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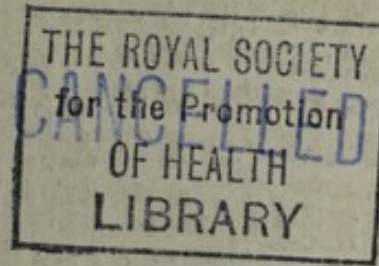
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# **Commonwealth Department of Health**

## **Annual Report 1966-67**

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COMMONWEALTH OF AUSTRALIA

*With the Compliments  
of the  
Director-General of Health*

REPORT OF THE

With the Commission

of the  
Director-General of Health



COMMONWEALTH DEPARTMENT OF HEALTH



**Annual report**

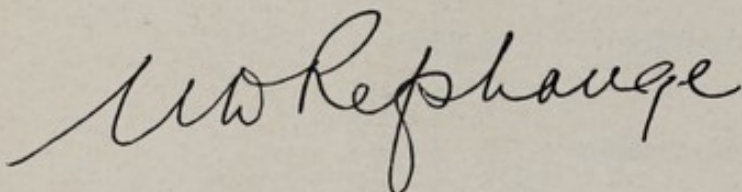
**Director-General of Health**

**1966-67**

CANBERRA, 1967

*The Honourable A. J. Forbes, M.C., M.P.,  
Minister for Health,  
Commonwealth of Australia.*

*I present herewith  
my report of the activities of the  
Commonwealth Department of Health  
for the year ended 30th June, 1967.*

A handwritten signature in dark ink, reading 'W D Refshauge'. The signature is fluid and cursive, with the first letters of 'W', 'D', and 'R' being capitalized and prominent.

*W. D. Refshauge,  
Director-General of Health,  
31st August, 1967,  
Canberra, A.C.T.*



## Introduction

The scientific advances in the post-war era and the application of modern managerial techniques have benefitted mankind to an immeasurable extent. It would, at first sight, seem logical to assume that these developments would reduce the effort, facilities and finance necessary to further raise the level of health in the community. Instead the reverse is true. Health expenditure is not a self-eliminating expense, because the more success it achieves the more possibilities for further improvement are opened up.

The advanced stage reached by medical science means that we are now able to tackle in a positive way many disease factors which were previously beyond remedial scope. While many more lives are saved there are, because of increasing longevity, comparatively more conditions associated with old age which require continued and long-term treatment in hospitals and by other health agencies. At the same time research is revealing or confirming health factors among the population which must cause some re-thinking of traditionally accepted priorities.

As more of the older health problems, such as communicable diseases, are brought under control our attention can be directed to the more recently identified problems. It is becoming more and more apparent that many of these recently understood, or acknowledged, health problems—such as drug dependence, traffic accidents, alcoholism and cigarette smoking—cannot be solved solely through public health techniques applied by the traditional public health machinery.

The causes of many of these health problems are related to behaviour rather than to accidents of biology and their remedies involve changes in well established social practices as well as medical aspects. It is interesting to reflect that hygiene, perhaps the greatest of the health lessons learnt and accepted by mankind, involved major changes in social attitudes.

Health administration and legislation in Australia is, of course, already inextricably interwoven with social and welfare services and protection. But, because the solution to many contemporary health problems will involve changing social attitudes, there does seem a need to promote even closer working relationships between the health, social and educational agencies of our society. The days when medicine and nursing were almost the only professions engaged directly in health programmes have gone. Today administrators, social scientists, educationalists and technologists of all kinds play an increasingly important part. The skills of all these people are necessary if we are to ensure that the knowledge so hardly won by research is employed to the best advantage.

We have a situation in Australia in which the controls over diseases that have been mastered must be maintained, in which the social benefits that have themselves done so much to improve health and happiness are being maintained and improved and in which newly identified problems challenge our resources of skill and money. In all countries of the world



more and more resources are being devoted to the improvement of health. In the purely financial sense, an indicator of the increased commitment to health services in Australia may be seen in the expenditure by the Commonwealth Department of Health. In the past ten years the Department's expenditure has increased by 200 per cent from \$92.7 million in 1956-57 to \$278.1 million in 1966-67.

As the funds devoted to health services have increased and the methods of administration have become more complex, the number of people directly involved in providing the services has also expanded. This trend has been accentuated in the Australian Capital Territory and the Northern Territory, the health services for which are administered by the Commonwealth Department of Health, by significant population increases.

### *Organisation*

In July 1966 a new division was established within the Department to formulate and implement policy on all matters relating to health services in the Australian Capital Territory. The staff of this division is being built up to the required strength to cope with the many problems posed by the rapid growth of the A.C.T. population. The population growth in the Northern Territory and the development of the Territory as a whole—particularly in mining—has also caused administrative problems and these have been further complicated by the distances and other physical factors involved in providing services to the more remote areas. To overcome these administrative difficulties, a Southern Regional Office of the Department has been established at Alice Springs.

The complexities of administration of health services in Australia are not, of course, confined to the activities of the Commonwealth alone. Health services are largely provided by State and local government authorities, religious and charitable organisations and by private enterprise. Much of the progress made in the public health field in the past two or three decades has been due to the close working partnership achieved between Commonwealth and State agencies and the uniformity of approach to problems which has grown out of the work of the National Health and Medical Research Council.

### *Surveys*

As health activities are extended and as the inter-relationship of professional disciplines and agencies becomes more complex, it becomes more necessary than ever to obtain accurate, empirical information on which to base judgments. To assist in making such decisions the National Health and Medical Research Council has sponsored a number of surveys and others have been sponsored directly by the Commonwealth Government.

During the past year, for instance, the first part of the report on the National Morbidity Survey was published, a survey to test the degree of immunity to poliomyelitis among children in the A.C.T. was begun and a major research project to investigate the problem of atypical mycobacteria—which cause a tuberculosis type disease—was arranged.



## *Tuberculosis*

The earlier diagnosis of tuberculosis resulting from the mass X-ray campaigns conducted over recent years and modern methods of treatment have had the gratifying effect of almost halving the incidence of tuberculosis in Australia over the last ten years. The incidence ratio has fallen from 46.4 per 100,000 in 1956 to 21.8 per 100,000 in 1966. Information compiled in the Department's Tuberculosis Division revealed that since 1949, when the joint campaign against tuberculosis by the Commonwealth and the States was begun, 2,539 hospital beds previously reserved for tuberculosis patients had been handed over to the State hospital authorities for other uses. A further 406 beds had been closed. The survey also revealed, however, that there were still 2,558 beds reserved for use by tuberculosis patients and this, together with the number of notifications of the disease still being received, emphasises that there is no room for complacency.

## *Quarantine*

Not only does the Department of Health have to cope with the complexities of advanced medical technology but advances in other fields, particularly in transportation, have created problems which make the administration of quarantine legislation much more difficult. The introduction in Australia of container handling of overseas cargoes is going to create many problems for the Quarantine Service. By way of illustration, it is estimated that by 1972 about 80 per cent of the freight between the United Kingdom and Australia and 60 per cent of that between Europe and Australia will be in containers.

The operation of all three branches of the Quarantine Service will be affected by container handling of cargo. For the General Quarantine Branch the main problem will be to determine whether the containers hold goods which are prohibited or restricted under quarantine legislation and whether containers, when landed, harbour vermin such as rats. The main problem for the Animal Quarantine Branch will concern documentation of the container contents, particularly those containers which are not opened at the terminal or bulk breaking depot in the port of arrival. For Plant Quarantine, the main concern will be the timbers used in the construction of the containers, particularly as the life cycle of the timber pests they could harbour may include a stage of aerial flight allowing rapid and wide dissemination of its species. The cleaning and disinfection of the containers and the question of soil adhering to them will be common problems in both animal and plant quarantine.

The success of container handling will depend largely on the speed of operation and it will be necessary to streamline quarantine procedures so that the flow of goods will not be interfered with any more than is essential. At the same time it must be ensured that no loop-hole is left by which any diseases of man, animal or plant that are at present excluded by the quarantine barrier may enter Australia. Transport authorities, importers and exporters will have great responsibilities to comply with Government requirements designed to ensure that the health and economic security of Australia are not jeopardised.



## *National Health Act*

The National Health Act was amended twice during the year. These amendments altered the definition of 'pensioner' to permit more people to receive benefits under the National Health Act, made provision for the Commonwealth benefit payable to public hospitals for the free treatment of pensioners to be increased and also for the standard rate hospital fund benefit to be increased. Further details of these legislative changes are given in the section of this report headed National Health Benefits.

## *International Health*

As a member of the World Health Organisation, Australia, and as a consequence the Commonwealth Department of Health, is involved in the world-wide battle being waged against disease. As the Department's involvement has increased there has naturally been a constant increase in the volume of work to be dealt with. To cope with this a new International Health Section was established this year.

In my last report I mentioned that Australia had become a contributor to the International Agency for Research on Cancer, which was established to plan, promote and develop research into the causes, treatment and prevention of cancer, principally by sponsoring and co-ordinating research in established national laboratories. It has been most encouraging to watch the development of the Agency over the last year.

It is also pleasing to report that at the 20th World Health Assembly I, as the Australian Delegate, was appointed to the Executive Board of the World Health Organisation.

Australia now maintains three medical teams in South Vietnam. The medical teams are staffed by highly qualified personnel and include surgeons, physicians, anaesthetists, medical and surgical registrars and general practitioners, together with nurses, pathology technicians and radiographers. The Australian medical teams have found their services in great demand as they have become known to the local population. They have won a high reputation both among the Vietnamese people in the localities where they have been stationed and with the Vietnamese Ministry of Health. The long range purpose of this medical aid effort is to help the Vietnamese to develop their own medical services and, consequently, one of the main duties of Australian medical personnel who work in Vietnam is to assist in the training of Vietnamese medical workers.

One area in which there has been a particularly close association between the World Health Organisation and the Department has been in adverse drug reaction reporting. It is now almost three years since the Australian adverse drug reaction reporting scheme was begun and in this time 870 reports of adverse reactions have been received by the Department's Registry from the medical profession. Of these 454 have been regarded as being of a serious nature. This internal programme has complemented that of overseas countries and the World Health Organisation. It is, I feel, indicative of the high regard felt overseas for the work being done



in this country by the Department and the Australian Drug Evaluation Committee that Dr B. W. Royall, Assistant Director-General of the Therapeutic Substances Branch and Secretary of the Australian Drug Evaluation Committee, should have been given the task of developing and maintaining a world-wide system of monitoring adverse drug reactions for the World Health Organisation.

