and certain capital expenditure on buildings. A regular grant of £250 was allocated to the Department of the Interior towards the cost of conducting vacation play centres during January, 1962. A further sum of £750 was shared equally between the Y.W.C.A. and the Y.M.C.A. as a contribution towards the cost of supervisors of physical activities.

VETERINARY SERVICES

The activities of the veterinary service of the Commonwealth Department of Health within the Australian Capital Territory include the prevention and control of disease in stock; proffering advice to district stock-owners with field diagnosis on a herd or flock basis, supported by laboratory confirmation; the supervision of the hygiene of dairies and piggeries and the control of the Canberra Abattoir, an establishment where a full-time meat inspection service of high standard is provided.

Field and Laboratory Veterinary Service: Although the 2,832 points of rain recorded for the year exceeded the average yearly rainfall, estimated over a period of seventeen years, by 395 points, over half of the recorded rainfall was confined to November, December and January. The remaining months generally showed falls considerably below the monthly averages. This heavy summer rain resulted in a marked build up of haemonchus infestations in sheep, necessitating frequent drenching. With the approach of cooler, drier weather the infestation abated and fluke infestation became intensified, due to stock grazing close to watercourses and springs in search of green feed. Associated with the increased tendency towards fluke infestation there was an increased incidence of black disease. Failure of some graziers to vaccinate as a precautionary measure prior to expected outbreaks contributed to an increased incidence of this disease. With the approach of mid-winter, hand feeding of pregnant ewes was undertaken on many properties to supplement the dry feed available and as a precautionary measure against an expected high incidence of pregnancy toxæmia.

Advice was given to stock-owners on disease problems and autopsies and specimen examinations were carried out, either in the field or in the laboratory at the Australian Institute of Anatomy.

Radio broadcasts on subjects of topical interest to landholders in the Australian Capital Territory, including the photosensitization in sheep and sheath rot of wethers were given over Station 2CY and advice on correct poultry feeding was given through the columns of *The Canberra Times*.

Because of the presence of swine fever in New South Wales, determined efforts were made to investigate every swine mortality notified and histopathological examinations of brain tissue of suspicious cases were made. Additional information was obtained by forwarding appropriate specimens to the Veterinary Research Station, Glenfield.

Several cases of footrot and footscald in sheep were seen during the year. As on occasions both conditions are very similar and difficult to differentiate, and as it has been noted that footscald often precedes or follows an outbreak of footrot, similar control measures were adopted for both conditions, with regard to quarantine and treatment.

Stock Diseases: Diseases and conditions investigated during the year included mortalities or economic loss caused by the following:—

Diseases declared under the Australian Capital Territory *Stock Diseases Ordinance* 1933-1958—

Cattle: Actinomycosis, eye cancer, black disease, brucellosis, mastitis and blackleg.

Sheep: Contagious footrot and footscald, black disease, ovine brucellosis, and psorergates ovis, also lice and ked infestations.

Poultry: Infectious laryngo-tracheitis.

Pigs: Infectious pneumonia, enteritis.

Diseases and conditions not declared under the Australian Capital Territory *Stock Diseases Ordinance* 1933-1958—

Cattle: Footrot, bloat, liver fluke infestation, infertility, pink eye and calf diphtheria.

Sheep: Photosensitization, internal parasites including haemonchus, trichostrongyles, lung worm and liver fluke (both acute and chronic), foot abscess, phalaris poisoning, carbon tetrachloride and organic phosphorus poisoning and pregnancy toxemia.

Poultry: Avian monocytosis, leucosis, internal parasites, vitamin A deficiency and chronic respiratory disease.

Pigs: Malnutrition, middle ear infection, internal and external parasite infestations and intussusception of the small intestine.

Stock Movements: Vigilance was exercised over stock movements into and out of the Australian Capital Territory to safeguard against the spread of diseases. Health certificates were regularly issued for the movement of animals from the Australian Capital Territory both overseas and to other parts of Australia following examination of the animals or birds to ensure that the requirements of the receiving countries or States were met.

Routine Veterinary Services: Regular dairy inspections to maintain the standard of hygiene required by the Public Health (Dairy) Regulations were undertaken during the year. High standards of hygiene have no doubt contributed considerably to the low incidence of bovine mastitis in the dairy herds within the Australian Capital Territory.

Throughout the year 2,795 dairy stock were subjected to an intradermal tuberculin test. This included introductions of 18 cows and 24 calves. All cattle tested gave negative reactions. A total of 453 heifer calves were vaccinated with strain 19. With 178 of these calves the Commonwealth Serum Laboratories formulation was used in which 1 c.c. is injected subcutaneously as against the 5 c.c. dose.

Periodic inspection of all piggeries both in the Australian Capital Territory and immediately adjacent to its borders within the Pastures Protection District of Braidwood was undertaken during the year as a safeguard against the introduction of Swine Fever into the Territory.

Stock sales were attended and examinations made for the presence of notifiable diseases, particularly lice and ked infestations and footrot in sheep. A number of cases of eye cancer and actinomycosis was detected in cattle. These cattle were forwarded on an order for movement only to abattoirs for slaughter.

Canberra Abattoir: Canberra Abattoir is managed by the Commonwealth Department of Health through the Division of Veterinary Hygiene with a veterinary officer as Superintendent.

The Abattoir is operated on a solo system, under which the Department of Health supplies the facilities for the slaughter, dressing and chilling of animals for human consumption under hygienic conditions. Licences are granted to various operators to use these facilities by employing their own slaughtering staff. During the year 16 licences to slaughter at Canberra Abattoir were granted.

The Commonwealth staff consists of two meat inspectors, an engine driver, a boiler attendant, a by-products foreman, a chiller attendant, a caretaker and six slaughter house labourers. This staff, except the two meat inspectors, is employed for the processing of by-products, which include meat meal, blood and bone, tallow, horns, hair, sinews and glue pieces. Six of the licensed operators employ between them a permanent staff of twenty slaughtermen and labourers as well as five meat van drivers. The remaining licensed operators either slaughter and dress animals themselves or have one of the six operators employing staff to do so under contract.

Veterinary activity during the year, besides management and meat inspection supervision, included the use of abattoir facilities:—

- (1) To provide biological material for the National Biological Standards Laboratory, the Entomology Branch of the C.S.I.R.O. and the Australian National University, for the Departments of Microbiology, Zoology, Physiology and the John Curtin School of Medical Research.
- (2) For the C.S.I.R.O., Division of Plant Industry to complete an investigation into fat lamb raising in the Australian Capital Territory.

The year was one of increased activity at the abattoir. The number of licensed operators increased from 12 to 16 and the number of animals slaughtered rose considerably on the previous year.

The figures were—

Sheep and lambs ..	80,962, an increase of 12 per cent. on 1960-61
Cattle	7,158, an increase of 33 per cent. on 1960-61
Pigs	7,337, an increase of 35 per cent. on 1960-61

During the previous two years various projects were undertaken to expand the abattoir's capacity. The first half of 1961-62 was a period of consolidation, followed during the second half of the year by a rapid increase in the number of beasts slaughtered, as evidenced by the following figures:—

—		Sheep and Lambs.	Cattle.	Pigs.
July-December, 1961		38,180	3,114	3,735
January-June, 1962		42,782	4,044	3,602

There is every indication that this trend will continue.

NORTHERN TERRITORY

The task of providing a comprehensive health service for a small population widely scattered throughout a vast area continues to pose special problems for the Northern Territory Medical Service. In addition to these problems, the Service has to deal with an Aboriginal population to many of whom modern concepts of hygiene and sanitation are unfamiliar.

In the main centres, hospitals are maintained fully staffed by nursing sisters. The four major hospitals have full-time medical staff. The hospital at Batchelor is visited once a week by a visiting medical officer. A Leprosarium is maintained and there is a medical officer who devotes his entire time to this establishment and the problems of leprosy in the Northern Territory.

The outback is served by a Radio Medical Service operating from Darwin through Overseas Telecommunications Radio, and in Alice Springs over the Royal Flying Doctor Service network. Medical Officers of the Department are available at all times, day and night, to handle radio medical calls.

In cases where patients in the bush need hospital treatment, they are brought to departmental hospitals by air. Three De Havilland "Dove" aircraft are devoted entirely to the needs of those in remote areas. These aircraft are owned by the Department of Health and are staffed and serviced by Trans-Australia Airlines. In addition to emergency service, medical officers and specialists, nursing sisters, dental officers and health inspectors make regular visits to all areas.

The appointment of health inspectors specifically for the work in the field has been a significant step in a campaign to raise the standard of hygiene and sanitation throughout the less-developed areas of the Territory.

An intensive campaign of immunization against common diseases is maintained, largely through the efforts of survey sisters, who also pay particular attention to the problems of infant health.

A Schools Medical Service, based on Darwin, serves the entire Territory, and arrangements are under way to extend the specialized knowledge of the medical officer in audiometric testing to children at missions, settlements and pastoral properties throughout the Territory.

Situated, as the Territory is, in close proximity to highly endemic areas of malaria, particular attention must be paid to preventing the introduction of infected mosquitoes or human carriers. These precautions are also handled by quarantine staff. As there is still some endemic malaria in the Territory, an eradication programme was commenced, and it is hoped to achieve complete coverage of the affected areas within the next two years.

Infant Health sisters operate also in the main centres and district visiting is carried out in Alice Springs and Darwin.

AERIAL MEDICAL SERVICE

Activities continued to expand during the year. A major advance was the securing of the third De Havilland "Dove" aircraft (VH-DHK) which replaced a Drover formerly stationed at Alice Springs. As a result it has been found possible to increase the frequency of visits to major settlements in Central Australia.

Statistics are given below:—

	Darwin.	Alice Springs.	Total.
Number of Emergency Flights ..	188	Nil	188
Number of Routine Flights	112	82	194
Miles Flown	165,488	45,180	210,668
Hours Flown	1,273	379	1,652
Patients Carried	632	43	675

QUARANTINE

This year was the busiest on record for the Quarantine Service. Large numbers of passengers and crew required clearances through the port of Darwin.

Many travellers continued to arrive without valid certificates of vaccination, and during the year 770 vaccinations for smallpox and 80 for cholera were performed at Darwin Airport.

During the year it was found necessary to detain four people in the Quarantine Station owing to doubt as to their vaccination status. None of these developed any disease during their period of detention.

In 1961-62 there was the usual activity in the fumigation of timber and other items of plant origin arriving by ship from overseas.

The number of ships and aircraft cleared for the years ended 30th June, 1961, and 30th June, 1962, are shown in the following table:—

	Year.	Cleared.	Passengers.	Crew.
Aircraft	1961-62	1,347	50,138	11,592
	1960-61	1,263	47,764	10,699
Ships	1961-62	55	42	1,383
	1960-61	50	62	1,419

FREE MILK FOR SCHOOL CHILDREN

The Free Milk Scheme is now operating very satisfactorily, and fresh milk is available to practically every school in the Territory.

MILK SUPPLIES

The facilities of the fresh milk factory in the Darwin area continue to improve. The installation of a flash paturizer has improved the quality of the milk considerably.

The reconstituted milk factory in Darwin has been very satisfactory.

The goat dairy at Katherine is still operating on a very small scale.

The frozen fresh milk supply in Alice Springs is operating satisfactorily. It is kept under constant supervision by the Health Inspector. No bulk milk delivery is allowed, all deliveries being in tetra-pak containers. This milk is now being delivered to the Tennant Creek area also.