Since the initial proposal of the World Health Organisation to conduct a pilot research project for an international drug monitoring scheme, scientific conferences were held in November 1965 and June 1966 to determine technical details such as the selection of information to be exchanged and the exact form of presentation, including dictionaries and codes and communication procedures. As a result of these discussions, a new adverse drug reaction report form has been designed for use within Australia which will facilitate reporting by doctors and enable Australia to participate in the WHO scheme. In May 1967, at the 20th World Health Assembly, the Director-General of WHO reported that, following negotiations with the Government of the United States of America, funds to support the drug monitoring scheme were now available together with suitable office space and equipment and data processing facilities. This accumulation of data on the adverse effects of drugs on a world-wide scale by a central body will result in more efficient drug surveillance and will lessen the probability of serious adverse reactions occurring in any of the participating countries.

### *Drug Surveillance in Australia*

Several significant developments took place in the Australian drug surveillance scheme during 1966-67. The first report of the Australian Drug Evaluation Committee, covering the years 1963-66, was published in April 1967, and made available to all interested bodies. This report highlights the valuable contribution by the Committee in the evaluation of new drugs and in the adverse reaction reporting scheme. A major development in the reporting programme has been the feedback of information contained in the Registry of Adverse Drug Reactions.

A cumulative list of suspected adverse reactions was sent to the various professional colleges, teaching hospitals, universities and medical institutions in September 1966 and again in March 1967 on a trial basis. The response was most encouraging and consideration is now being given to distributing these lists to all members of the medical profession. This step would fulfil the wider functions envisaged in the establishment of the Registry in 1964 and also help stimulate the level of reporting.

The drug surveillance system depends almost entirely on the information fed to it by a variety of sources including the medical profession, the drug manufacturers and health authorities both within Australia and overseas. I would like to record my appreciation, and that of my Department, for the excellent co-operation received from all parties since the inception of our Registry of Adverse Reactions in 1964. I am confident that this high level of co-operation will continue to ensure the success of the drug surveillance system.



## *Pharmaceutical Benefits*

The administration of the Pharmaceutical Benefits Scheme involves three problems which are important and are continuing in their nature. These are the safety and efficacy of drugs, the methods of limiting availability of pharmaceutical benefits and the increasing cost of the Scheme.

I have already indicated the measures taken concerning the safety of drugs and these are more fully reported later in this report. Related to this problem, however, is the listing of drugs as pharmaceutical benefits, i.e., as drugs available at the taxpayer's expense.

Because of the inherently complex structure of the human being no person is absolutely the same as his fellow and a drug which may be safe for the great majority may cause adverse reactions in a small minority. It follows that the more widespread the use of a particular drug, the more chances there are of side effects occurring.

From time to time instances occur where doctors or patients feel that restrictions imposed on the availability of drugs as pharmaceutical benefits are too severe. However, any restrictions or limitations on the quantities of drugs which may be provided as pharmaceutical benefits are made only on the recommendations of the Pharmaceutical Benefits Advisory Committee. This Committee is an expert, independent and statutory body and its existence is a safeguard against any possible arbitrary, bureaucratic actions on the listing of drugs.

In relation to the problem of the rising cost of the scheme, I have to again report an upward trend in costs. The cost to the Commonwealth of the Pharmaceutical Benefits Scheme in the year under review was \$101.3 million, an increase of \$9.5 million over the previous year.

The volume of prescribing in the past year increased by 7.4 per cent and the average price of prescriptions by 2.6 per cent. The increase in average price does not represent general price increases but reflects the influence of drugs recently added to the list of benefits and which are more expensive than other drugs used for similar purposes. Instances of this are shown in the Table on page 19.

The second Table on page 19 illustrates the increase in prescribing after the listing of new products within certain therapeutic groups—for example, anti-rheumatics, non-mercurial diuretics and drugs acting on blood vessels. These figures illustrate the extent to which the new drugs have come to be widely prescribed. In each of the cases quoted the new drug represented an addition or an improvement to a range of effective drugs already in wide use for the same conditions as those for which the new drug was indicated. However, the levels of prescribing for the new drugs were not compensated for by corresponding declines in the use of the older drugs in the particular groups.

Prescribing at the Government's expense is, as I have said before, simply prescribing at the community's expense. One of the major problems in administration of the Scheme is the assessment of whether the cost to the community of pharmacological treatment is being inflated by the use of high priced drugs in cases where less expensive drugs would be equally effective. This complex problem is the subject of a continuous



study in my Department and it is our objective, in co-operation with the medical profession, to reduce it as far as it is reasonable and practicable to do so.

### *Dependence-Producing Drugs*

It seems to me to be anomalous, but at the same time it appears to be true, that to cope with modern day life, where there are so many aids to easy living, many people apparently need sedatives, tranquillisers, stimulants and the like. Throughout the world there is a general recognition that dependence-producing drugs are a significant problem and one cannot ignore the small but growing problem here in Australia.

At the 20th World Health Assembly two resolutions regarding dependence-producing drugs were passed. The first of these restricts the use of L.S.D. to scientific and special medical purposes, provides for supervision by health authorities of production, distribution and use and advocates educational programmes. The second provides for supervision of transactions of psychotropic drugs from production to retail sale, licensing of producers and traders and prohibition of possession without authority.

Adequate national control of psychotropic drugs is a prerequisite to effective international control, but the difficulty in framing legislation to control these drugs is that central nervous system stimulants and depressants include many useful substances. The problem, in essence, is to provide controls which do not interfere with the legitimate use of such drugs, but which deny them to irresponsible users.

In Australia it is recognised that there is a problem of illegal supply of dependence-producing drugs and that there is a possibility of illegal manufacture of L.S.D. With other hallucinogenic drugs, L.S.D. has been placed on the Fourth Schedule of the Customs (Prohibited Imports) Regulations, which means that these substances may be imported only by licensed importers with the permission of the Comptroller-General of Customs. In all cases he refers applications to my Department for advice before granting or refusing permission. Within each of the States and the Territories L.S.D. is made available only to approved psychiatrists.



# National Health Benefits

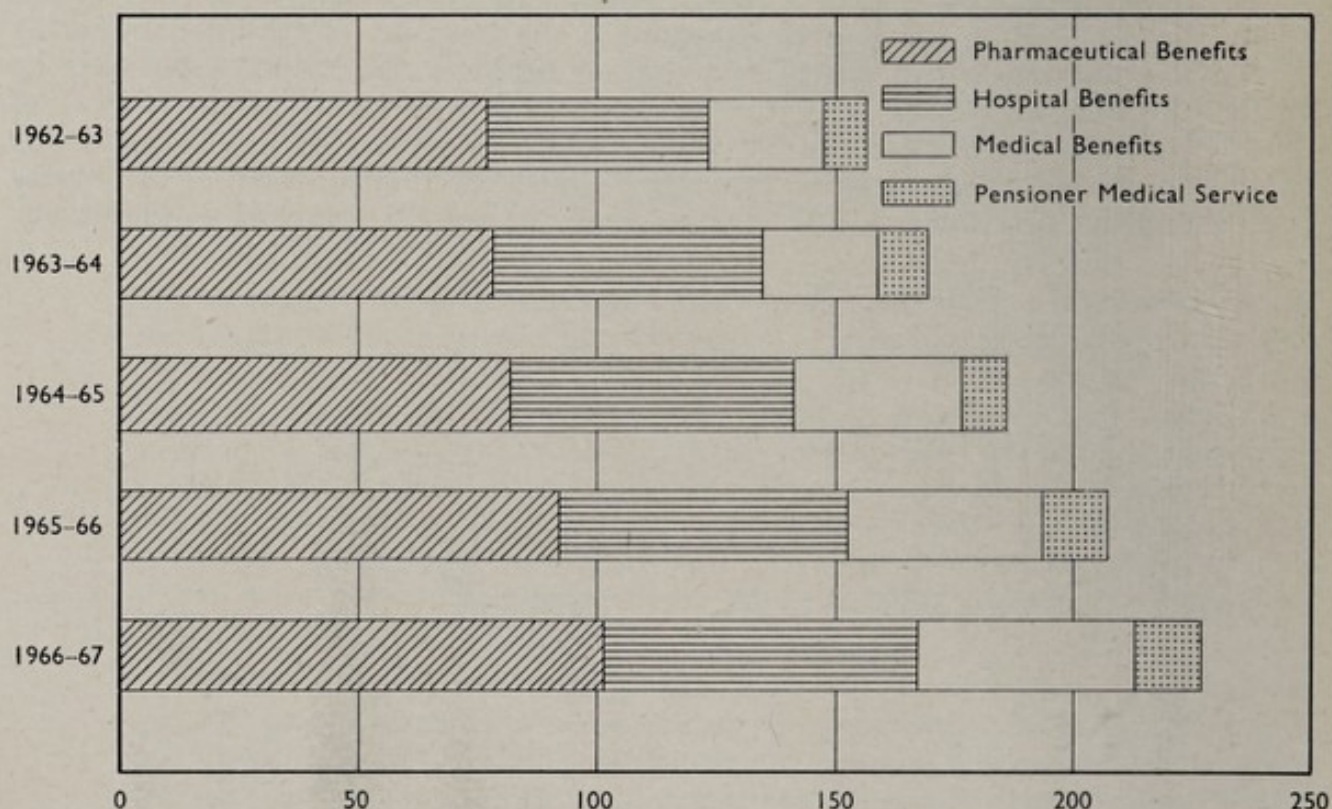
Expenditure on national health benefits, which comprise hospital, medical and pharmaceutical benefits and payments under the Pensioner Medical Service, increased by \$19.7 million in 1966-67 to reach the highest figure yet recorded of \$226.9 million.

There was a general rise in all areas, the greatest being for pharmaceutical benefits, which increased by \$9.5 million to account for expenditure of \$101.3 million. At the same time hospital benefits increased by \$6.7 million, medical benefits by \$2.6 million and Pensioner Medical Service payments by \$1.0 million.

The rise in hospital benefits is attributable, to a certain extent, to the increase from 1 January 1967 in the payments made to public hospitals for the free treatment of pensioners from \$3.60 to \$5.00 and, to a lesser extent, to the increase in the 'standard rate' benefit for Special Account contributors. The full effect of these changes will, of course, not be felt until 1967-68.

The graph illustrates the upward trend in national health benefits over the last five years.

Expenditure on National Health Benefits  
1962-63 to 1966-67  
\$ Million





## Hospital Benefits

Commonwealth benefits paid towards meeting the cost of hospital and nursing home treatment in 1966-67 totalled \$67,398,000, an increase of 11.0 per cent over the previous year. In addition, amounts paid by registered organisations by way of hospital fund benefits increased from \$57,562,000 in 1965-66 to \$69,011,000 in 1966-67. Statistics relating to hospital benefits are set out in Tables 2 to 7 on pages 91 to 93.

### *Insured Patients in Approved Hospitals*

Membership of registered hospital benefits organisations increased to 3,657,000, an increase of 168,000 over the previous year. The number of contributors and dependants covered by voluntary hospital benefit insurance continued to increase with 9,342,000 persons, or 80.0 per cent of the population, covered at 30 June 1967.

During the year public hospital charges were increased in all States and the Northern Territory. Most organisations introduced new tables to assist their members to meet the increased hospital charges. In some cases, however, the basic unit of benefit paid by the organisations did not enable the introduction of tables with benefits coinciding with the increased charges. The rise in hospital charges appears to have made contributors more aware of the need for increased hospital coverage and was responsible for a substantial movement into higher benefit tables. This movement, together with the continued growth and expansion of the health insurance organisation membership, resulted in fund benefit payments reaching a record level.

### *Special Accounts*

The operation of Special Accounts enables registered organisations to provide certain minimum fund benefits to contributors in respect of claims which would otherwise be disallowed under pre-existing ailment, chronic illness or maximum fund benefit rules. These minimum benefits are referred to as 'standard rate' benefits. However, where a contributor is insured in a table paying a fund benefit which is less than the standard rate, he receives benefit at the insured rate instead of the standard rate. These benefits are made possible because the Commonwealth guarantees the payments from Special Accounts and reimburses organisations for any deficits which may be incurred.

The National Health Act was amended by Act No. 44 of 1966, which was assented to on 18 October 1966. The Special Account provisions were amended by increasing the standard rate benefit in relation to hospital fund benefit from \$1.60 to \$3.00 per day. The amendment came into force on 1 January 1967, and applied to hospital treatment on and after that date.

Special Account membership increased from 32,143 at 30 June 1966 to 33,491 at 30 June 1967. It would appear that funds are continuing to make more use of their Special Accounts as a means of reducing their Ordinary Account liability.



## *Pensioners in Public Hospitals*

Under Section 54 of the National Health Act, the Commonwealth pays a benefit for each day that a pensioner or dependant receives free public ward treatment in a public hospital. Prior to 1 January 1967 this benefit was at the rate of \$3.60 per day. But, from this date, the rate was increased to \$5.00 per day as a result of an amendment to the National Health Act.

## *Uninsured Patients in Approved Hospitals*

Expenditure on Commonwealth hospital benefits for uninsured patients increased from \$2,371,000 in 1965-66 to \$2,376,000 in 1966-67. It would appear that this slight increase, which occurred in spite of a rise in the membership of health insurance organisations and in the number of people who became eligible for free public ward treatment in public hospitals as a result of the relaxation of the pensions means test and increases in the rates of pensions, may be attributed to the increased utilisation of hospital facilities by uninsured patients.

## *Nursing Home Patients*

The steady growth in the number of approved nursing homes and beds available for nursing home patients continued during 1966-67. As a result of this increase in the availability of beds, Commonwealth nursing home benefits paid during the year totalled \$22,767,000, an increase of \$1,544,000 over the previous year.

## *Approval of Hospitals and Nursing Homes*

The following are details of new premises approved in 1966-67 as hospitals or nursing homes for the purposes of the payment of Commonwealth benefits under the National Health Act:—

	No.	Beds		No.	Beds
Hospitals—			Nursing Homes—		
Public .....	10	519	Public .....	6	242
Private .....	8	277	Private .....	61	1,325
	—	—		—	—
Totals ....	18	796	Totals ....	67	1,567
	—	—		—	—

After allowing for variations arising from revocation of approvals and adjustment of bed capacities, the number of approved premises and beds as at 30 June 1966 and 30 June 1967, were:—

	30.6.66	30.6.67
Approved Hospitals—		
Number .....	1,109	1,098
Beds .....	72,335	73,644
Approved Nursing Homes—		
Number .....	1,059	1,098
Beds .....	33,075	35,537



## Medical Benefits

There were no increases in 1966-67 in the rates of Commonwealth medical benefits or in the ceiling medical benefits tables operated by the registered medical benefits organisations. The proportion of the cost of services covered by Commonwealth benefits in 1966-67 was 32.2 per cent. Fund benefits covered 35.5 per cent of the cost and the share borne by the contributor was 32.3 per cent. Comparative figures for the previous year were 33.9 per cent, 35.7 per cent and 30.4 per cent respectively.

The number of people covered by the Medical Benefits Scheme continued to grow. At 30 June 1967, 8,846,000 persons, or about 76.0 per cent of the population, were covered by the registered medical benefits organisations.

Commonwealth medical benefits expenditure amounted to \$43,841,000, an increase of \$2,559,000 over the previous year. The increase was due mainly to an increase in the total number of professional services given and the greater number of people covered. Medical benefits funds increased their payments of benefits from \$44,502,000 in 1965-66 to \$48,941,000 in 1966-67.

Statistics relating to medical benefits are set out in Tables 8 to 13 on pages 94 to 96.

### *Verification of Benefits Payments*

The verification by Departmental officers of Commonwealth benefits paid through registered hospital and medical benefits organisations to approved private hospitals and approved private nursing homes was continued during the year although, at times, considerable difficulty was experienced through shortage of inspections staff in some of the States.

The State Auditors-General, on behalf of the Commonwealth, continued to undertake the verification of Commonwealth benefits paid direct to State controlled public hospitals and nursing homes.

### *Registration Committee*

The Registration Committee, which is constituted under Section 70 of the National Health Act, consists of the Commonwealth Actuary or his representative and two officers of the Department of Health. The functions of the Committee are to examine and to make recommendations to the Minister for Health in regard to applications for registration as medical and/or hospital benefits organisations and proposed changes to the rules of registered organisations.

The Committee met thirty-three times in 1966-67 and made recommendations on 356 proposals submitted by organisations. During the year the Committee also considered applications by two organisations for cancellation of registration under the Act. The Minister approved the applications on the recommendation of the Committee.

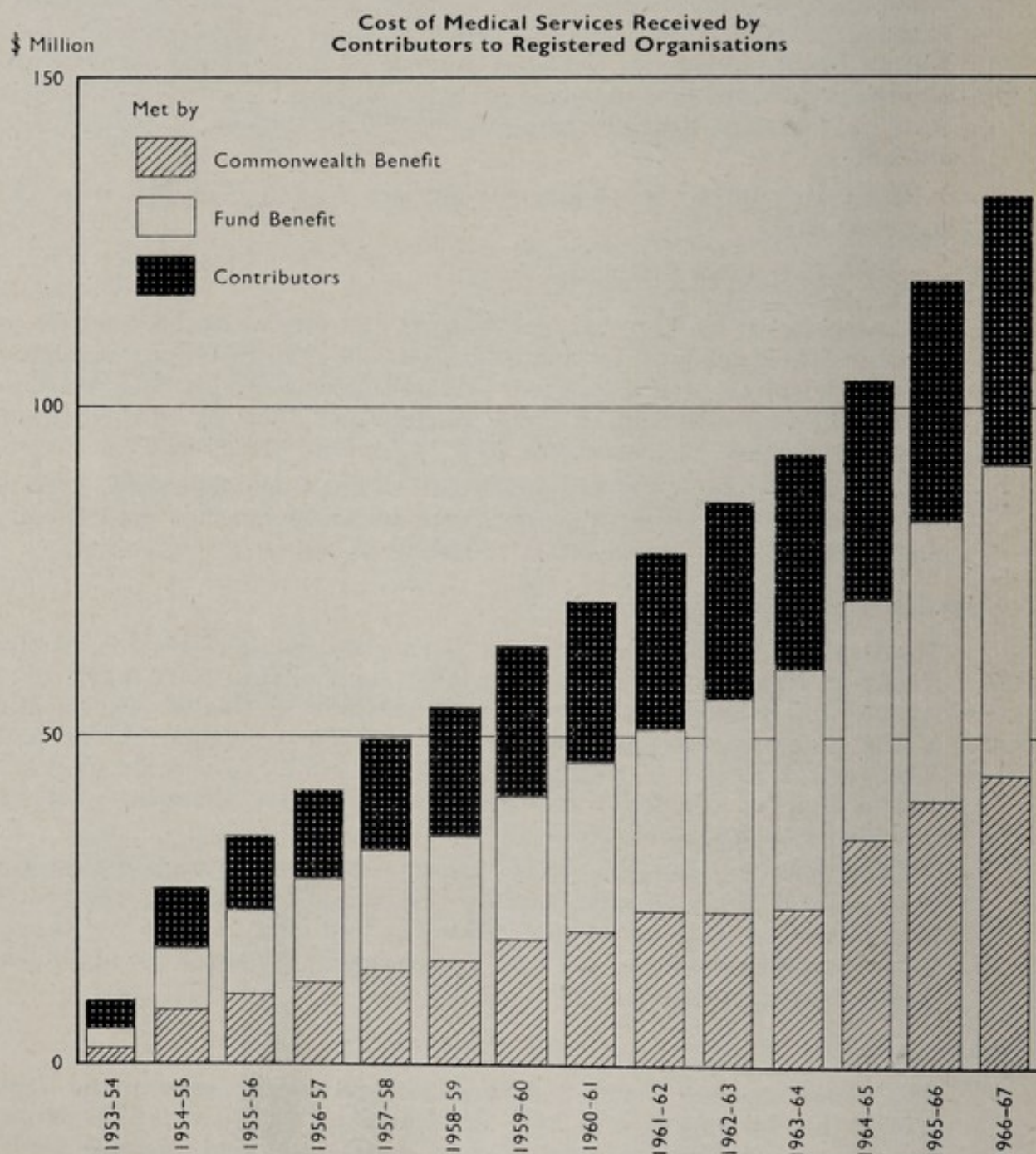
### *Commonwealth Health Insurance Council*

The Commonwealth Health Insurance Council is constituted under Section 136 of the National Health Act. Its functions are to advise the Minister for Health on matters relating to the Hospital and Medical 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 organisations, five members representative of registered organisations generally and one member nominated by the Federal Council of the Australian Medical Association.

The Council met in Canberra twice during the year, in December 1966 and March 1967. At these meetings the Council discussed a wide range of matters including the formulation of a code of ethics which all registered medical and hospital benefit organisations have been invited to adopt.





## Pensioner Medical Service

In October 1966 the National Health Act was amended by Act No. 44 of 1966. The definition of 'pensioner' under the Act was altered to permit enrolment in the Pensioner Medical Service of those persons who became pensioners as a result of increases in the pension rates. The date of effect of this Amendment was 30 September 1966. The definition of 'pensioner' in the National Health Act was again altered, with effect from 21 April 1967 by Act No. 14 of 1967. This enabled persons who qualify for an age, invalid or widow's pension under the Social Services Act, or a service pension under the Repatriation Act, by virtue of the relaxation of the pensions means test, and persons who became eligible for a sheltered employment allowance under the Social Services Act, to receive benefits under the National Health Act.