SCHOOL MEDICAL SERVICE

During the year 32 schools and pre-schools in the Territory were visited. The total number of children examined was 2,500.

The general standard of health is good. The main defect found was in relation to eyesight. The appointment of an ophthalmologist has greatly assisted in dealing with these cases.

HEALTH LABORATORIES

Darwin: With the growth of the Northern Territory population and the Medical Services, the work of the Laboratory has increased.

Investigation of bowel infections are an important part of this work. During the year various Shigella were isolated on 78 occasions from 48 patients. Of these patients 25 were aborigines. This reflects a fall in isolation from among the aborigines compared with the previous year, but no significant change in those among the white population.

Salmonella typhi was isolated from three patients during the year. Two phage types, D1 and E1 of this organism were found, indicating that all cases did not occur from a common source. The only other *Salmonella* isolated during the year was *Salmonella typhi-murium*.

A technique of Vi-antibody testing for typhoid diagnosis using red cells sensitized by Vi-extract is being used since the Vi-extract was made available by Commonwealth Serum Laboratories.

A second case of Melioidosis was found during the year. It is hoped to report this and the *M Ulcerans* cases found last year in the medical literature.

Investigations into the common causes of Aboriginal death continued. Such details as are known have been recorded on about 800 consecutive deaths since July, 1959. The pattern is becoming clearer than was formerly possible. As an example, 24 of the 800 aborigines died of cancer. The high incidences compared to the white population of carcinoma of the naso-pharynx and primary liver cell carcinoma previously commented on are still obvious in these figures.

Total number of patients for the year was	..	..	28,970
Total number of tests for the year was	..	..	56,223

Alice Springs: The work in the laboratory has approximately doubled during the year. The number of patients has almost doubled, and the pathology work sent to Animal Industry Branch has trebled.

The number of laboratory tests made during the year totalled 10,549.

HEALTH INSPECTIONS

Generally food premises are well maintained, under regular inspection.

With the advent of road house licences, a general improvement in the standard of accommodation and eating facilities is apparent.

WORK OF SURVEY SISTERS

With the exception of inaccessible areas in Arnhem Land, there are now no places where natives are living which are not being covered by survey work.

During the year, 61 stations and other places, such as police stations, were visited by the survey sisters, travelling singly or together by Landrover. This entailed more than 10,000 miles of travelling over some of the Northern Territory's most rugged and isolated roads.

NATIVE HEALTH

During the year progress continued to be made in establishing contact with natives in remote areas. Visits were paid also to smaller stations and settlements which are not served by air and must be visited by road, often in four-wheel drive vehicles.

Good progress was made in the leprosy control campaign, and the aboriginal's confidence in the Department continued to grow.

The campaign against Tuberculosis has also been stepped up. A large number of cases were brought to the main centres from remote areas for chest investigation. Many of these were follow-up examinations, and it is felt that the campaign against Tuberculosis is finding acceptance amongst the native population.

INFANT HEALTH CLINICS

The number of babies enrolled at Darwin Clinic during the year was 533 and at Alice Springs 212. The number of attendances at the Darwin Clinic was 11,651 whilst at the Alice Springs clinic the attendances numbered 2,630.

New centres were opened during the year at Bagot Subdivision and Bagot Reserve.

The general health of children under five years of age in the Darwin area is improving.

DENTAL SERVICE

Extensions have been made to the Darwin Clinic, which should result in that Clinic being far more functional than it has been in the past. In addition, a commencement has been made on renewing the equipment at both Darwin and Alice Springs with the latest type of dental equipment. A third surgery is to be equipped at Alice Springs Clinic.

During the year the Overland Mobile Dental Unit was equipped with Mobile Airtor equipment, a considerable improvement over the previous equipment used. Also, plans have been made to have properly equipped and air-conditioned Mobile Units constructed for this work. This will enable this Service to bring the advantages of modern dental treatment to people living in centres away from the two main centres of this Territory.

The total number of examinations carried out by the staff of the Darwin Dental Clinic, Alice Springs Dental Clinic, the Aerial and Overland Mobile Units and the School Clinics for the years 1960-61 and 1961-62 is shown below:—

	Darwin Clinic.		Overland Mobile.		Aerial Mobile.		Alice Springs.	
	1961-62.	1960-61.	1961-62.	1960-61.	1961-62.	1960-61.	1961-62.	1960-61.
Examinations ..	5,933	4,288	944	1,615	5,894	3,649	3,557	1,467

HOSPITALS

Darwin: The work of the hospital continued to increase during the year. A complete review of the hospital organization and requirements has improved its efficiency and facilitated detailed planning of the future hospital expansion.

The number of medical officers employed at the hospital did not increase during the year, but all normal in-patient and out-patient services were maintained. The appointment of Dr. W. H. C. Hughes as Ophthalmic Surgeon enabled the hospital eye clinic to be re-opened.

Alice Springs: The number of deliveries failed to reach the record figure of 1960-61. Nevertheless, the ratio of deliveries to population represents 41 per 1,000, which is twice the average for Australia. (These figures do not include aboriginal deliveries.)

Efforts are being made to persuade native mothers to attend for regular ante-natal examinations. Lack of ante-natal examination results in obstetrical emergencies which are never seen nowadays in more sophisticated communities.

COMMUNICABLE AND TROPICAL DISEASES

Ankylostomiasis: Alcopar continued to find good acceptance amongst Northern Territory aboriginals. The difficulties recorded from other States such as gastro-enteritis disturbances have not so far been a problem in the Territory.

Malaria: Only two cases of malaria were recorded during the year, as against 13 in the previous year. One of these was a malaria case which probably originated in the Solomon Islands. There was one indigenous case from Roper River. This was in an 11-year-old native child. Immediately the diagnosis was made, a visit was paid to the Mission, mosquitoes collected, available population seen and arrangements made to institute full-scale mass treatment. A mosquito survey for breeding grounds was carried out.

Leprosy: Seventy-five leprosy patients from 48 places were notified during the year. This is more than double the number located during the previous year. It is not thought that this reflects an increase in the disease; rather it reflects greater activity in regard to the leprosy control campaign. Co-operation of the aboriginal population continued to increase and many patients now present themselves voluntarily for examination. Difficulty in persuading sufferers to receive treatment, such as to enter the East Arm Leprosarium, is decreasing significantly.

Trachoma: The appointment of an Ophthalmic Surgeon has aided in coping with this disease. Six cases were reported during the year, as against 57 in the previous year.

Tuberculosis: With the setting up of the Tuberculosis Register in the Territory, a more satisfactory system of control has been possible. The number of cases shown on the Register at 30th June, 1962, was 44 Europeans and 131 Natives.

Typhoid: There were four proven cases of typhoid fever during the year. One of these was from Bathurst Island. The patient had resided in Darwin for some time. The others occurred at the Oenpelli Mission. The cases from Oenpelli all occurred during March, 1962. The settlement was placed under quarantine, a survey sister from the Department was sent to assist the nursing staff and health inspectors visited frequently to advise and assist in sanitation measures. Mass immunization of all at Oenpelli was carried out and no further proven cases occurred. A search was made for a possible carrier in the Darwin area, but without result.

TOTAL SALK ANTI-POLIOMYELITIS INJECTIONS GIVEN IN THE YEAR 1961-62

The following table sets out the number of Salk injections given to residents of the Northern Territory in 1961-62:—

	1st Injection.	2nd Injection.	3rd Injection.	Total.
Darwin	1,241	1,017	1,417	3,675
Alice Springs	515	374	839	1,728
Tennant Creek	42	22	78	142
Katherine	85	87	41	213
Total	1,883	1,500	2,375	5,758

As a result of the intensive campaign carried out in 1960-61 there were fewer persons requiring injections of Salk anti-poliomyelitis vaccine during the year 1961-62.

NOTIFIABLE DISEASES

The following table shows the diseases notified in the financial year 1961-62 as compared with 1960-61:—

CENTRE OF NOTIFICATION

	Darwin.	Alice Springs.	Katherine.	Tennant Creek.	1961-62.	1960-61.
Acute Rheumatism	3	4	..	..	7	7
Ankylostomiasis	164	..	9	..	173	252
Amoebiasis	2	..	..	..	2	1
Breast Abscess (occurring within 6 weeks of childbirth)	1	..	..	..	1	..
Chorea (St. Vitus' Dance)	2	1	..	..	3	3
Diarrhoea (Infantile)	29	113	17	5	164	392
Dysentery (Bacillary)	35	20	..	1	56	52
Infective Hepatitis	44	14	10	19	87	43
Leprosy	72	..	3	..	75	36
Malaria	2	..	..	..	2	14
Mastitis (occurring within 6 weeks of childbirth) .. .. .	..	2	..	..	2	..
Meningococcal Infection .. .. .	..	1	..	..	1	2
Ophthalmia .. .. .	..	1	..	..	1	10
Pleural Effusion	4	..	..	..	4	1
Poliomyelitis	1	2	..	..	3	4
Puerperal Fever .. .. .	..	3	2	..	5	2
Rubella	1	3	5	..	9	1
Salmonella Infection (other than Typhoid Fever)	1	..	..	..	1	5
Scarlet Fever .. .. .	..	1	..	..	1	1
Tetanus .. .. .	..	1	..	..	1	..
Trachoma	5	1	..	..	6	57
Pulmonary Tuberculosis	28	12	..	..	40	45
Non-pulmonary Tuberculosis	9	..	..	..	9	13
Typhoid Fever	4	..	..	..	4	5
Syphilis	4	..	1	..	5	3
Gonococcal Infection	20	43	5	..	68	25
Non-specific Urethritis	8	12	..	..	20	14
Yaws .. .. .	..	1	..	..	1	1
Totals .. .. .	..	..	..	..	750	992

HEALTH SERVICES PROVIDED AT MAIN NORTHERN TERRITORY HOSPITALS

	Darwin.		Alice Springs.		Katherine.		Tennant Creek.		Batchelor.	
	1960-61.	1961-62.	1960-61.	1961-62.	1960-61.	1961-62.	1960-61.	1961-62.	1960-61.	1961-62.
Total number of daily occupied beds	73,879	77,069	28,621	31,567	8,227	7,510	3,057	4,408	..	..
Total number of admissions	4,934	5,062	2,644	2,381	600	581	410	618	..	..
Average number of daily in-patients	202	219	78	86	24	21	8	11	..	..
Total number of births	631	647	244	225	62	47	51	45	..	..
Total number of deaths in hospital	81	98	73	67	24	16	9	11	..	..
Total number of post-mortem examinations	82	96	22	29	22	15	12	14	..	..
Total number of major operations	400	455	177	146	..	..	2	..	..	..
Total number of minor operations	1,863	1,729	403	492	107	68	82	60	..	967†
Total number of out-patients treated	48,808*	67,505*	14,148	15,537	4,168	4,975	5,741	6,989	750†	4,139‡
Dispensaries—										
Prescriptions dispensed	19,323	20,004	6,618	8,163	11,921	11,471	1,946	2,577	..	..
Daily average of prescriptions dispensed per working day	77	81	25	31	38	40	5	7	..	..
X-ray Department—										
Number of examinations	8,806	7,340	2,816	3,442	663	289	368	265	..	..
Number of exposures	14,376	11,991	4,075	5,392	813	376	496	329	..	..
Ambulance Services—										
Number of trips	1,938	1,648	596	397	151	103	60	79	..	..
Number of patients carried	1,785	2,074	476	429	205	132	66	88	..	..
Number of miles travelled	20,295	23,360	15,412	14,942	13,666	15,063	8,670	9,943	..	..
Physiotherapy Department—										
Number of patients	822	660	944	365	..	..	..	..	..	..
Number of treatments	3,594	3,170	4,526	1,527	..	..	..	..	..	..