This amendment to the National Health Act meant that up to 41,000 persons and their dependants would become eligible to enter the Pensioner Medical Service. However, as the general practitioner services under the Pensioner Medical Service are provided by doctors in accordance with an agreement between the Commonwealth and the Australian Medical Association, the agreement of the Association is necessary before these new pensioners may receive free general practitioner attention. As at 30 June 1967, the A.M.A. had deferred a decision on the admission of the new pensioners to the Pensioner Medical Service. The Act does, however, make provision for the new pensioners to receive free public ward treatment in public hospitals and free pharmaceutical benefits irrespective of whether an agreement can be made with the Australian Medical Association for the extension of free general practitioner services. The new pensioners have consequently been given special entitlement cards to enable them to receive these benefits.

The number of pensioners and dependants enrolled in the Service continued to increase during the year, reaching 1,043,000 at 30 June 1967 compared with 1,006,000 at 30 June 1966. This represents 8.9 per cent of the population.

Doctors participating in the Pensioner Medical Service are remunerated by the Commonwealth on a fee-for-service basis. As from 1 May 1967 these fees were increased from \$1.60 to \$1.70 for each surgery consultation and from \$2.00 to \$2.15 for each home visit. The number of doctors participating in the service increased during the year from 6,034 at 30 June 1966 to 6,175 at 30 June 1967.

### *Payments to Doctors*

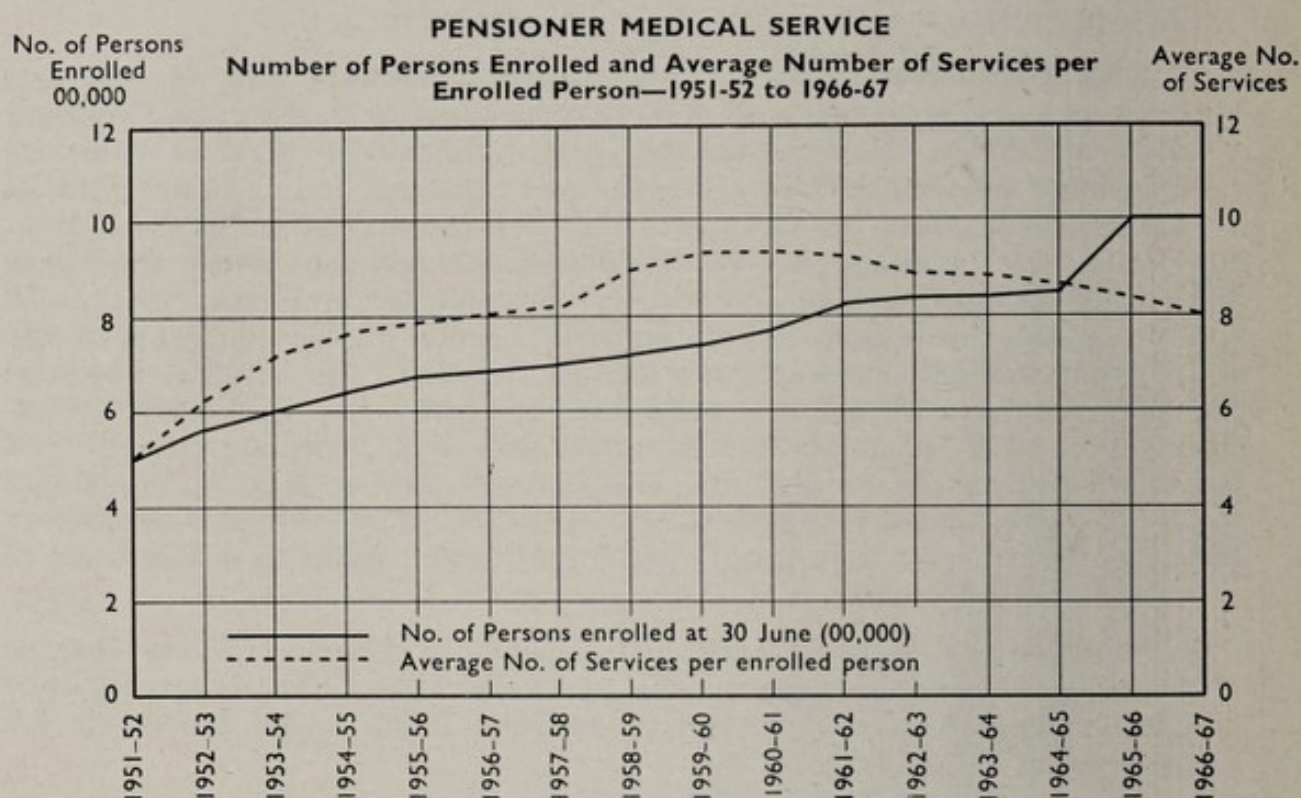
Total payments to participating doctors rose from \$13,365,000 for 1965-66 to \$14,351,000 for 1966-67. The 7.4 per cent increase in payments may be attributed mainly to the estimated 120,000 pensioners and 17,000 dependants who became eligible to receive medical services under the Pensioner Medical Service from 1 January 1966. The effect of providing services for these pensioners and dependants was felt for a full year for the first time in 1966-67. Statistics relating to the Pensioner Medical Service are set out in Tables 14 to 17 on pages 97 to 98.



## Committees of Inquiry

Medical Services Committees of Inquiry, established in each State in accordance with Section 110 of the National Health Act, among other things, inquire into matters in respect of the services or conduct of medical practitioners in connection with the provision of medical services under the Pensioner Medical Service.

During 1966-67, thirty references to these committees concerning the provision of medical services to pensioners were finalised. In twenty-five of these cases a total reduction of \$28,725 to doctors' claims was made. Also, in two cases the medical practitioners were reprimanded by the Minister. No action was taken with regard to four cases.



## Pharmaceutical Benefits

The rate of prescribing pharmaceutical benefit prescriptions in 1966-67 increased by 7.4 per cent. This compared with a 5.1 per cent increase in 1965-66 over 1964-65. Some of this increase is the result of the addition to the list of benefits in recent years of new drugs that have come to be widely prescribed, for example in the diuretic and analgesic drug groups. However, increases also occurred in the prescribing rates in other groups such as tranquillisers, anti-histamines, antacids and cough suppressants which could not be explained either by the addition of new drugs or the rate of growth of the population. The volume of prescriptions for broad-spectrum antibiotics also showed a substantial rise but in this case the easing of restrictions on erythromycin would have contributed to the increase. Prescribing of penicillins fell substantially, partly as the result of restrictions applied during the year to the prescribing of oral forms of benzathine and benzyl penicillin.



A feature of the prescribing pattern is that comparatively recent, and relatively high cost, additions to the list of pharmaceutical benefits have attracted a steadily increasing number of prescriptions. At the same time there has been no comparable decrease in the prescribing of other drugs with similar therapeutic classifications. Mainly because of this change in the prescribing pattern, the number of prescriptions per head of population rose to 4.61 compared with 4.36 in 1965-66. Similarly, because of the tendency to increased prescribing of relatively high cost drugs, the average cost per prescription rose from \$1.89 in 1965-66 to \$1.94 in 1966-67. This was despite the fact that significant price reductions were negotiated in some groups of widely used drugs.

Examples of relatively new high priced drugs which have attracted heavy prescribing are shown in the following table:—

<i>Name of Drug</i>	<i>Therapeutic Group</i>	<i>Date of Listing</i>	<i>Price per Prescription</i>	<i>Average Price of Other Drugs in Same Therapeutic Group</i>
Indomethacin	Anti-rheumatics	1.5.66	\$3.11	\$1.99
Frusemide	Non-mercurial diuretics	1.11.65	\$4.86	\$2.99
Methyldopa	Drugs Acting on Blood Vessels	1.11.63	\$5.98	\$2.26

The three drugs in question now rank high on the list of the most frequently prescribed proprietary products, yet none were available as benefits four years ago.

The following table illustrates the increase in prescribing within the respective drug groups after listing each new product:—

<i>Annual Rate of Prescribing of Therapeutic Group</i>		
<i>Therapeutic Group</i>	<i>Before Listing of New Drug</i>	<i>Current</i>
Anti-rheumatics	1,414,000	2,477,000
Non-mercurial diuretics	1,745,000	2,197,000
Drugs acting on blood vessels	2,112,000	2,868,000

### *Cost of Scheme*

Commonwealth expenditure on pharmaceutical benefits for the year totalled \$101,280,799. This included \$56,655,939 for prescriptions for the general public, \$15,344,592 for benefits dispensed in public hospitals and miscellaneous services and \$29,280,268 for prescriptions for pensioners.

Expenditure on combined prescription benefits provided under the general benefit and pensioner benefit schemes increased by 11.4 per cent. This compared with a 9.4 per cent increase in 1965-66 over 1964-65.

Prescription benefit expenditure exceeded the 1965-66 levels by \$3,577,893 or 6.7 per cent in the case of general benefit prescriptions and by \$5,209,141 or 21.6 per cent in the case of pensioner benefit prescriptions. An increase of \$710,097, or 4.9 per cent was recorded for expenditure on benefits provided in public hospitals and miscellaneous services. Patient



contributions for general benefit prescriptions were \$18,347,036 compared with \$17,481,228 paid in 1965-66.

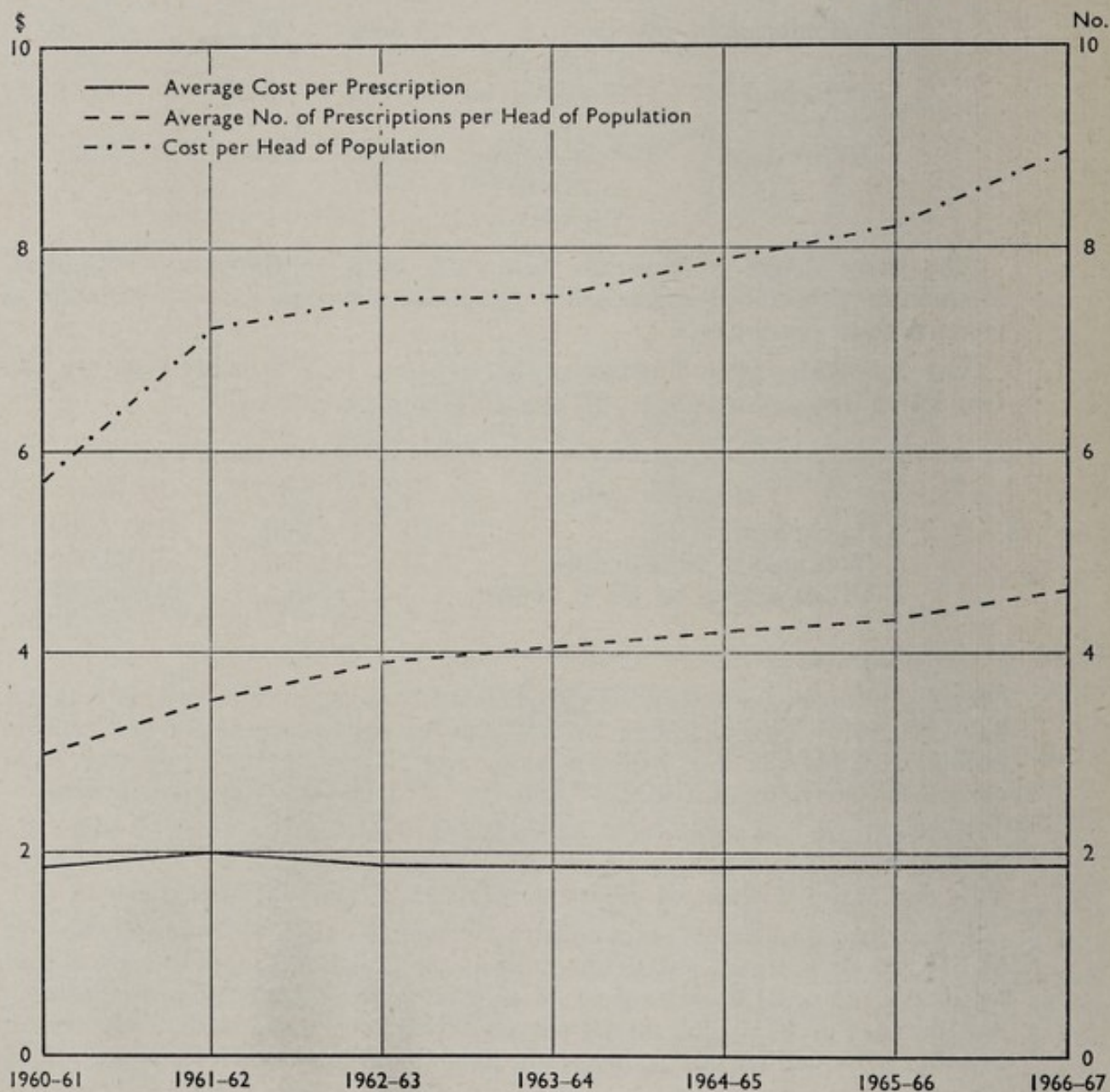
Benefit prescriptions for the year totalled 53,687,342, including 36,750,907 for general benefits and 16,936,435 for pensioner benefit prescriptions. This represents an increase of 1,666,356, or 4.7 per cent in prescriptions for the general public and 2,028,042, or 13.6 per cent in prescriptions for pensioners. The proportionately higher increases in both pensioner benefit expenditure and prescriptions occurred because of the impact of the transfer of 137,000 people from general benefits to pensioner benefits on 1 January 1966 subsequent to the easing of the means test. In the previous year the effect of this transfer was confined to the second half of the year.

#### PHARMACEUTICAL BENEFITS

Average Cost per Prescription, Average Number of Prescriptions per Head of Population and Cost per Head of Population

Average Cost per Prescription  
and Cost per Head of Population

Average No. of Prescriptions  
per Head of Population





The following comparative table shows prescription volumes and costs for benefits provided in the more frequently prescribed therapeutic groups in 1965-66 and in 1966-67.

Therapeutic Category	Year ended 30 June			
	1966	1966	1967	1967
	Prescriptions 000's	Expenditure \$000	Prescriptions 000's	Expenditure \$000
Broad Spectrum				
Antibiotics ....	4,168	14,760	4,564	13,872
Penicillins .....	4,392	11,045	4,216	9,500
Blood Vessels— drugs acting on .....	2,657	8,227	2,868	9,278
Hypnotics .....	6,619	6,914	6,792	6,893
Diuretics — non- mercurial .....	1,956	6,096	2,197	7,365
Analgesics .....	3,705	5,390	4,286	8,729
Anti-Histamines	2,606	4,707	2,974	5,223
Tranquillisers ..	707	2,036	803	2,339
Antacids .....	1,329	1,563	1,538	1,856
Sulphonamides ..	1,055	1,481	966	1,307
Expectorants & Cough Sup- pressants .....	1,044	894	1,167	973

The remaining expenditure was on a wide variety of drugs not so commonly used.

Detailed information of financial and statistical aspects of the Pharmaceutical Benefits Scheme is given in Tables 18 to 28 on pages 98 to 102.

### *Changes in Listings*

As a result of recommendations by the Pharmaceutical Benefits Advisory Committee, forty new preparations were added to the list of pharmaceutical benefits in 1966-67. Among the most important additions were five anti-diabetics, four drugs for the treatment of heart conditions, two sulphonamides and a tetanus antitoxin for the treatment of persons sensitive to equine serum. In addition, fifty new forms and strengths of existing pharmaceutical benefits were made available during the year.

The Committee also recommended that eighty-one preparations be deleted from the list of pharmaceutical benefits. In the main this followed the normal, periodic reviews by the Committee aimed at maintaining the schedule of benefits as an up-to-date, effective range of drugs.

### *Price Negotiations*

As in past years, officers of the Department conducted negotiations with manufacturers and these resulted in reductions in the prices of drugs during 1966-67. It is estimated that, if the rate of prescribing of the particular drugs remained constant, these reductions would save the Pharmaceutical Benefits Scheme approximately \$3,700,000 during a full financial year. The most significant price reductions related to antibiotics and diuretics, although most therapeutic groups of drugs were affected to some extent.



## *Joint Committee on Pricing Arrangements*

During 1966-67, the Joint Committee on Pharmaceutical Benefits Pricing Arrangements considered a number of aspects of pricing arrangements for pharmaceutical benefits. Its main activity during the past year, however, has been in connection with the survey of pharmacy earnings, costs and profits.

The survey, which is being conducted by a firm of independent consultants on behalf of the Government and the Federated Pharmaceutical Service Guild of Australia, is intended to provide information to serve as a basis for negotiations in regard to chemists' remuneration for dispensing pharmaceutical benefits. It follows an application by the Guild for increased remuneration. The Joint Committee was concerned initially with drawing up suggested terms of reference for the survey and examining the consultants' proposed survey plan. During the past year the Committee has been maintaining liaison with the consultants in the conduct of the survey.

In last year's Annual Report, reference was made to a pilot survey of a small group of pharmacies to test sample design and method. This pilot survey has been completed and the consultants have been accumulating information from the participating pharmacies for the main survey. At the close of 1966-67, the survey had not been completed, as a number of chemists, who had agreed to participate, had still not returned the questionnaires they had been asked to complete.

## *Committees of Inquiry*

The Pharmaceutical Services Committees of Inquiry considered eighty-seven references during 1966-67 arising out of the services or conduct of chemists in connection with the supply of pharmaceutical benefits. The majority of these references concerned the supply of pharmaceutical benefits which did not conform to the required standards of composition or purity. The Committees' recommendations on these references resulted in sixty-three chemists being warned to exercise greater care in dispensing, fourteen being reprimanded and the suspension for two months of one chemist's approval to supply pharmaceutical benefits. Seven chemists gave satisfactory explanations to the Committees and two cases were not finalised at 30 June 1967.

The Medical Services Committees of Inquiry considered two references involving the prescribing of pharmaceutical benefits. Following on the report and recommendations in these cases, one doctor had his authority to write pharmaceutical prescriptions revoked. No action was taken in the other case.

## *Court Proceedings*

Court proceedings were instituted against two doctors for breaches of the National Health Act. Both were convicted and fined and subsequently their authorities to write prescriptions for the supply of pharmaceutical benefits were revoked.



# Tuberculosis

The year 1966-67 can again be claimed as one of great success in the campaign against tuberculosis. Much has been achieved in recent years in the fight against tuberculosis but there is still no room for complacency.

There are three considerations that must be kept in mind. Firstly, there were still 2,549 new cases notified in 1966, a fall of 354 compared with 1965, but still a large figure. Including old cases, there were some 2,500 known infectious patients in 1966. Secondly, tuberculosis is an infectious disease and, in the absence of a completely efficient immunising agent, any infectious disease can rapidly recrudescence. Thirdly, there are vast areas of the world where tuberculosis remains a scourge. The battle against tuberculosis in these areas is far from being won. In some of these countries the emergence of drug resistant organisms has its implications and dangers for the countries with advanced tuberculosis control programmes like Australia.

The final control of tuberculosis is not yet in sight. It may lie in the introduction of a more efficient immunising agent, the discovery of simpler and cheaper drugs, or the slower, year-to-year improvement which results from the application of the present methods of control. A reasonably, but not completely, effective immunising agent, BCG vaccine, is available and this is being used in larger quantities as the incidence of tuberculosis falls, because the decline in incidence also means a decline in immunity of the population. In the meantime it is necessary to intensify the campaign against tuberculosis until it can be reduced to the status of a minor disease. The number of new cases and the number of tuberculosis allowances fell in 1966 while the number of deaths was one of the lowest yet recorded. Details are given in Table 30 on page 103. Reactivated cases—patients with known old treated or untreated lesions who break down—now account for almost ten per cent of the total pulmonary notifications. This illustrates the importance of keeping the known cases under supervision indefinitely.

## *Special Projects*

In conjunction with New South Wales authorities, an inaugural Australian Clinical Tuberculosis Conference was held in Sydney from 27 February to 3 March 1967. Delegates attended from all States, the Australian Capital Territory, the Northern Territory and the Territory of Papua and New Guinea. The objectives were to stimulate the exchange of ideas between States and discuss the future of tuberculosis control. Most of the papers were contributed by full-time medical officers in the State divisions of tuberculosis. The conference was highly successful in its objectives and several of its papers have been accepted in full for publication in the Medical Journal of Australia while others will appear in condensed form.

In April 1967 a revised version of the document 'Bacteriological Investigations for Mycobacteria Including Drug Sensitivity Tests' was produced.



## Public Health

The volume of work undertaken by the Public Health Branch increased rapidly during 1966-67. This increase necessitated the creation of the position of Assistant Director-General to co-ordinate the functions of the various sections within the Branch. A position of Executive Officer, to supervise the clerical staff and to assist the First Assistant Director-General and Assistant Director-General, was also created during the year.

All aspects of public health are the responsibility of the Branch. During the year special studies were made by officers of the Branch of the association of smoking with health, fluoridation of public water supplies, and the advertising of proprietary medicines in media other than radio and television.