Darwin Hospital
Batchelor Hospital

* These figures include Bagot Hospital.
† Out-patients seen at the Doctor's Clinic.
‡ Out-patients seen at the Daily Clinic.

COMMONWEALTH LABORATORIES

COMMONWEALTH X-RAY AND RADIUM LABORATORY

The Laboratory was established, as The Commonwealth Radium Laboratory, in 1929 and has since that time served as a national centre for radiological physics.

The functions of the Laboratory were extended to include the physical aspects of X-ray therapy in 1935, when it became The Commonwealth X-Ray and Radium Laboratory, and of X-ray diagnosis in 1939. In 1946 the Laboratory imported the first artificially-produced radioactive isotopes used in Australia and established a system for the procurement and distribution of these substances. Procurements, whether for medical, research or industrial purposes, were undertaken by the Laboratory until 1st July, 1961, but since that date the Laboratory has been responsible for the procurement of isotopes for medical and medical research purposes only.

The specialized resources of the Laboratory and its facilities are available to all who work with ionizing radiations.

RADIUM SERVICES

In 1928, on the recommendation of the Director-General of Health, the Commonwealth Government purchased ten grams of radium for use in Australia in the treatment of cancer. The Laboratory is the custodian of this radium and maintains a central reserve of the national radium holding.

Radium in the form of needles, tubes and plates is made available on loan to approved hospitals, subject to an agreement between the Department and the management of the hospital concerned. Commonwealth radium is on loan to centres as distant as Fiji.

The Laboratory holds a Secondary International Radium Standard, issued by the International Radium Standards Commission in 1928. Against this standard the Laboratory has calibrated a number of sets of working sub-standards which are on loan to centres in Australia and New Zealand. These sub-standards are used for the measurements of radium and radon activity. Their use ensures that all such measurements are made in terms of the same ultimate standard.

Statistical data of the Radium Services of the Laboratory are presented in Table 1. Corresponding data for the previous year are included for comparison.

RADON SERVICES

The radiations effective in radium therapy are the beta and gamma rays emitted by radium B and radium C. Radon, the gaseous decay product of radium, also produces radium B and radium C and can therefore be used in place of radium. This substitution has a number of practical and economic advantages.

Soluble radium for radon production is held by the Laboratory, by the Bureau of Physical Services, New South Wales, and by the Department of Physics, University of Queensland. Radon is regularly prepared at these centres in a variety of containers. The Laboratory supplies radon for use by approved hospitals and approved private practitioners in Victoria, South Australia, Tasmania and Western Australia. It will supply radon to centres in other States if the need arises.

Until a few years ago, radon held an important place in industrial radiography by reason of its low monetary value and the small size of the highly active sources which can be prepared. At the present time artificial radioisotopes such as cobalt-60 have largely replaced radon. In the year 1961-62, no radon was issued by the Laboratory for industrial radiography.

Radon has been supplied to the Cancer Institute Board of Victoria (81 millicuries) and to the School of Civil Defence at Macedon, Victoria (360 millicuries), for use in research and instruction respectively.

Radon has also been supplied by the Laboratory to the Australian Atomic Energy Commission as the procuring authority for radioactive materials intended for non-medical applications. This radon (1,003 millicuries) has been supplied through the A.A.E.C. to the Bureau of Mineral Resources, Geology and Geophysics for use in calibrating airborne scintillometers; to the Postmaster-General's Department for use in tracing leaks in buried telephone cables and to an oil company for testing pipe lines.

As radon decays with a half-life of 3.825 days, the total amount of radon purified always exceeds that at the time of use.

Statistical data on the Radon Services of the Laboratory are given in Table 2. As the Radon Services in New South Wales and Queensland use radium made available to them from the national holding, statistical data on the Radon Services in those States are included in this Report in Table 3. Corresponding data for the previous year are included in this Table for comparison.

The total activity of the radon issued by the Laboratory in the year 1961-62 for medical purposes in the form of needles, gynaecological tubes and capillary for implantation or construction of surface moulds was 28,906 millicuries, of which 22,989 millicuries were issued to hospitals and 5,917 millicuries to approved private practitioners. The corresponding figures for the year 1960-61 were 27,247, 20,311 and 6,936 millicuries respectively. The total activity of radon issued for medical purposes in these types of containers during the current year represents an increase of approximately six per cent. over the issues for the year 1960-61.

Operations with Precious Metals and Other Construction Work for the Radon Services: Radon issued in Australia and New Zealand for medical purposes is prepared in capillary tubing of pure gold. Many radon containers consist of gold tubes, of various diameters and lengths, containing this radon-filled capillary. The Laboratory constructs all the gold tubing used in the various radon services in Australia and in the Dominion X-Ray and Radium Laboratory, Christchurch, New Zealand. During the year 1961-62, approximately 1,474 feet of gold

tubing of all types was constructed—an increase of approximately 11 per cent. over the previous year. The distribution, to the various centres, of tubing constructed during 1961-62 is set out below.

GOLD TUBING ISSUED TO RADON CENTRES 1961-62

Radon Centre.	Gold Capillary. 0.3 mm. Pt. eq.	Gold Capillary. 0.5 mm. Pt. eq.	Gold Casing for Needles. 0.8 mm. Pt. eq.
	(ft.)	(ft.)	(ft.)
Melbourne	746½	Nil	4
Sydney	85½	58½	5½
Brisbane	Nil	572½	Nil
Adelaide	Nil	Nil	1½
Total 1961-62	832½	630½	10½
(Total 1960-61)	(715½)	(577)	(17½)

In addition, twelve nasal applicators were constructed.

X-RAY SERVICES

The functions of the Laboratory include the physical aspects of the use of X-rays in treatment and in diagnosis. These activities are reported separately under the appropriate headings.

X-ray Therapy: The Laboratory maintains the Australian free-air standard chamber for the precise realization of the roentgen. The portable sub-standard dosimeters used by the local physical services in each State are calibrated by reference to this standard.

Work on the comparison of the Laboratory free-air standard with the transfer chambers made available by the National Bureau of Standards, Washington, D.C., United States of America, has been completed, with satisfactory results.

The calibration of dosimeters is not restricted to those owned by the local physical services; privately-owned dosimeters are calibrated by arrangement. The Laboratory may also repair sub-standard and other dosimeters when necessary. Seven dosimeters have been calibrated in the past twelve months.

Seven calibrations of deep-therapy equipment, and nineteen of superficial-therapy equipment have been made by the Laboratory. Radiographic examinations of the fields of all new treatment cones supplied with therapy equipment is a routine test.

Investigations of physical aspects of radiotherapy are carried out in close association with the Radiotherapy Advisory Committee of the National Health and Medical Research Council.

Four samples of biological materials have been irradiated, three for the Department of Zoology, University of Melbourne and one for Carlton and United Breweries Ltd.

X-ray Diagnosis: Many physical problems arise in diagnostic radiology. There is, for example, the need to determine the relative efficiency of items of accessory equipment, photographic emulsions, intensifying and fluoroscopic screens, viewing boxes and scattered-radiation grids. In many cases suitable physical methods have to be devised.

The need to keep to a minimum the exposure dose received by patients undergoing necessary radiological investigations is clearly recognized. The Laboratory is frequently consulted on methods of reducing this dose while still maintaining radiographic and fluoroscopic images of good diagnostic quality. Investigations of radiation dose to patients have been continued in association with the Medical Radiation Committee of the National Health and Medical Research Council and during the year appropriate measurements were made on four installations. (See also Radiation Protection Services.)

In view of the increasing tendency to use tube voltages above 100 K.V.P. for routine diagnostic radiology, it is necessary to undertake physical investigations in this field. A modern X-ray unit (150 K.V.P., 300 mA) is maintained for this purpose at the Laboratory.

The Laboratory carried out the first developmental work on miniature radiography in Australia and maintains a pilot plant so that investigations in this field may be continued.

By arrangement with the Australian College of Dentistry, an encephalometer unit is maintained at the Laboratory. This device is so designed that posterior-anterior and lateral radiographs of the skull, taken at intervals over a period of years, may later be superimposed accurately, thus enabling investigations to be made of the growth of facial bones. The Laboratory has continued to co-operate with the Department of Anatomy in the University of Melbourne in such a project and during the year 259 patients have been radiographed. The encephalometer is available by arrangement to orthodontists in private practice and 362 patients were examined in the year. The corresponding numbers in the previous year were 208 and 320 patients respectively.

Advice on the purchase of new equipment for hospital departments and on the condition of existing equipment is frequently sought from the Laboratory by State Governments and by hospital authorities. The Laboratory undertakes acceptance tests on new equipment when requested. Assistance has been given to the Department of External Affairs in purchasing X-ray equipment of Australian manufacture for export under the Colombo Plan.

ISOTOPE SERVICES

The functions of the Laboratory include the procurement and distribution of radio-isotopes. Stable isotopes are also obtained as occasion requires.

The Commonwealth Department of Health and the Australian Atomic Energy Commission have agreed on a re-distribution of activities previously carried out by the Department of Health through this Laboratory. The operative principle of the present arrangement is that radio-isotopes required for medical use and medical research are procured and distributed by this Laboratory and that radio-isotopes required for non-medical use are procured and distributed by the Australian Atomic Energy Commission. This arrangement became effective from 1st July, 1961.

As part of this arrangement the Department of Health, through this Laboratory, is informed by the Australian Atomic Energy Commission of all orders for radio-isotopes received by the Commission. These orders are filled by the Commission only after receiving a "clearance" from the Laboratory indicating that it does not object to the supply of the material for the stated purpose. During the year ended 30th June, 1962, 760 such "clearances" were issued.

Before 1st July, 1961, the Laboratory had been responsible for the procurement and distribution of all radio-isotopes used in Australia. As there were a number of orders still outstanding for radio-isotopes to be used in non-medical work it was agreed with the Australian Atomic Energy Commission that the Laboratory should complete the necessary action on these. It is for this reason that the identifying letters NM (non-medical use) appear in Table 5.

The importation of radio-isotopes into Australia is restricted under the Customs (Prohibited Imports) Regulations. Approval for importation is now given either by the Director-General of Health or by the Australian Atomic Energy Commission, depending on the category of use, after it has been established that the isotope will be used safely and usefully.

Isotopes used in Australia for medical diagnosis, treatment and research are obtained mainly from Britain, Canada, and the United States of America. Some radio-isotopes have also been obtained from the Australian Atomic Energy Commission. Some special materials have been obtained from France, Holland and Israel.

In the twelve months ended 30th June, 1962, 987 shipments (of which seven were of stable isotopes) including 37 different isotopes and a large number of compounds have been procured and distributed by the Laboratory. Of these, 47 shipments including five different isotopes were received from the Australian Atomic Energy Commission. Statistical data on the isotopes procured and issued, and on their field of application, have been collected in Tables 5, 6 and 7.

Table 6 shows the quantities of radio-isotopes issued during the year by the Laboratory for medical use in therapy and diagnosis. The Committee on Radio-Isotopes of the National Health and Medical Research Council co-ordinates medical use of radio-isotopes in Australia.