### *Vaccination Against Poliomyelitis*

The Australian States and Territories, with the exception of Victoria, have now implemented the change from Salk vaccine to oral Sabin vaccine in their campaigns against poliomyelitis. It is estimated that during the next year some eight million doses of Sabin vaccine will be administered throughout Australia. At the 64th Session of the National Health and Medical Research Council in April 1967 a previous recommendation was re-affirmed in regard to the efficacy and safety of Sabin vaccine.

Six suspected cases of poliomyelitis were referred to the Poliomyelitis Sub-Committee of the National Health and Medical Research Council. Only one of these cases was considered to be poliomyelitis. The case was due to type one poliomyelitis virus and was in an unvaccinated female aged sixteen years.

### *Broadcasting and Television Censorship*

The provisions of the Broadcasting and Television Act require the approval of the Director-General of Health for all medical talks and advertisements for medicines on radio and television. Details of the number of scripts examined during 1966-67 are given in Table 37 on page 106.

In comparison with the previous year there was an increase of 45.8 per cent in the number of radio scripts examined. There was a decrease of 19.6 per cent in the number examined for television. The result was an overall increase of 27.6 per cent in the number of scripts examined.

During the year the percentage of radio scripts amended and rejected showed very little movement when compared with 1965-66. The percentage amended increased from 29.0 per cent to 31.8 per cent while the percentage rejected rose only 0.1 per cent to 3.2 per cent. However, the numbers amended and rejected for television showed significant increases. Amendments increased from 30.5 per cent to 38.3 per cent of the number examined and rejections from 0.3 per cent to 5.5 per cent. These increases were due largely to amendments made to the standard guide for the preparation and censorship of medical talks and advertisements.



## *National Poisons Register*

The first supplement to the National Poisons Register Manual was issued in December 1966. This supplement covered approximately 3,500 additional substances not contained in the original manual and a second supplement, covering a further 3,500 substances is currently being prepared. A further issue of the Poisons Information Bulletin was also made during the year and it is anticipated that an increased number of supplements and bulletins will be issued next year. The States are co-operating with the Department in providing poison case reports. These reports will form the basis for statistics being compiled on cases of poisoning reported throughout Australia.

## *Joint FAO/WHO Food Standards Programme*

The Department continued to take an active interest in the proceedings of the Codex Alimentarius Commission during 1966-67. A senior medical officer of the Public Health Branch represented the Department at the fourth session of the Commission in Rome, in November 1966, at the Food Hygiene Committee, in Washington, June 1967 and at the Food Labelling Committee in Ottawa, June 1967. The work in connection with the Commission and its committees was undertaken in collaboration with the Department of Primary Industry. The volume of work has increased as new standards are constantly being prepared and Australia will be expected to continue to play an active role in this field.

## *Nursing Section*

As in previous years, basic, post-graduate and ad hoc courses have been arranged for nurses from overseas countries under the Government sponsored schemes. At the end of 1966, thirty-five overseas nurses completed post-graduate courses at the Colleges of Nursing in Australia under technical assistance programmes.

During 1966-67, there was a substantial increase in the number of ad hoc programmes arranged. The numbers of students from different countries involved in these programmes were Burma 1, Ceylon 1, India 2, Indonesia 1, Papua and New Guinea 1, Philippines 2, South Vietnam 3 and Thailand 6. Twenty-six students commenced post-graduate courses at the Colleges of Nursing in 1967.

During the year, fifteen students completed their basic nursing training in Australia. As Malaysia now provides adequate facilities for basic training, the last of the students under the Malaysian Government Assistance Plan will complete their courses in 1968. Basic training has been commenced by one Colombo Plan student from the Maldives Islands. Ad hoc programmes have been arranged for holders of two WHO fellowships and basic training for a WHO scholar from the British Solomon Islands.

Research into the services supplied by various public health nurses employed in the fields of occupational, medico-social and community health was undertaken and details of training compiled. Details of all post-basic courses conducted in Australia and of the content of basic training in selected schools of nursing have also been compiled.



A questionnaire on the functions of home nursing services, designed to assess the extent of the service being given to the community was compiled and sent to all home nursing services in Australia which receive the Commonwealth home nursing subsidy.

### *Committees and Conferences*

The Public Health Branch is responsible for providing the secretariat for nine committees and six sub-committees of the National Health and Medical Research Council. Officers of the Branch act either as chairman or convener of these committees and sub-committee and the agenda and reports are prepared in the Branch.



*Sabin vaccine has proved popular in school vaccination programmes*



## Therapeutic Substances

Commonwealth activities in the control of therapeutic substances are co-ordinated by the Therapeutics Substances Branch under the provisions of the Therapeutic Substances Act and Regulations and, in respect of certain items, the Third Schedule to the Customs (Prohibited Imports) Regulations. The Branch also maintains the Registry of Adverse Drug Reactions and provides the secretariat of the Australian Drug Evaluation Committee.

### *Standard of Therapeutic Substances*

A number of controlled therapeutic substances are subjected to examination in respect of packaging, labelling and conformity to standard for importation into Australia. To avoid undue delays to importers, the analyses are carried out by the Department of Customs and Excise Laboratories in the various States.

The following table indicates the number of samples assayed by the Customs' Laboratories for the year ended 30 June 1967. Examination of the other categories of therapeutic substances is conducted by the National Biological Standards Laboratory and details of these examinations are outlined in the section of the report relating to that Laboratory.

<i>State</i>	<i>No. of Samples</i>	
	<i>Passed</i>	<i>Failed</i>
New South Wales .....	121	4
Victoria .....	122	1
Queensland .....	..	..
South Australia .....	37	1
Western Australia .....	5	..
Tasmania .....	1	..

### *New Therapeutic Substances*

Details of the information required from manufacturers and importers to allow adequate assessment of the safety of new therapeutic substances is outlined in a circular published by the Department. This circular, Form N.D.F.2, is distributed to drug manufacturers and importers and copies are available to interested persons. The data supplied is evaluated by the Department and assessments are circulated to the members of the Australian Drug Evaluation Committee for consideration. In some instances, however, the Department refers full details to the Committee for advice.

### *The Australian Drug Evaluation Committee*

Dr Edgar Thomson, Chairman of the Australian Drug Evaluation Committee since its inception, resigned on 31 December 1966, after three and a half years most valuable service, to take up the position of General



Secretary of the Australian Medical Association. Sir William Morrow, a distinguished physician and a member of the Committee, was appointed to the position of Chairman. Dr Stanley J. M. Goulston, honorary physician at the Royal Prince Alfred Hospital, Sydney, was appointed to fill the resultant vacancy.

The Committee, which is composed of seven members eminent in the fields of clinical medicine and pharmacology, normally meets every two months and has met on twenty-one occasions since its inception in June 1963. Since that date the Committee has made 131 resolutions relating to drugs under its terms of reference. The first report of the Australian Drug Evaluation Committee, covering the years 1963-1966, was published in April 1967 and widely distributed to medical practitioners, hospitals and drug manufacturers.

### *Registry of Adverse Reactions*

There has been a continuing response by the medical profession in the reporting of adverse drug reactions by means of the voluntary reporting scheme. Since the scheme was introduced in August 1964, 870 reports have been received from the profession concerning adverse reactions. A major development in the reporting programme has been the feedback of information contained in the Registry. Cumulative lists of suspected adverse reactions have been forwarded to various professional colleges, teaching hospitals and medical institutions. In view of the favourable response, consideration is being given to distributing these lists to the entire medical profession.

In the past year a new adverse drug reaction report form was distributed to the medical profession. This new form, designed to facilitate reporting of adverse drug reactions, will enable Australia to participate in the World Health Organisation drug monitoring pilot scheme. At the 20th World Health Assembly, in May 1967, the Director-General of WHO reported that negotiations with the Government of the United States of America had been completed and that funds to support the scheme were now available, together with suitable office space and equipment and data processing facilities. The accumulation of world-wide data on the adverse effects of drugs will undoubtedly result in a more efficient drug surveillance scheme which will lessen the probability of serious adverse reactions to therapeutic agents.



# Quarantine

## Human Quarantine

The General Quarantine Branch carried out its functions efficiently in the past year and no cases of quarantinable disease entered Australia during this period. Quarantine officers at all first ports throughout Australia carried out inspections of incoming travellers and examinations of vaccination certificates and any necessary measures were implemented. In addition, quarantine stations throughout Australia were kept in a state of preparedness in case of any epidemic of a quarantinable disease such as smallpox, cholera, yellow fever or plague. General Quarantine Branch officers also handled a large volume of work at airports and sea ports throughout Australia on imports, in the inspection of ships and aircraft, the disinsection of aircraft and other related duties.

During the year considerable attention was paid to forward planning in two fields. These were the possible introduction in the future of aircraft carrying up to 400 passengers and the planned introduction of container handling of overseas cargo. Both of these developments may entail the adoption of new quarantine procedures and, on this account, every aspect of quarantine clearance is being critically reviewed.

The numbers of vessels and persons being cleared through quarantine continues to increase every year. Over the past year 4,040 ships and 3,918 aircraft, carrying a total of 781,756 persons passed through quarantine. This compares with 3,488 ships, 3,297 aircraft and 733,815 persons during the 1965-66 period. To deal with these increases additional staff has been made available.

## *Smallpox*

The threat of the introduction of smallpox continues in view of its occurrence in countries to the north of Australia. Some 65,500 cases were reported throughout the world in 1966 and, of these, some 10,100 cases were in Indonesia. Because of this, particular attention is paid to the vaccination certificates of persons arriving in Australia from overseas. On 1 January 1967 a new format for these certificates was introduced by the World Health Organisation. This measure has been incorporated in the Australian vaccination requirements. Vaccinations performed since 1 January 1967 must be recorded on a form on which are indicated the origin and batch number of the vaccine used. In addition, the vaccine must be certified to conform to the recommended requirements of the World Health Organisation. The vaccine used in Australia is manufactured by the Commonwealth Serum Laboratories and meets the recommended requirements.

In 1966-67 2,730 persons from overseas were vaccinated against smallpox on arrival by air because they did not have satisfactory vaccination certificates. The difficulties in this regard have continued despite



the efforts of the Department to inform airline operators of our requirements. Further measures to correct this situation are being examined. Seventy-one air travellers from abroad who were not vaccinated and who refused vaccination were quarantined in a quarantine station for the prescribed period.

A group of six quarantine officers visited India in April 1967 for a two-week training course in the diagnosis of smallpox. On this occasion the instruction was at the Haffkine Institute and the Kasturba Infectious Diseases Hospital at Bombay. As in previous courses in India every facility was placed at the disposal of these officers by the Indian authorities and this is much appreciated. Subsequent to this course the Commonwealth Director of Health, Western Australia, visited New Delhi for discussions with officers of the Indian Ministry of Health concerning forthcoming training courses.

### *Cholera*

The cholera situation continues to be unstable and there were epidemics in Burma, India, Pakistan, Indonesia, Nepal, the Philippines, Thailand and South Vietnam. Outbreaks also occurred in West Irian and Iraq. Steps were taken to proclaim Iraq as an infected area under the Quarantine Act until the disease came under control. Travellers from infected areas and proclaimed countries are required to be currently vaccinated against cholera for entry to Australia. It was necessary to vaccinate 1,064 persons who arrived by air without satisfactory international certificates of vaccination against cholera.

### *Yellow Fever*

Yellow fever occurs in the African and American continents and, as the mosquito vector exists in Australia, travellers coming from yellow fever areas must be currently vaccinated against yellow fever and hold international certificates of vaccination against the disease.

### *Plague*

Concern has been expressed in international health circles at the incidence of plague throughout the world and in particular the plague epidemic occurring in South Vietnam. The exact extent of infection in Vietnam is not known, but epidemics have been reported from twenty-seven of the forty-four South Vietnam provinces.

Plague has not occurred in Australia since 1923 and routine measures are taken to prevent the introduction of cases of the disease or of the animal vectors of the disease. These measures comprise the inspection by quarantine personnel of all incoming vessels and the requirement that all sea vessels arriving in Australia must be in possession of a current de-ratting certificate or an exemption certificate in the form prescribed by the World Health Organisation. The methods used in Australia in this aspect of quarantine have recently been reviewed and it is not considered that any change in procedures or legislation is at present warranted. Special attention is, however, being given to vessels arriving from Vietnam.



The subject of plague was discussed at length at the First Regional Seminar on International Quarantine held by the World Health Organisation at Manila in March 1967. The Department was represented at the seminar by the Commonwealth Director of Health, New South Wales.

### *Facilitation in Quarantine*

Quarantine activities concern people, commercial interests, ships, aircraft and government departments. It has always been the intention of the Department of Health that its quarantine procedures should be carried out with every regard to these varied interests but without any diminution in the effectiveness of the controls. With this in mind new methods have been devised over the years. These include the method of granting radio pratique for ships in which the inspection of passengers is carried out by the ships' surgeons. More recently a method has been adopted of granting pratique to ships which, on arrival in Australia, are within fourteen days of departure from an overseas port and on which all persons are satisfactorily vaccinated. Both of these measures have worked successfully and have not resulted in any lowering of Australia's quarantine standards.

The special factors associated with air travel are also kept in mind. Representatives of the Department confer regularly with airline operators in each State and with other government departments, with a view to diminishing delays and generally facilitating the passage of travellers through quarantine and other necessary formalities. At the national level, representatives of the Department attend meetings of the National Advisory Facilitation Committee to draw up and define overall policy. In the past year the Department was also represented at a combined meeting of the International Association of Travel Agents and the International Civil Aviation Organisation in Sydney.

### **Animal Quarantine**

Once again, in 1966-67, the Animal Quarantine Service achieved its objective of preventing the entry into Australia of the more serious animal diseases existing overseas. These diseases, once established in this country, would have serious economic effects on our livestock industries. A continuous, close vigilance is therefore maintained on all means by which exotic animal diseases could enter Australia.

### *Imports Subject to Quarantine*

For some years there has been a complete ban on the importation of most species of animals from most parts of the world. Exceptions are poultry and other birds from New Zealand, horses, dogs and cats from the United Kingdom, Ireland and New Zealand and certain zoological animals imported into registered zoos where they are kept in permanent quarantine. Approved laboratories are also sometimes given permission to import small animals for scientific purposes and these institutions, together with circuses registered for the keeping of such animals, are kept under constant quarantine control.

A variety of goods of animal origin such as hair, special types of wool, skins, hides, canned meat and other foodstuffs were admitted during the



year under quarantine control and, where necessary, these goods were subjected to special treatment on arrival. Continued control over the importation of cultures, vaccines, pathological specimens and biological products was also exercised in collaboration with the Therapeutic Substances Branch. This control covered the importation of therapeutic substances such as sera, vaccines and glandular extracts derived from animals. A standard form of application to import biological materials, laboratory animals and insects was introduced during the year, together with a standard form of printed permit to import and transfer these classes of quarantinable material. This innovation shows promise of reducing the time required to process applications.

The number of animals imported decreased in 1966-67 when 2,797 animals were imported compared with 4,315 in 1965-66. Detailed statistics for 1966-67 are given in Table 40 on page 107.

### *Exports Subject to Quarantine*

The Animal Quarantine Service is responsible for issuing health certificates for the export of animals to overseas countries and for ensuring that any tests and health conditions specified by importing countries have been completed. Negotiations to ascertain the current requirements of a number of overseas countries continued during the year.

### *Disposal of Ships' Garbage*

Particular attention is paid to the disposal of ships' garbage in order to prevent the introduction of exotic diseases into Australia. An offer has been made by the Commonwealth Government to the State Governments to pay the full cost of building incinerators at selected ports. This offer has, to date, been accepted by the Governments of New South Wales, South Australia and Tasmania.

### *Meetings and Conferences*

The Director of Veterinary Hygiene attended meetings of the Standing Committee on Agriculture in July 1966 and February 1967 and a meeting of the Cattle Tick Control Commission, of which he is Chairman, in April 1967. In November 1966 the Director and a Senior Veterinary Officer attended an Exotic Diseases Committee Meeting, the Biennial Conference of Commonwealth and States' Veterinarians and the Chief Quarantine Officers (Animals) Conference. A further meeting of the Exotic Diseases Committee was arranged and attended in Melbourne in April 1967. Other meetings attended during the year by the Director were a Consultative Committee on Newcastle Disease, the Australian-New Zealand Technical Committee on Animal and Plant Quarantine and the Veterinary Public Health Committee.

### *Overseas Visits*

Following an outbreak of foot and mouth disease in England in 1966 the Director of Veterinary Hygiene and the Assistant Principal Veterinary Officer (Disease Control) of the New South Wales Department of Agriculture spent ten days at the outbreak area in Northumberland. Here they



observed the proven methods and procedures carried out by the British Ministry of Agriculture and Food for the eradication of this disease. These observations provided valuable information for all States and Territories, who are now finalising reviews of plans for the control and eradication of foot and mouth disease should it ever enter Australia.

In May 1967 the Director of Veterinary Hygiene attended the annual meeting in Paris of the Office International des Epizooties as the Australian delegate. During the course of this visit he also visited and conferred with the United Kingdom Ministry of Agriculture, Fisheries and Food, the Irish Ministry of Agriculture and the Food and Agriculture Organisation, Rome. In July 1966 a Senior Veterinary Officer visited Suva, Fiji, where he attended the Technical Meeting on Livestock Production and Health of the South Pacific Commission. While in this area, he visited Noumea where discussions were held with the New Caledonian authorities on items of mutual quarantine interest.

## **Plant Quarantine**

Active vigilance against the importation of plant pests and diseases was maintained during the year. The full and active co-operation in these activities of the State Departments of Agriculture, whose officers supervise plant quarantine activities in the States on behalf of the Commonwealth, was readily given at all times. In some cases the C.S.I.R.O., universities and other institutions such as the Waite Agricultural Research Institute assisted.

### *Legislation*

Three new plant quarantine proclamations came into force during the year. Proclamation 56P, gazetted on 27 October 1966, provides for the prohibition, except by permit, of eight tropical grass species and nine tropical legume species. Some of these species could possibly make a significant contribution to agriculture in the tropical areas of Australia but, as the introduction of large quantities of seed could be the means of introducing devastating seed borne diseases, it was considered necessary to limit the amount of imports.

Proclamation 57P, which restricts more closely the importation of walnuts into Western Australia, was gazetted on 9 March 1967, and Proclamation 58P, permitting the Department to approve the importation of harmless species of cacti, was gazetted on 29 June 1967.

### *International Meetings*

The fifth meeting of the Australian-New Zealand Technical Committee on Animal and Plant Quarantine took place in Canberra in February 1967. Discussions on matters of mutual interest included problems relating to nursery stock, seed, fruit and vegetables. The sixth meeting of the Plant Protection Committee for South East Asia and Pacific Region was held at Kuala Lumpur in March 1967. Australia was represented by the Director of Plant Quarantine as delegation leader, and the Chief of the Division of Plant Industry of the Department of Agriculture, Stock and Fisheries, Territory of Papua and New Guinea. Representatives of



fourteen countries attended, together with an observer from the South Pacific Commission.

On technical matters the Plant Protection Committee approved recommendations relating to ten crops or groups of crops. A proposal to extend the geographical scope of the Plant Protection Agreement, under which the Committee operates, was discussed and a recommendation made to the Food and Agriculture Organisation, which sponsors the Plant Protection Committee. Attention was focussed on losses caused by pests and diseases in the region, training in plant quarantine, and the intensification of research training and demonstration in the field of plant protection.

### *Meeting of Chief Quarantine Officers*

The Chief Quarantine Officers (Plants) from all States and the Northern Territory met in Sydney in July 1966. Discussion took place on items of particular interest to plant quarantine, including bulk commodity imports, nursery stock policy, a course for plant quarantine officers and procedures to be followed when a new disease is discovered.

### *Course for Asian Students*

During September 1966 a course on plant quarantine for Asian students, arranged by Dr T. H. Harrison, former Director of Plant Quarantine, was held in Canberra. The course was made possible by an allocation of funds from the 'Freedom from Hunger Campaign' and students came from Pakistan, India, Singapore, Thailand, Ghana, the Philippines, Mauritius and Fiji. Administrative arrangements for the course were made by the Overseas Training Section of the Department of External Affairs. Lectures were given by the staff of the Plant Quarantine Branch on plant quarantine conditions in Australia, fumigation of imported plants and plant products, quarantine in relation to seeds and weeds, and plant quarantine publicity. Some time was spent by the participants at the plant quarantine laboratory and quarantine glasshouse at Yarralumla Nursery, where the investigation work being undertaken and post-entry quarantine procedures were explained and demonstrated.

### *Plant Quarantine Officers' Course*

In May 1967 a course of one week was held in Melbourne for two plant quarantine officers from each State and the Northern Territory. This was the first course of its type and was considered a success. It was arranged by quarantine officers of the Canberra office with the full and ready co-operation of the Chief Quarantine Officer (Plants) for Victoria and his staff. Subjects covered included the principles and systems of plant quarantine, quarantine legislation, seeds and seed-borne diseases, weeds, treatment procedures for various plant items, soil, bags and packing material, nursery stock and a review of quarantine plant pathology and entomology.