Radio-isotopes required for medical purposes are, in general, obtained in bulk supplies, some of which are dispensed at the Laboratory into smaller amounts before distribution for diagnostic or therapeutic use on particular patients at specified times. In the year 1961-62, 11,227 such issues were made. This represents an increase of 29 per cent. over the corresponding number (8,693) for the previous year. Under Section 100 of the National Health Act, these radio-isotopes, with the exception of yttrium 90, were made available free of charge to all classes of patient.

In addition to the radio-isotopes procured specifically for medical purposes (as listed in Table 5) occasional issues of radio-isotopes for research purposes have been made at cost from bulk supplies imported primarily for medical use. This procedure has enabled groups requiring these materials for research to obtain them at a lower cost and with less delay than would have been occasioned by specific importations on their behalf.

RADIATION PROTECTION SERVICES

The expanding use of radiation and radioactive substances in medicine, research and industry and consideration of possible public health problems arising from these uses have resulted in an increased work-load for the various protection services of the Laboratory.

The services of the Laboratory have been freely available to those undertaking the design and construction of facilities in which sources of radiation are

to be used. During the year specifications of the requirements for adequate protection against ionizing radiation were prepared for fourteen medical X-ray departments, and for one industrial and one research establishment.

In addition to the work in radiation protection design, the Laboratory has been called upon to assess, by site monitoring, the degree of radiation protection provided in an installation and to evaluate the safety procedures in use. In the year 1961-62, 59 such radiation surveys were carried out in nine medical X-ray departments, 42 dental X-ray installations, one veterinary department, four industrial and three research facilities.

At the request of the Tasmanian Branch of the Australian Dental Association, an officer of the Laboratory undertook a survey of 39 dental X-ray installations owned by members of the Branch in various parts of Tasmania.

Aprons and gloves made of lead-filled rubber or plastic are used in radiology to reduce the levels of radiation dose of those occupationally exposed to radiation. Such articles are frequently sent to the Laboratory by local manufacturers and X-ray firms for inspection for flaws and measurement of lead-equivalent thickness in order to ensure compliance with recognized standards. During the year 50 samples were tested.

Work is proceeding on a project to enable the accurate measurement of low concentrations of radon in air.

For more than 30 years, the Laboratory has provided a film-badge monitoring service through which the radiation dose received by those occupationally exposed to external radiation may be assessed. This service has been modified from time to time according to requirements.

The Laboratory issues, on loan to institutions who wish to use the service for their employees, metal film-holders (badges) of special design. These holders contain filters so arranged that an exposed film may show seven different areas of absorption or backscattering of the incident radiation. A measurement of the photographic blackening on all or some of these seven areas permits accurate assessment of the nature and quantity of the radiation received.

Under existing procedures, the Laboratory issues, at fortnightly intervals to all those registered in the service, the special films which are to be worn in the film-holders. Upon their return, after being worn for a working period of two weeks, the films are processed under standard conditions and the radiation dose assessed against "standards" prepared in the Laboratory. A report is issued to the employer in each case. In addition the Laboratory maintains a cumulative record of the radiation dose received by each individual. The service is available to all radiation workers; the only charge made is that (at cost) for the films issued.

The number of institutions registered in the film-badge service rose from 258 at the beginning of the year 1961-62 to 312 at the end of the year. The number of films assessed in the year 1961-62 was 31,118, compared with 26,238 for the year 1960-61.

It should be noted that the increase in the number of radiation workers now covered by the film-badge service of the Laboratory is not truly reflected by a comparison of the figures for the years prior to 1960-61 with those of subsequent years. Prior to the 5th September, 1960, films were worn for a period of

one working week. With the operation of a modified service from this date, the period of wearing the films was extended to two weeks, except in a few instances where experience had shown that higher radiation levels were possible. In fact, there was an almost two-fold increase in the number of persons using the film-badge service at the end of year 1960-61 as compared with the end of the previous year and a further increase of 18 per cent. has occurred in the year 1961-62.

At the present time the film-badge service operated by the Laboratory is receiving films for assessment and report from centres in all States of Australia, in the Australian Capital Territory and in the Northern Territory. Some of these centres have been directed to the Laboratory by State authorities who are at present unable to provide or expand their own services.

During the year, officers of the Laboratory co-operated with officers of the Australian Atomic Energy Commission and of the Commonwealth Department of Works in an investigation of the radiological safety of uranium mines.

In addition to the specific activities mentioned above, the Radiation Protection Services of the Laboratory have been called on for advice and assistance by a large number of Commonwealth and State Departments and instrumentalities, by various Hospitals, by Universities, by industrial and research organizations and by private radiologists, other medical practitioners and dentists.

The Assistant Director of the Laboratory attended the International Training Course in Radiation Health and Safety held at the National Institute of Radiological Sciences in Chiba City, Japan, from 24th October to 21st November, 1961. The course was jointly sponsored by the World Health Organization and the International Atomic Energy Agency.

RADIOCHEMICAL AND LOW-LEVEL MEASUREMENT FACILITY

In its report of July, 1959, to the Prime Minister, the National Radiation Advisory Committee recommended the establishment, at the Laboratory, of a low-level radiochemical facility. This facility was completed during the year. The facility was set up to permit radioactive assay of various radioactive substances present in minute amounts in environmental samples such as water and soil, in foods such as milk, grain, &c., in biological material such as human bone tissue and industrial effluent. The programme of work includes the routine assay for strontium-90 of public water supplies, of milk, of human bone tissue and of monthly fall-out collections made by the Australian Atomic Weapons Trials Safety Committee.

A major difficulty in these assays is the determination in the samples of natural (non-radioactive) strontium which is present, in many cases, with large amounts of calcium. Ordinary chemical procedures are of no value. The problem has been solved by a method using the atomic absorption spectrophotometer.

For the measurement of beta-ray-emitting samples of low radioactivity, the special steel "castle" designed and constructed in the Laboratory has proved very satisfactory.

Upon the completion of the radiochemical laboratory early in the year, analytical methods for the measurement of the strontium-90 content of ashed biological samples were tested. These procedures were found to be satisfactory and 31 samples were analysed during the year.

Other tests were developed for assaying iodine-131 in food and biological materials and 126 samples were analysed during the year.

The Laboratory has continued to co-operate with the Australian Atomic Weapons Tests Safety Committee in its Australia-wide monitoring of radio-activity arising from global fall-out. As part of this assistance, in the year 1961-62, 1,748 samples of various materials were ashed and compounded for radio-chemical assay. Some of the ashing was carried out by an officer of the Laboratory using a furnace provided for the purpose by the Defence Standards Laboratories, Department of Supply. A furnace installed by the Laboratory in its own premises has also been used and 1,264 bone tissue samples were ashed in it during the year.

ADVISORY SERVICES

The Laboratory provides advisory services on physical problems arising in the use of X-rays and radioactive substances.

The library service covers a wide range of current journals and provides for the indexing of the more important papers essential to the work of the Laboratory.

The Laboratory is frequently consulted on specific problems by hospitals, by research groups and industrial organizations, and by Commonwealth and State Departments. This consultative work is an import function and continues to make considerable demands on the time of the staff and the facilities of the Laboratory.

The Laboratory has for many years been associated with the Colombo Plan. Under this Plan equipment is supplied to countries of South-East Asia and people from those countries receive training in Australia. In November, 1961, Mrs. A. Reyes, chemist, and Mr. G. Bantugan, physicist, came to Australia as Colombo Plan Fellows from the Philippines and were attached to the Laboratory to obtain training and experience in low-level radio-chemistry and the assay of radioactive materials of low activity.

Under the Colombo Plan Training Scheme, the Laboratory has also been responsible for placing trainee radiographers in the X-ray Diagnostic and Radiotherapy departments of a number of hospitals. The progress of these trainees has been observed by the Laboratory and special assistance provided where necessary.

LABORATORY REPRESENTATION

Members of the Laboratory staff serve on many Australian committees which deal with subjects of interest to the Laboratory and which are related to its functions.

The Director is the Australian Representative on the United Nations Scientific Committee on the Effects of Atomic Radiation and is a Member of Committee III of the International Commission on Radiological Protection, of Committee IV of the International Commission on Radiological Units and Measurements, of the Australian National Radiation Advisory Committee, of the Australian Atomic Weapons Tests Safety Committee and of the Boards of Studies of Nuclear Science and Engineering, Therapeutic Radiology and Diagnostic Radiology, of the University of Melbourne.

A liaison is maintained with the Consultative Committee for the Standards of Measurement of Ionizing Radiation of the International Bureau of Weights and Measures in Paris.

The Senior Physicist (Isotopes), returned to the Laboratory on 2nd October, 1961, after serving for a year as one of the Scientific Secretaries on the Secretariat of the United Nations Scientific Committee on the Effects of Atomic Radiations.

TABLE 1
RADIUM SERVICES
 1st July, 1960, to 30th June, 1962

Item.	Quantity.	
	1961-62.	1960-61.
1. Total movement of Commonwealth radium (mgm)	816	2,046
2. Quantity of radium measured (mgm)	0	614
3. Number of radium containers tested—		
Commonwealth	0	38
Private	2	14
4. Number of searches for lost radium or radon containers	1	1

TABLE 2
RADON SERVICES
 1st July, 1960, to 30th June, 1962
 Quantities of Radon issued are those at time of use

Item.	Quantity.	
	1961-62.	1960-61.
1. Radon issued for all purposes (mc)	32,724	39,360
2. Radon issued for treatment purposes only (including items 11, 12 and 13) (mc)	31,280	29,924
3. Total number of patients treated (not including items 11, 12 or 13) ..	782	664
4. Radon issued to hospitals (mc)	22,989	20,311
5. Location of hospitals to which radon was issued—		
Metropolitan	5	7
Country	12	9
Interstate	5	3
6. Radon issued to private practitioners (including items 11, 12 and 13) (mc)	8,291	9,613
7. Location of private practitioners to whom radon was issued—		
Metropolitan	11	12
Country	4	4
Interstate	3	4
8. Containers issued (including only capillary implants, needles and tubes of all classes)	6,766	4,781
9. Returnable containers not returned	7	1
10. Implants (0.5 mm Pt. eq.) received* from Sydney—		
Number	39	62
Total Radon (mc)	31	50
11. Nasal applicators—		
Number issued	9	7
Total Radon (mc)	2,374	1,990
Total patients treated	246	204
12. Radon plates (eye applicators)—		
Number issued	0	7
Total Radon (mc)	0	687
Total patients treated†	0	48
13. Radon ointment—		
Number of issues	0	1
Total radon (mc)	0	2
14. Industrial sources—		
Number issued	0	17
Total radon (mc)	0	8,365
15. Radon issued for research purposes (mc)	1,444‡	1,071

TABLE 2—continued.

Item.	Quantity.	
	1961-62.	1960-61.
16. Total radon extracted from solution (mc)	105,455	105,931
17. Total radon at time of use (mc)	32,693	39,310
18. Ratio $\frac{\text{item 17}}{\text{item 16}} \times 100$	31.0	37.2
19. Number of purifications	178	188

* Victorian requirements of radon in gold capillary of 0.5 mm. Pt. eq. filtration are obtained from the Bureau of Physical Services, Sydney. † Approximate values. ‡ Medical investigations (1 source) 81 mc; non-medical investigations (124 sources) 1,363 mc. Of the latter, 52 sources containing 1,003 mc were issued through the Australian Atomic Energy Commission. By arrangement with the Australian Atomic Energy Commission the remaining 72 sources, containing 360 mc, were ordered directly from the Laboratory by the users and were issued directly to them.

TABLE 3
RADON SERVICES, CENTRES OTHER THAN C.X.R.L.
 Quantities of Radon issued are those at time of use

Item.	Quantity.	
	1961-62.	1960-61.
(a) Sydney—		
1. Radon issued—		
Hospitals (mc)	6,446	7,164
Private practitioners (mc)	2,138	1,704
Research purposes (mc)	387	Nil
2. Total radon extracted from solution (mc)	22,485	23,152
3. Total radon at time of use (mc)	8,971	8,868
4. Ratio $\frac{\text{item 3}}{\text{item 2}} \times 100$	39.9	38.4
5. Number of purifications	85	60
(b) Brisbane—		
1. Radon issued—		
Hospitals (mc)	15,528	18,309
Private practitioners (mc)	326	435
Research purposes (mc)	Nil	260
2. Total radon extracted from solution (mc)	35,175	32,276
3. Total radon at time of use (mc)	15,854	19,004
4. Ratio $\frac{\text{item 3}}{\text{item 2}} \times 100$	45.1	58.9
5. Number of purifications	190	180

TABLE 4
USEFUL RADON YIELD

Centre.	Radium in Solution (mgm).	Total Radon Issued (mc).	Useful Yield (mc/mgm).
Melbourne	2,615	32,724	12.5
Sydney	877	8,971	10.2
Brisbane	933	15,854	17.0

TABLE 5

ISOTOPE SERVICES

Isotopes procured by the Laboratory—1st July, 1961, to 30th June, 1962

Isotope.	Number of Shipments Received.	Quantity Ordered (mc).	Use.*	Notes.
Ag ¹¹⁰	1	1.1	NM	
As ⁷⁴	14	355	M	
Au ¹⁹⁸	13	3.2	M	
Ba ¹³³ + Cs ¹³⁷	3	0.05	M, MR	" Mock iodine 131 " (reference sources)
Ba ¹⁴⁰	1	2	MR	
	2	4	NM	
C ¹⁴	132	66.5	MR	} 69 compounds
	10	1.3	NM	
	1	..	M	
	2	..	MR	Reference sources
Ca ⁴⁵	6	5.1	MR	Reference sources
	1	0.54	NM	
Ca ⁴⁷	3	0.33	M	
	1	0.2	MR	
Cl ³⁸	1	0.004	MR	
Co ⁵⁷	1	1	NM	
Co ⁵⁸	19	1.1	M	Vitamin B12
	1	0.025	MR	Vitamin B12
Co ⁶⁰	2	..	MR	Reference sources
Cr ⁵¹	10	14.3	M	Chromic chloride
	3	3.2	MR	Chromic chloride
	21	256	M	Sodium chromate
	13	24.6	MR	Sodium chromate
	2	0.5	M	Human serum albumin
Cs ¹³⁷	1	1	NM	
	1	1,000	NM	Industrial source
	4	0.2	MR	Reference sources
Fe ⁵⁹	7	5	M	Ferric chloride
	13	2.3	MR	Ferric chloride
H ³	3	20,000	MR	Gas
	1	10,000	NM	Gas
	4	16,200	MR	Water
	1	400	M	} 28 compounds other than above
	63	7,801	MR	
	1	..	M	Reference sources
	2	..	MR	Reference sources
	3	35.5 gm	MR	3 additional compounds sent for tritiation
I ¹³¹	60	12,960	M	Iodide in thiosulphate
	1	10	MR	Iodide in thiosulphate
	32	622	M	Iodide in isotonic saline
	1	1	M	Diodrast
	75	99	M	Hippuran
	136	113	M	Human serum albumin
	19	10.8	MR	Human serum albumin
	11	10.5	M	Human serum albumin (metabolic)
	3	3	MR	Human serum albumin (metabolic)
	22	22	M	Oleic acid
	3	3	M	Olive oil
	4	5.7	M	Polyvinyl pyrrolidone
	14	9.1	M	L-tri-iodothyronine
	1	0.5	NM	L-tri-iodothyronine
	68	94	M	Triolein
	1	1	MR	Triolein
Na ²²	1	1	MR	

TABLE 5—continued.

Isotope.	Number of Shipments Received.	Quantity Ordered (mc).	Use.*	Notes.
P ³²	28	2,265	M	Orthophosphate in dilute HCl
	17	211	MR	Orthophosphate in dilute HCl
	2	15	NM	Orthophosphate in dilute HCl
	11	80	MR	Orthophosphate in isotonic saline
	1	2	NM	Orthophosphate in isotonic saline
	29	550	M	Colloidal zirconium phosphate
	1	10	MR	} 2 compounds other than above
	1	2	NM	
Po ²¹⁰	1	1	NM	
Ra ²²⁶	1	30 cm	NM	Foil
S ³⁵	16	92	MR	4 compounds
Se ⁷⁶	1	3	MR	
Sr ⁹⁰	1	25	M	One plate
	1	5	MR	
	1	5	NM	Industrial source
Y ⁹⁰	1	43	M	Yttrium oxide rods
Y ⁹¹	1	15	NM	
Totals	933	73,439		

No irradiation units were procured by the Laboratory during the year.

Stable Isotopes

Ca ⁴²	1	5 mg	MR
Ca ⁴⁴	1	10 mg	MR
Ca ⁴⁸	1	5 mg	MR
K ⁴¹	1	5 mg	MR
Mg ²⁴	1	10 mg	MR
Mg ²⁶	1	10 mg	MR
N ¹⁶	1	3.5 mg	MR
Totals	7	48.5 mg	

Isotopes procured by the Laboratory for medical use from the Australian Atomic Energy Commission and despatched by the Commission direct to the ultimate user

Au ¹⁹⁸	3	173	M
Cu ⁶⁴	2	20	M
	1	10	MR
K ⁴²	17	142	MR
Na ²⁴	23	2	MR
Ta ¹⁸²	1	46	M
Totals	47	393	

* Categories of Use: M—Medical (diagnosis and/or treatment); MR—Medical Research; NM—Non-medical.

TABLE 6

DISTRIBUTION OF ISOTOPES FOR MEDICAL USE

In this table the word "issue" denotes an isotope container despatched from the Laboratory. The isotope in the container may consist of either an individual dose, or a bulk issue from which individual doses will be dispensed. The number of patients treated will therefore be at least as great as the number of issues.

Isotope.	Chemical Form.	Use.	1961-62.		1960-61.	
			Number of Issues.	mc at Use.	Number of Issues.	mc at Use.
As ⁷⁴ ..	Arsenate ..	Diagnosis ..	14	288	0	0
Au ¹⁹⁸ ..	Colloidal gold ..	Therapy ..	0	0	6	1,016
		Diagnosis ..	15	2.4	0	0
C ¹⁴ ..	Glycerol tripalmitate	Diagnosis ..	0	0	1	3
Ca ⁴⁷ ..	Chloride ..	Diagnosis ..	3	0.136	0	0
Co ⁵⁷ ..	Vitamin B12 ..	Diagnosis ..	0	0	10	0.01
Co ⁵⁸ ..	Vitamin B12 ..	Diagnosis ..	599	1.1	72	0.33
Cr ⁵¹ ..	Chromate in isotonic saline	Diagnosis ..	1,463	155	895	119
	Chloride ..	Diagnosis ..	10	14	0	0
	Human serum albumin	Diagnosis ..	2	0.17	0	0
	Total Cr ⁵¹ ..		1,475	169.17	895	119
Fe ⁵⁹ ..	Ferric chloride ..	Diagnosis ..	239	2.1	140	1.3
H ³ ..	Acetic-H ₃ -anhydride	Diagnosis ..	1	400	..	..
I ¹³¹ ..	Iodide in thio-sulphate	Therapy—				
		General ..	626	6,840	565	6,285
		Carcinoma ..	24	2,039	28	2,016
		Diagnosis ..	7,469	257	6,352	181
	Iodide in isotonic saline	Therapy ..	13	515	0	0
		Diagnosis ..	18	75	0	0
	Diodrast ..	Diagnosis ..	2	0.70	3	1.8
	Gamma globulin ..	Diagnosis ..	0	0	1	1.9
	Hippuran ..	Diagnosis ..	74	60	4	4.8
		Human serum albumin	Diagnosis ..	142	73	140	92.4
	Human serum albumin (metabolic)	Diagnosis ..	11	6.5		
	Hypaque ..	Diagnosis ..	0	0	1	2.3
	Oleic acid ..	Diagnosis ..	22	13.6	28	17.6
	Olive oil ..	Diagnosis ..	3	3.0	2	4.0
	Poly-vinyl pyrrolidone	Diagnosis ..	4	3.9	10	4.0
Rose bengal ..	Diagnosis ..	0	0	2	1.5	
L-thyroxine ..	Diagnosis ..	0	0	2	1.1	
L-tri-iodothyronine	Diagnosis ..	15	5.3	1	0.5	
Triolein ..	Diagnosis ..	68	55	68	53	
	Total I ¹³¹ ..		8,491	9,947	7,207	8,657

TABLE 6—continued.

Isotope.	Chemical Form.	Use.	1961-62.		1960-61.	
			Number of Issues.	mc at Use.	Number of Issues.	mc at Use.
P ³²	Orthophosphate in dilute hydrochloric acid	Therapy ..	262	1,313	276	1,260
		Diagnosis ..	72	66	37	41
	Colloidal chromic phosphate	Diagnosis ..	0	0	4	2.4
	Colloidal zirconium phosphate	Therapy ..	44	427	43	395
	TotalP ³² ..		378	1,806	360	1,697
S ³⁵	Congo red ..	Diagnosis ..	0	0	1	0.7
Y ⁹⁰	Sintered rods ..	Therapy ..	12	32	0	0
		Totals ..	11,227	12,648	8,693	11,594

TABLE 7

ISOTOPES MADE AVAILABLE FOR USE IN RESEARCH FROM BULK STOCKS PURCHASED FOR MEDICAL USE DURING 1960-61 AND 1961-62

The table presents data on the issues made for research in the physical and biological sciences and for investigations of production problems in industry.

Isotope.	Chemical Form.	1961-62.				Total.		1960-61.(b)	
		Medical Research.		A.A.E.C.(a)		Number of Issues.	mc at Issue.	Number of Issues.	mc at Issue.
		Number of Issues.	mc at Issue.	Number of Issues.	mc at Issue.				
Cr ⁵¹ ..	Chromate in isotonic saline	21	5.7	0	0	21	5.7	30	9.8
Fe ⁵⁹ ..	Chloride in isotonic saline	11	0.06	0	0	11	0.06	3	0.005
I ¹³¹ ..	Iodide in thio-sulphate	74	219	27	101	101	320	116	216
P ³² ..	Orthophosphate in dilute hydrochloric acid	102	414	64	145	166	559	102	375
P ³² ..	Colloidal chromic phosphate	0	0	0	0	0	0	2	1.4
P ³² ..	Colloidal zirconium phosphate	1	0.5	0	0	1	0.5	0	0

(a) Material delivered either direct to A.A.E.C. or to non-medical users against A.A.E.C. orders on the Laboratory. (b) The figures for 1960-61 include supplies issued from the Laboratory both for medical research and for non-medical purposes.

PUBLICATIONS AND LECTURES

1961-1962

Papers

MEASUREMENTS OF STRONTIUM 90 IN THE AUSTRALIAN ENVIRONMENT UP TO DECEMBER, 1960. D. J. Stevens, *et al.*, *Nature* 193; 188, January, 1962.