## *Container Cargo Handling*

The introduction of container handling of overseas cargo will present new problems to be overcome by the Plant Quarantine Service. Containers with a wood content will have to be examined by quarantine officers to ensure that the wood has not become infested while overseas. As there are a number of serious insect borers which attack seasoned timber, overseas organisations have been advised to treat all timber, including plywood, used in the construction of containers. The whole problem of quarantine with containerised cargo is under active study by the Department in collaboration with the Department of Customs and Excise.

## *Sirex Wasp*

The administration of the National Sirex Fund was transferred from the Department of Health to the Department of National Development on 1 July 1966, but this Department has continued to play its role in the eradication campaign by dealing with the quarantine aspects. The National Sirex Fund Committee continued its work during the year. Survey and control work in Victoria has been effective in checking the spread of Sirex and the Committee believes that the serious economic threat to pine plantations, which existed in 1962, has been reduced. However, it should be stressed that the pest has by no means been eliminated. At a meeting of State and Commonwealth Ministers in March 1967, a most encouraging report on the research work undertaken in Australia was received. At this meeting it was agreed to recommend to all governments that the campaign be continued in 1967-68.

## *Carpenter Ants*

Early in June an unusually severe infestation of Carpenter ants was found on a vessel in the port of Sydney. Prompt action was taken to treat the cargo as it was discharged, as well as the dunnage, which is believed to have been the source of the infestation.

## *Subterranean Clover*

During the year advice was received that Australian produced subterranean clover seed of a new strain had been exported to India for multiplication in the Northern Hemisphere to gain one season. The resultant seed is to be returned in quantity for distribution in Australia. Because this type of clover develops its seeds underground, and because subterranean clover in Australia is relatively free of disease, there is a definite quarantine hazard from soil carried with the seed from India. Steps are being taken to prevent the introduction of plant and animal diseases with this seed.

## *Biological Control of Weeds*

Discussions have taken place with the C.S.I.R.O. and the Queensland Department of Lands on biological control of the weed 'Groundsel', which is a native of Florida, U.S.A. Following the procedure adopted for the screening of insect parasites of lantana, agreement was reached that an officer from the Queensland Department of Lands should carry



out screening tests in Florida with nominated parasites on certain plant hosts approved by the Department of Health. Carrying out screening tests overseas has advantages over attempting limited screening under quarantine in Australia.

### *Laboratory and Glasshouses*

For some time it has been recognised that there are many matters peculiar to plant quarantine which can only be resolved by the Plant Quarantine Branch carrying out its own investigations. During 1966-67, this type of work was begun with the development of laboratory and glasshouse facilities at Yarralumla Nursery, Canberra. Investigations have begun into various plant quarantine treatments including methyl bromide fumigation of plants, seed treatments for seed-borne diseases and effective means of establishing imported plants.

In a co-operative venture with government authorities and private enterprise in the Territory of Papua and New Guinea, several hundred tea clones were grown in intermediate quarantine at Yarralumla before being forwarded on to the Territory. This was done to avoid the risk of introducing Tea Blister Blight, which could ruin the prospects of this newly developing and important industry in Papua and New Guinea.

### *Disease Outbreak*

The lucerne disease, bacterial wilt, was reported from the Gippsland area, and from Katunga, in the Goulburn Valley, Victoria. It is thought to have been present for some time, probably about fifteen years. No other State has reported its occurrence.



## Management Services

When the administrative structure of the Department was reorganised in mid-1964 the Management Services and Benefits Division was established with three branches. These are the Establishments and Finance Branch, the Planning and Legislation Branch and the Medical and Hospital Branch. The activities of the Medical and Hospital Branch have been mentioned in previous Annual Reports under the general heading National Health Benefits, as they are again this year on page 13. No mention has been made previously, however, of the other two branches. As the volume and scope of their activities have increased year by year it is felt that details should be given in the Annual Report of the developments that have taken place during the year. This new section has, accordingly, been added to this report.

### *Establishments*

Reviews of Departmental establishments were undertaken throughout the year. These included a major review of the Administration and Finance Branches located in the State offices, as well as many minor variations to the establishments of the Medical and Hospital Branches throughout the States and in Central Office.

The conversion to automatic data processing of the checking of pharmaceutical prescriptions in State offices involved a detailed and lengthy review of the establishments of the various sections in order to provide the necessary staff to ensure a smooth transition from one system to the other. During the year the medical establishment in the Northern Territory was considerably expanded. The situation has now been reached where specialist services are available to the population in almost all branches in medicine and surgery.

The total number of staff in the Department increased by 159 in 1966-67 to 3,167. The most significant of these increases were sixty in Victoria and eighty-two in the Australian Capital Territory. In Victoria the rise in the number of staff was due, in part, to the need to employ additional staff to implement the processing of pharmaceutical benefit prescriptions on A.D.P. equipment. One factor in the A.C.T. was the improved recruitment situation in the professional and technical areas of the National Biological Standards Laboratory.

Regular induction and Departmental orientation courses were conducted during the year, as well as a course for programmers-in-training on Departmental A.D.P. procedures and techniques. Considerable benefit was obtained by officers who attended an efficient reading course. As well as attending internal courses, Departmental officers were nominated for courses conducted by the Public Service Board and outside organisations.



## *Automatic Data Processing*

The A.D.P. Section was mainly engaged during the year on the further implementation and development of automatic data processing in the pharmaceutical benefits area. The pharmaceutical benefits A.D.P. system is unique to Australia and has attracted considerable interest in overseas countries with similar health schemes.

At 30 June 1967 approximately 4,620 chemists, or 82 per cent of the chemists throughout Australia, were submitting claims for computer processing. The remaining chemists, all in Victoria, will be introduced into the scheme by September 1967. Major components of the related management information system were developed and implemented during the year.

All data preparation for the pharmaceutical benefits A.D.P. system is carried out in the State offices of the Department. When the remaining chemists in Victoria are brought into the system, A.D.P. data preparation sections in all States will be producing verified data at the rate of over 1,400 million characters yearly for this system. Stringent control measures have been adopted in all State offices and data preparation equipment has been maintained at a uniformly high performance level.

In addition to work associated with the pharmaceutical benefits scheme, the A.D.P. Section has been able to maintain a system which regularly undertakes automatic analysis of the results of biological assays performed by the National Biological Standards Laboratory and to implement an automatic system for the continuing analysis of the dental health of A.C.T. school children. This latter system is of particular significance in the light of the introduction of fluoride to the Canberra water supply in 1964. The computing requirements of both these systems are small.

The approval of the Public Service Board has been given to a substantial increase in programmer strength. The larger establishment will be engaged on the maintenance and further development of existing computer systems, development and implementation of A.D.P. systems in other areas of the Department and studies to determine, for the purposes of medium and long-term planning, the total computer requirements of the Department.

## *Organisation and Methods*

The work of the O. and M. Section of the Department falls into two categories. It undertakes cyclical reviews of sections within the Department to ensure that organisations are adequate and that methods are modern and efficient and it also examines those problems which arise from time to time outside the pattern of cyclical reviews, but which involve questions of organisation and methods.

During the year a number of major organisation reviews were carried out. The areas covered were Pharmaceutical Benefits—A.D.P. in Brisbane, Adelaide and Perth and the A.D.P. Section in Central Office, the Accounts Section, Central Office, the A.C.T. Health Services Branch, the School of Public Health and Tropical Medicine, the Commonwealth Acoustic Laboratories and Institute of Child Health, Sydney, and the administration and finance areas in the Brisbane and Adelaide divisional



offices. Most of these reviews have lead to staffing proposals being placed with the Public Service Board. A number of methods reviews were carried out covering the use of office communications equipment.

A programme has been laid down for the next year to cover approximately twenty items by cyclical review and to examine a number of areas where major difficulties have been encountered. In addition, the Section will continue to examine and process all proposals for office machines, administer the suggestion scheme and undertake steps for the introduction and development of a forms control programme.

### *Research*

The efforts of the Research Section during the year were mainly directed towards an examination of hospital and nursing home costs and utilisation in Australia. Progress was not as rapid as was hoped due to the lack of available information in many of the fields covered. However, detailed investigations into State public hospital systems and private nursing homes have been brought to a successful conclusion and should provide the basis upon which investigations can be extended to other areas. The results of the completed investigations have been most informative and have provided the basis for both past and future articles in the quarterly journal 'Health'.

At present a survey of patients in private nursing homes and a survey of uninsured patients in private hospitals, both in respect of the year 1966-67, are being conducted and it is proposed that the results of these surveys will also be published in the journal 'Health' as soon as they become available.

Investigations carried out so far have been concentrated on the hospital sector, as a great deal of the information could be obtained from State hospital authorities or from Departmental records. The next stage of the Section's programme will involve investigations into fields where the basic information is less readily available.





*Small patients of the Northern Territory Aerial Medical Service*



## Northern Territory Health

The Health Department in the Northern Territory, in its continuing efforts to provide modern health services, is faced with the dual problems of a rapidly growing population, in both its major urban areas and rural districts, and the special difficulties of a race in transit from nomadic existence to urbanisation. In an effort to meet these problems in urban areas, it has become necessary to acquire additional land and to provide additional staff, equipment and civil works. This is a major task in the Northern Territory, with its particular difficulties in the fields of recruitment, transport, climate and availability of major works contractors and building materials.

In rural areas the main problems are those of public health and quarantine services. With the beginning of overseas ore shipments from Groote Eylandt and its use as a first port of call it has become necessary to implement quarantine procedures and other important health measures at this previously undeveloped site. This and other rural areas experiencing rapid community expansion require diligent inspection and supervision.

The problems of the Aboriginal continue and health education is playing an ever increasing role in the difficult transition period.

In an effort to overcome the administrative difficulties associated with expansion, a Southern Regional Office has been established, embracing the area of the Territory south of Newcastle Waters. This office will eventually take over much of the responsibility previously borne by the Divisional Office in Darwin.

There has been further progress during the year in building and equipment programmes and a general increase in staffing. It is notable that there are now positions for specialists in most of the major fields of medicine and the present staff establishment in the Northern Territory is 901 positions.

### *Communicable and Tropical Diseases*

Once again in the field of communicable disease, the greatest problem has been gastro-intestinal infections in the Aboriginal infant population in Central Australia. Infectious hepatitis, ancylostomiasis and leprosy still give cause for concern and there has been a notable rise in venereal disease. The occurrence of a case of malaria in Central Australia which does not appear to have been introduced from overseas was of great interest and is a cause for concern.

The ancylostomiasis situation remains basically unaltered. This disease represents a general index of the state of hygiene in any community living in moist tropics.

There was a definite increase in the incidence of venereal disease throughout the