STRONTIUM 90 IN THE AUSTRALIAN ENVIRONMENT, 1957-1960. D. J. Stevens, *et al.*, *Aust. J. Sci.*, 24; 397, April, 1962.

GLOBAL FALLOUT IN AUSTRALIA DURING 1960-61. J. R. Blake, D. J. Stevens, *et al.*, *Aust. J. Sci.*, 24; 467, June, 1962.

Library Information

Library Accession List and Information Bulletin: issues of September and December, 1961; March and June, 1962.

Lectures

MEASUREMENTS OF LOW LEVELS OF RADIOACTIVITY. D. J. Stevens, to Scientific Meeting of Physics in Medicine and Biology, Adelaide, 25th September, 1961.

STANDARDS OF RADIATION DOSE IN AUSTRALIA. J. F. Richardson, to Scientific Meeting of Physics in Medicine and Biology, Adelaide, 26th September, 1961.

PERSPECTIVE ON RADIATION HAZARDS. D. J. Stevens, at a Symposium on "Radiation Safety in Medical Practice" held during the Twelfth Annual Meeting of the College of Radiologists of Australasia, 28th September, 1961.

SAFE USE OF RADIO-ISOTOPES IN INDUSTRY. D. W. Keam, at a meeting of Industrial Medical Officers, 2nd November, 1961.

BASIC NUCLEAR PHYSICS; FISSION AND FUSION-TYPE NUCLEAR WEAPONS; RADIATION ASPECTS OF NUCLEAR WEAPONS; and PEACETIME RADIATION HAZARDS. D. W. Keam at a "Course in Radiation Medicine for Medical Officers" conducted by the Royal Australian Army Medical Corps, 12th and 16th March, 1962.

RADIO-ISOTOPES FOR PHARMACEUTICAL CHEMISTS. A course of twenty lectures given at the Commonwealth X-Ray and Radium Laboratory by members of the staff from 13th June, 1962. (This course was arranged at the request of the Victorian College of Pharmacy and was the second of its kind, a similar course having been held at the Commonwealth X-Ray and Radium Laboratory in 1960.)

COMMONWEALTH ACOUSTIC LABORATORIES

HEARING AID SERVICES

The Commonwealth Acoustic Laboratories, with head-quarters in Sydney and branch laboratories in every State, continued to provide hearing aid services to partially deaf children and adolescents, Repatriation cases including Service Pensioners, Military Services personnel, Commonwealth Social Services rehabilitation cases and others entitled to them. During 1961-62, a total of 8,278 new patients attended the laboratories, bringing the total of those who have received assistance since the establishment of the service to 71,366. Of the new attendances, 2,237 were fitted with Calaid hearing aids, bringing the

cumulative total number of fittings to 16,632. Of these, 10,314 were Repatriation patients, 6,014 were children, 109 social services cases, 134 adolescents, and 61 Military Services men and women.

Improvements in the five models of Calaid hearing aids were continued as new parts, components and experience became available. Economical resistance/capacitance coupled circuits were developed for all models, to increase their stability and to allow further extension of their dynamic range. A substantial step forward early in 1962 was the design of a new circuit for the most powerful model incorporating automatic volume control which will allow better and more comfortable hearing for severely deaf cases. Retention of the standard hearing aid case rendered the incorporation of such improvements economically practicable. However, investigations of practicable ear level hearing aids for less deaf cases are proceeding, and the Director has been examining latest developments whilst overseas.

IMPROVED AUDIOLOGICAL AND PSYCHOLOGICAL SERVICES

Since the Calaid hearing aids were fitted with induction coils, considerable technical assistance has been given to the special educational authorities in the various States regarding the installation of classroom loop systems and auditory training units. Battery audiometers continued to be supplied on loan to school medical services to facilitate the early detection of hearing losses and enable early treatment and prevention. Free field testing facilities for ascertaining deafness in infants have been developed and are being installed in the laboratories as space becomes available.

During the period, complex hearing and communication disorders, especially those involving aphasic complications due to neurological defects, received particularly close attention following the return of the Assistant Director from the study of such problems at Northwestern University in the United States of America. Improved testing and psychodiagnostic methods were instituted in the laboratories and various publications and addresses made which have increased practical collaboration with medical and educational authorities concerned with this currently emphasised field.

Audiological equipment for conducting the Rainville Test, to assist in better differential diagnosis of conductive from sensorineural hearing losses, was installed in each laboratory. Latterly, a modified Bekesy type continuous recording audiometer has been imported and installed in the Sydney laboratory to assist in better differential diagnosis of retrocochlear from cochlear hearing disorders. Similar equipment is being obtained for other States.

During 1961, the Commonwealth Commission for Employees' Compensation adopted the policy of having all Commonwealth Hearing Compensation Cases referred to the laboratories for hearing and ear, nose and throat examination. The laboratories have continued their inquiries in this field, culminating in the publication by the Director of an article on "Hearing Impairment and Compensation" in the Journal of the Otolaryngological Society of Australia.

RESEARCH AND DEVELOPMENT

Research functions, specifically authorized under the Acoustic Laboratories Act, have had their importance re-asserted by the addition of physical and psychological research staff.

Noise Control and Hearing Conservation: Hearing protective devices developed by the laboratories were evaluated and discussed with the Combined Defence Services Medical Committee, and field investigations have been proceeding. A comprehensive Laboratories' Report on "Hearing Conservation in Industrial Noise" has been released. Extensive noise control and hearing conservation work continued, particularly in relation to the Navy and the R.A.A.F., the New South Wales and Victorian Departments of Railways, and the New South Wales Department of Mines. An interdisciplinary investigation is being conducted into blue-metal quarries and brickpit noise and vibration in view of the economic importance of this field. Following two years' work in the United States of America with a major noise consultant firm, a research psychologist has returned to the laboratories to contribute his experience and proceed with research into the effects of impact noise on hearing and its relevance to military and industrial problems.

The advice of the laboratories on the training of audiologists, audiometrists and speech therapists has been sought and discussions have proceeded with tertiary educational, hospital and other authorities. At present, there is no comprehensive training of audiologists in Australia except within the Acoustic Laboratories.

ULTRASONIC ECHOSCOPE APPARATUS

Ultrasonic echoscope apparatus, using very high sound frequencies to produce echograms to enable the visualization of abdominal masses, has been developed and installed for research investigations at the Royal Hospital for Women, Paddington, New South Wales. Analogous instruments for neurological and eye investigations are being designed. The ultrasonic instrument for the treatment of giddiness in Meniere's Disease has been developed and used clinically. Following the Laboratories' proposal and an N.H. and M.R.C. recommendation, the senior physicist in charge of ultrasonic investigations has proceeded to the United States of America and Europe to examine latest developments overseas and to attend the World Cancer Congress in Moscow.

During 1962 the Director of the laboratories attended international audiological, electro-acoustic and standards conferences in Europe and investigations in the United States of America.

PUBLICATIONS AND LECTURES

1961-1962

Reports

- ROCKS AREA NOISE.** J. A. Rose, *C.A.L. Informal Report*, August, 1960.
- GENERAL PRINCIPLES OF THERAPY OF THE APHASIAS.** Notes prepared for teachers, speech therapists *et al.* R. H. Farrant, 1961.
- CHILDREN WITH APHASIC AND OTHER PSYCHONEUROLOGICAL COMMUNICATION DISORDERS IN NEW SOUTH WALES.** R. H. Farrant, *C.A.L. Report No. 18*, October, 1961.
- DESIGN OF WEAKLY FOCUSING ULTRASONIC TRANSDUCERS.** G. Kossoff, *C.A.L. Report No. 17*, May, 1962.

EAR PROTECTIVE EQUIPMENT FOR THE DEFENCE SERVICES. R. A. Piesse, *C.A.L. Informal Report*, February, 1962.

HEARING CONSERVATION IN INDUSTRIAL NOISE. R. A. Piesse, J. A. Rose and N. E. Murray. *C.A.L. Report No. 19*, June, 1962.

Articles

THE STUDY OF THE COMMUNICATION DISORDERS AT NORTHWESTERN UNIVERSITY IN THE UNITED STATES OF AMERICA. R. H. Farrant, *J. Aust. Coll. Speech Ther.*, 1961, Vol. 11 (2), pp. 47-52.

HEARING IMPAIRMENT AND COMPENSATION. N. E. Murray, *J. Otolaryngol. Soc. Aust.*, 1962, Vol. 1 (2), pp. 135-145.

CALIBRATION OF ULTRASONIC THERAPEUTIC EQUIPMENT. G. Kossoff, *Acustica*, 1962, Vol. 12 (2), pp. 84-90.

Papers and Addresses

THE PSYCHODIAGNOSIS OF LANGUAGE DISORDERS IN CHILDREN. Address by R. H. Farrant to Annual Conference of Australian Branch of British Psychological Society, August, 1961.

COMPARATIVE FACTOR ANALYSIS OF THE INTELLECTIVE ABILITIES OF DEAF VERSUS HEARING CHILDREN. Address by R. H. Farrant to Annual Conference of Australian Branch of British Psychological Society, August, 1961.

COMMUNICATION DISORDERS IN CHILDREN; THEIR VARIETIES AND PSYCHOLOGICAL ASSESSMENT. Talk given by R. H. Farrant at Symposium on Communication disorders in children, Sydney, September, 1961.

MODERN MANAGEMENT OF DEAFNESS. Part II: Hearing Aids. Lecture given by R. H. Farrant to Sydney University's Post Graduate medical committee's general revision course, 11th April, 1962.

Lectures and demonstrations given to—

North Sydney Branch of the Australian Association for Better Hearing.

Parents and Teachers of the Subnormal Children's Welfare Association, Crowle House.

New South Wales School Medical Service Nurses.

Occupational Health and Diploma of Public Health Graduate Medical Students.

Technician Trainees, Department of Air.

New South Wales Public Health Nursing Sisters.

Sydney Hospital, &c., Audiometrists.

Also to some similar groups in other States.

SUMMARY OF CLINICAL ACTIVITIES

1st July, 1961 to 30th June, 1962

							1961-62.
1. New Cases Attending Laboratories—							
Children	..	..	..	..	..	..	3,256
Repatriation	..	..	..	..	..	..	2,724
Miscellaneous	..	..	..	..	..	..	794
Social Services	..	..	..	..	..	..	10
Army	..	..	..	..	..	..	158
Royal Australian Air Force	..	..	..	..	..	..	613
Navy	..	..	..	..	..	..	85
Directors of Health	..	..	..	..	..	..	202
Total							7,842
2. Civil Aviation Referrals—							
New	..	..	..	..	..	..	436
Repeat Tests	..	..	..	..	..	..	2,681
Total							3,117
3. Aid Fittings—							
Children and Health	..	..	..	..	..	..	725
Repatriation	..	..	..	..	..	..	1,504
Social Services	..	..	..	..	..	..	5
Army	..	..	..	..	..	..	2
Royal Australian Air Force	..	..	..	..	..	..	..
Navy	..	..	..	..	..	..	1
Total							2,237
4. Total Aids Currently Maintained as at 30th June, 1962—							
Repatriation	..	..	..	..	..	..	9,399
Health	..	..	..	..	..	..	1,970
Children	..	..	..	..	..	..	3,879
Social Services	..	..	..	..	..	..	23
Army	..	..	..	..	..	..	35
Royal Australian Air Force	..	..	..	..	..	..	12
Navy	..	..	..	..	..	..	4
Total							15,322

NATIONAL BIOLOGICAL STANDARDS LABORATORY

The National Biological Standards Laboratory which was established in Canberra in 1958 under the provision of the Therapeutic Substances Regulations continued its work of preparing standards. One of the main functions of the Laboratory is to prepare standards for therapeutic substances, both veterinary and human, for which no standards exist and for carrying out work, and recommending modifications to existing standards to meet Australian conditions.

The National Biological Standards Laboratory is divided into two broad disciplines—the Biological Products Division and the Pharmaceutical Products Division. The Biological Products Division is divided into four working laboratories namely, Bacterial Products, Viral Products, Endocrine Products and

Antibiotics. The Pharmaceutical Products Division consists of Pharmaceutical Chemistry and Pharmacology laboratories. Each Division will be dealt with separately later in the report.

The first meeting of the Biological Products Standards Committee was held in Canberra in April, 1962. This Committee has been set up under the Therapeutic Substances Regulations to advise the Minister on the standards and matters relating to the standards of, antibiotics, antigens, antitoxins, blood derivatives, insulin products, sera, toxoids, vaccines and other biological products.

Amongst other things the Committee gave consideration to the question of the batch numbering and expiry dating of all products of a biological nature and the views of the pharmaceutical industry have been sought on the proposals before final recommendations are made.

General: Since January, 1962, the National Biological Standards Laboratory has undertaken the examination of therapeutic agents recommended to the Minister by the Pharmaceutical Benefits Advisory Committee for inclusion as Pharmaceutical Benefits. This has been done with the twofold purpose of ensuring that only products of a satisfactory standard are provided at Commonwealth expense and as a continuing mechanism whereby standards are provided for all such products where standards do not exist. The latter aspect has been delayed by difficulties in recruiting qualified professional staff.

BIOLOGICAL PRODUCTS DIVISION

Bacterial Products Section

Although extensive advertising has been undertaken in the United Kingdom, South Africa and other countries through the medium of journals and the press a suitable applicant has not been found to fill the position of Officer-in-Charge of the Bacterial Products Laboratory. In the circumstances, sterility testing has been carried out by the Antibiotics Section.

Antibiotics Section

The main activity of the Antibiotics Products Laboratory was the examination of finished antibiotics products available as Pharmaceutical Benefits, attention being concentrated on the more important antibiotics such as the penicillins, tetracyclines and streptomycins. Some deficiencies in the official standards were found, many products having no requirements at all, while many of the existing requirements are incomplete and ill-defined. Drafting of new or amended official requirements was commenced.

Certification of products for export, particularly for UNICEF, was on a greatly increased scale compared with previous years.

Many analyses were made on request from other Commonwealth Departments and hospitals. Advice and staff training was made available to local manufacturers intending to carry out their own antibiotic assays. These activities have induced local manufacturers to carry out much more quality control in Australia.

Approximately 400 antibiotic samples were examined during the year. While shortcomings of a serious nature are rare, the incidence of minor non-compliance with official requirements or with reasonable corresponding requirements is still considerable. Besides biological assays a variety of other tests have been carried out in the Laboratory, including determination of moisture, tests for pyrogens and toxicity and alkalinity of glassware.

Sterility Testing

Sterility testing was instituted on a routine basis during the year, and has since been carried out to maximum capacity. In all, some 470 products were examined for sterility, two only failing to pass the test. The original requirements for sterility testing were found to be inadequate and considerable thought has been given to the framing of more suitable requirements. Liaison with the pharmaceutical industry in relation to sterility testing has been considerable and mutually profitable.

The Endocrine Products Section

The Endocrine Products Section has sampled Insulin preparations from every manufacturer at present represented in Australia and assays have been carried out by the official methods. Since these methods require large numbers of animals and are very time-consuming research into alternate *in vitro* techniques has been commenced.

Highly purified Insulin has been obtained for a laboratory standard but the establishment of a National Standard will not be possible until adequate animal house facilities are available. Nevertheless the Laboratory has supplied reference material to the C.S.I.R.O. and the Australian National University for research purposes.

Progress has been made with the setting up of equipment for testing gonadotrophin and corticotrophin.

Heparin products have been examined and a method of assay, which has far greater precision than the official one, has been developed.

A report on the use of hormones in meat production has been made at the request of the National Health and Medical Research Council.

The University of Sydney conferred the degree of Doctor of Science on the officer in charge of this section, for work published. He has also been invited by the National Science Foundation to present a paper at Houston, U.S.A., in 1963 on the "Endocrinology of Implantation".

VIRAL PRODUCTS SECTION

Work commenced on the modification of a building in the Commonwealth Serum Laboratories grounds, Melbourne, to house temporarily the Viral Products Section. It is proposed that when this building is completed the Laboratory will assume responsibility for the control testing of Salk Poliomyelitis Vaccine.

In the field of Veterinary Vaccines, continued testing of Infectious Laryngo-tracheitis Vaccines has shown that vaccines produced in Australia have consistently met the virus potency standard defined previously. During the year a detailed interim standard for the vaccine, drawn up by the Viral Products Laboratory, has been discussed with the New South Wales Department of Agriculture and the manufacturers. Some modifications have been introduced to improve the safety of the vaccine.

PHARMACEUTICAL PRODUCTS DIVISION

PHARMACEUTICAL CHEMISTRY

The Pharmaceutical Chemistry Laboratory examined during the year 904 samples of 94 products from 78 manufacturers. Of these, 156 samples (17 per cent.) failed to conform to the appropriate standards. This is an improvement on the previous year when 24 per cent. of the 1,025 samples examined failed to meet a suitable standard. Approximately 9 per cent. of the failures were of a serious nature, such as low potency. The other failures were less serious, being due to incorrect labelling, non-uniformity of weight of tablets, &c.

As well as routine samples, drugs and medicinal preparations which were submitted for inclusion in the Pharmaceutical Benefits list were analysed. Only one serious failure was found and the recommendation made that this product be not listed. Listing has been deferred until the product passes further tests.

Analyses for other Commonwealth Departments has continued, and close collaboration has been established with some of the State Departments of Agriculture.

Work has begun on the definition of official standards where these do not exist or are inadequate at the moment.

The collaborative study with industry on aspirin which commenced last year is continuing.

Friendly relations with industry have been maintained.

THE PHARMACOLOGY LABORATORY

The Pharmacology Laboratory has undertaken, in the latter part of the year, the responsibility for pyrogen and toxicity testing for other laboratories. Some anomalies in the requirements for the absence of depressor activity in tetracycline antibiotics have been uncovered.

At the request of hospital authorities, who feared undue toxic side-effects, a survey of the toxicity of streptomycin injections used in the treatment of Tuberculosis has been made. No significant evidence for such fears was found.

An investigation of certain dental anaesthetics containing biologically active adjuvants disclosed incompatibilities in formulation which led to the withdrawal of import permission for one product. A pharmacological investigation of anomalous reactions with certain eye drops revealed contamination with trace amounts of another potent alkaloid. The manufacturers immediately withdrew the offending batch of this product. The difficulties have since been overcome.

Much effort was expended to evolve a satisfactory and simple assay for Rauwolfia alkaloids, with only partial success. Work in collaboration with the Analytical Chemistry Laboratory on thyroid extracts was placed before the National Health and Medical Research Council which, as a result, recommended the use of synthetic thyroxine in preference to the extracted gland, in medical practice.

Recommendations for new standards for para aminosalicyclic acid preparations have been formulated for presentation to the Therapeutic Substances Standards Committee.

PUBLICATIONS

ADRENERGIC PROPERTIES OF THE COCKROACH CORPUS CARDIACIUM. L. Barton-Browne, L. F. Dodson, J. K. Kiraly and E. S. Hodgson, *General and Comparative Endocrinology*, 1 : 232 (1961).

STIMULATION OF UTERINE CONTRACTION BY EXTRACTS OF THE COCKROACH. L. Barton-Browne, E. S. Hodgson and J. K. Kiraly, *Periplaneta Sci.*, 134 : 669 (1961).

THYROID B.P. UNRELIABLE (Letter to the Editor). J. K. Kiraly and J. W. Wanless, *Med. J. Aust.*, June 9, 1961.

PROBLEMS ASSOCIATED WITH THYROID TABLETS. J. W. Wanless, *Aust. J. of Pharm.* (October 30, 1961.)

INFLUENCE OF SPERMATOZOA ON THE CLEAVAGE RATE OF MOUSE EGGS. W. K. Whitten and C. P. Dagg, *J. Exp. Zool.*, 48 : 173 (1961).

COMMONWEALTH BUREAU OF DENTAL STANDARDS

The Bureau of Dental Standards is still working in close co-operation with the Standards Association of Australia and the Australian Dental Association for the production of first class dental materials.

The position has been achieved where very few dentists will purchase dental materials that are not on the certified list or are not approved by the Bureau if the standard has not been completed.

Importers use the Bureau to screen overseas products and will only handle them on acceptance of a favourable report.

Australian subsidiaries of overseas companies and Australian manufacturers have received material assistance in setting up the production of a wide range of dental materials.

The number of published standards is 21 and others are nearing completion. Some require extensive investigation and improvement in test equipment and methods.

Standards ready for public critical review are elastomeric impression materials, cobalt-chromium alloy, gold solder and cold-processed resins for denture repairs. Still under committee review are silver solder, dental casting investment, stainless steel wires and dental burs.

There are 154 dental products that have been accepted as certified materials.

EDUCATION ACTIVITIES

Assistance is being given in educating undergraduate and postgraduate dentists, dental mechanics and dental assistants in the properties, mixing and manipulation of dental materials.

Three dentists are being assisted by advice and use of equipment for work towards a Doctorate and fourteen are being instructed for Master of Dental Science. Numerous lectures, displays and clinics have been given at congresses, conventions, study groups and to associated dental groups throughout Australian cities and articles have been published in local and overseas journals. Four of these were reported in the American 1961/62 Year book of Dentistry.

The Director spent more than four months abroad in America, Europe and Britain visiting dental institutions, research organizations and dental material manufacturers. He was awarded the Wilmer Souder Award from the International Association for Dental Research for outstanding and meritorious dental research. This is the first occasion it has been awarded outside the United States of America.

The Director attended the International Dental Congress in Cologne, where he took an active part in discussions on International Standards for dental materials.

COMMONWEALTH HEALTH LABORATORIES

The Commonwealth Health Laboratories are located at fifteen strategic areas in all States. In accordance with section 9 (1) (b) of the National Health Act the laboratories provide a clinicopathological diagnostic service for the medical practitioners and hospitals of the areas they serve. All laboratories functioned efficiently throughout the year in spite of staff difficulties due to the increasing demand on the service for serological tests concerned with blood transfusions, and the more detailed bacteriological investigations required following anti-tuberculosis campaigns.

The laboratories also assist in the epidemiological investigations of outbreaks of disease by collecting specimens and referring these to the central reference laboratories such as the World Health Organization Influenza Centre and other virus reference laboratories. Dr. R. A. Rimington, Townsville, and Dr. W. R. Horsfall, Cairns, presented important papers to the North Queensland Medical Congress in June, 1962, concerning the health of the white man in the tropics. Dr. Rimington: A survey of Kerato Acanthoma incidence over five years. Dr. Horsfall: Haemoglobin values in pregnancy in a tropical area over five-year period.

Laboratories are located at Albury, Alice Springs, Bendigo, Cairns, Canberra, Darwin, Hobart, Kalgoorlie, Launceston, Lismore, Port Pirie, Rockhampton, Tamworth, Toowoomba and Townsville.

The number of pathological examinations and laboratory tests performed at each laboratory during the years 1960-61 and 1961-62 is as follows:—

Location	1960-61	1961-62
Albury	40,812	44,329
Alice Springs	4,270	10,549
Bendigo	65,656	97,649
Cairns	66,699	78,462
Canberra	149,879	189,883
Darwin	49,083	56,223
Hobart	52,920	49,972
Kalgoorlie	35,721	29,131
Launceston	48,500	50,384
Lismore	92,285	106,406
Port Pirie	12,638	11,189
Rockhampton	48,747	63,931
Tamworth	51,126	66,291
Toowoomba	108,831	139,630
Townsville	113,102	120,424

WORLD HEALTH ORGANIZATION

The World Health Organization, founded during 1948, is a specialized Agency of the United Nations. For practical purposes it is an independent body.

The organs of W.H.O. are the World Health Assembly and Regional Committees the meetings of which are held annually; the Executive Board which meets twice a year and the Secretariat or staff of permanent officials headed by the Director-General of the Organization. The administrative control is decentralized through the various regional offices of which there are six. Australia is assigned to the Western Pacific Region, the head-quarters of which have been established at Manila.

Australia is a financial member of the World Health Organization and is represented annually at its Assembly and Regional Committees.

The objective of this Organization is the attainment by all peoples of the highest level of health.

Health information from W.H.O. is received by both the Commonwealth Departments of Health and External Affairs. A close liaison exists between these two Departments. The information so received is correlated and forwarded to interested bodies in Australia and its Territories. Appropriate action on behalf of the Commonwealth is taken by the two Departments in consultation one with the other.

FIFTEENTH WORLD HEALTH ASSEMBLY

The Fifteenth World Health Assembly met in Geneva from 8th May to 25th May inclusive.

The Australian delegation consisted of—

Major-General W. D. Refshauge, Director-General of Health, leader;

Mr. R. W. Furlonger, Head of the Australian Permanent Mission to the United Nations;

Dr. R. C. Webb, Chief Medical Officer, Australia House, London;

Additional alternates were—

Dr. A. M. McArthur, Senior Medical Officer;

Dr. B. Royall, Chief Medical Officer, The Hague, Holland;

Mr. P. G. F. Henderson, First Secretary and Consul, Australian Consulate-General, Geneva.

The World Health Organization had in 1962 a total membership of 115, the Assembly having welcomed Western Samoa as a new Member, and Jamaica and Uganda as Associate Members.

REGIONAL COMMITTEE FOR THE WESTERN PACIFIC

The Twelfth Session of the Regional Committee for the Western Pacific was held in Wellington, New Zealand, from 31st August to 5th September, 1961.

The meeting was formally opened by the Prime Minister for New Zealand, Mr. K. I. Holyoake, in the presence of the Minister for Health, Mr. N. L. Shelton, and the Assistant Director-General of W.H.O., Dr. P. M. Kaul, who represented the Director-General of W.H.O.

The Australian representatives were Dr. H. E. Downes, Commonwealth Department of Health, Canberra, and Mr. Robert Harris, representing the Australian Dental Association. Other non-governmental organizations in official relations with W.H.O. were present, these included Dr. Allan Stoller (World Federation of Mental Health) from Melbourne, and Dr. Ross-Smith (World Medical Association) of Sydney.

Technical Discussions: The subject for the technical discussions was "Dental Health". The discussions were well prepared and informative.

The presence of a representative of the Australian Dental Association at this Regional Committee Meeting was fully justified. It demonstrated the active interest in the particular problems of dental health and dental services in the Region and its representative was able to contribute valuable information on long-term Australian research on the aetiology and control of dental caries in relation to diets and on ethnic and geographical distribution of dental caries and periodontal disease in an Asiatic country (Thailand).

COMMONWEALTH GRANTS

AUSTRALIAN RED CROSS SOCIETY—BLOOD TRANSFUSION SERVICE

One of the most important of the services rendered by the Australian Red Cross Society is its Blood Transfusion Service which operates in all States and Territories of the Commonwealth.

Since 1954 the Commonwealth has made an annual grant to each State Government, equal to 30 per cent. of the certifiable operating costs of the Blood Transfusion Service incurred by the Society in each State, on the condition that 60 per cent. of the operating costs is met by the State concerned, leaving 10 per cent. of the expense to be met by the Society.

Details of grants made by the Commonwealth during the period under review are included in the following table:—

State	1961-62 (Based on Expenditure for year ended 30th June, 1961)
	£
New South Wales	47,260
Victoria	52,515
Queensland	33,647
South Australia	19,231
Western Australia	16,115
Tasmania	5,776
Total	174,544

ROYAL FLYING DOCTOR SERVICE

The Royal Flying Doctor Service of Australia is conducted by a Federal Council comprised of representatives of six sections, namely: Queensland, Victoria, New South Wales, South Australia, Western Australia and the Eastern Goldfields (W.A.).

The work of all of the Councillors and the bodies which support and assist the administration is purely voluntary.

The work of the Flying Doctor Service is aimed at providing medical services to the white and aboriginal populations in isolated areas and, in addition, as incidental to its main activities, wireless communications are maintained and utilized for social, private and business uses, and from time to time special purposes work is undertaken in connexion with flood relief, searching for lost parties and co-ordinating cattle movements. The service is not conducted with a view to profit.

The service operates in Queensland, New South Wales, South Australia, Western Australia and the Eastern Goldfields.

Charges are made in some sections of the service on a fixed basis while other sections do not make any fixed scale of charges but seek contributions from those who use their services, according to ability to pay. In some sections there is an arrangement to levy a fixed annual charge per person on graziers in certain areas.

The service has grown very considerably in recent years.

The Commonwealth has been making grants available towards the cost of conducting the Flying Doctor Service since 1936.

The Commonwealth grant in 1961-62 was £67,494. This provided for £40,000 towards the cost of operational expenses and £27,494 towards the cost of capital expenses.

The Commonwealth also continued to meet the cost of the contents of standard medicine chests supplied for use in the various centres serviced by the Royal Flying Doctor Service when doctors give medical advice by radio.

HOME NURSING SUBSIDY SCHEME

Home Nursing Subsidy Act 1956: The Home Nursing Subsidy Scheme which came into operation on 1st January, 1957, was designed to assist in the extension of home nursing activities, either by the expansion of existing home nursing organizations or the formation of new ones. To be eligible for a subsidy, an organization must provide a home nursing service, be a non-profit-making organization, employ registered nurses and be in receipt of assistance from a State Government.

Subsidy payments are based on the number of nurses employed over and above the number employed during September, 1956, in the case of existing organizations and on the total number of registered nurses employed by newly formed organizations. A subsidy at the rate of £1,000 per annum is paid in respect of each additional nurse employed in the first instance and at the rate of £500 per annum in respect of nurses employed by newly formed organizations.

The annual subsidy paid by the Commonwealth since the inception of the Home Nursing Subsidy Scheme was—

	£
1956-57	1,807
1957-58	18,135
1958-59	34,538
1959-60	53,616
1960-61	78,014
1961-62	107,668

FREE MILK FOR SCHOOL CHILDREN

The *States Grants (Milk for School Children) Act* 1950 makes provision for the Commonwealth to subsidize the States for the cost of providing free milk to school children. The State governments administer this scheme and the Commonwealth reimburses the cost of the milk supplied, and half the cost of any incidental expenditure.

The subsidy for 1961-62 was £3,741,638, which permitted the free distribution of one-third of a pint of milk daily to approximately 1,618,000 school children attending public and private primary schools, kindergartens, crèches, and aboriginal missions throughout Australia.

There have been no changes in legislation affecting the supply of free milk to school children during the year.

Expenditure by the Commonwealth on the Free Milk Scheme since its commencement in 1950-51 is shown in Table 1 on page 22. However, these figures do not include amounts reimbursed to the States in respect of 50 per cent. of capital and incidental expenditure, which was £11,801 for 1961-62.

MENTAL INSTITUTIONS

Earlier Commonwealth action in the field of mental health is summarized in the Report covering the period ended 30th June, 1956. As there recorded, the Commonwealth Government, in June, 1955, made an offer to the States of a grant of £10,000,000 for the purpose of encouraging a capital expenditure programme of £30,000,000. The offer was made on the basis of the provision of £1 by the Commonwealth for every £2 by the States. All the States accepted the offer made by the Commonwealth and agreed to the grant being divided on a population basis which resulted in the States being eligible for the following amounts:—

	£—
New South Wales	3,830,000
Victoria	2,740,000
Queensland	1,460,000
South Australia	895,000
Western Australia	720,000
Tasmania	355,000
	10,000,000

In November, 1955, the Commonwealth Parliament passed the States Grants (Mental Institutions) Act which provided the necessary legislation for the above grants to be made available to the States. Expenditure must have the prior approval of the Minister for Health. The grant is paid to the States as a part reimbursement of their expenditure and therefore the amount of Commonwealth contribution, within the above totals, is dependent upon the capital expenditure made by the States in connexion with their mental hospitals.

Details of the expenditure by the States each year and the amount of Commonwealth grants paid to the States since the inception of the scheme are shown in Table XVI. on page 36.

THE MILK PROVISION FOR SCHOOL CHILDREN

The State Grants (Milk for School Children) Act 1950 makes provision for the Commonwealth to reimburse the States for the cost of providing free milk to school children. The State Government determines the scheme and the Commonwealth reimburses the cost of the milk supplied, and half the cost of any incidental expenditure.

The subsidy for 1961-62 was £7,414,675, which provided the free distribution of one-third of a pint of milk daily to approximately 1,612,000 school children attending public and private primary schools, kindergartens, creches, and kindergartens throughout Australia.

There have been no changes in legislation affecting the supply of free milk to school children during the year.

Expenditure by the Commonwealth on the Free Milk Scheme since its commencement in 1950-51 is shown in Table 1 on page 52. However, these figures do not include amounts reimbursed to the States in respect of 20 per cent of capital and incidental expenditure which was £11,901 for 1961-62.

MENTAL INSTITUTIONS

Earlier Commonwealth action in the field of mental health is summarised in the Report covering the period ended 30th June 1956. As there occurred in the Commonwealth Government, in June 1955, made an offer to the States of a grant of £10,000,000 for the purpose of encouraging a capital expenditure programme of £30,000,000. The offer was made on the basis of the provision of £1 by the Commonwealth for every £3 by the State. All the States accepted the offer made by the Commonwealth and agreed to the grant being divided on a population basis which resulted in the States being eligible for the following amounts—

Tasmania	382,000
Western Australia	750,000
South Australia	802,000
Queensland	1,460,000
Victoria	2,740,000
New South Wales	3,870,000
Total	10,000,000

In November 1955 the Commonwealth Parliament passed the States Grants (Mental Institutions) Act which provided the necessary legislation for the above grants to be made available to the States. Expenditure under the offer is approved of the Minister for Health. The grant is paid to the States as a part reimbursement of their expenditure and therefore the amount of Commonwealth contribution within the above totals is dependent upon the capital expenditure made by the States in connexion with their mental hospitals.

Details of the expenditure by the States each year and the amount of Commonwealth grants paid to the States since the inception of the scheme are shown in Table XVI on page 56.

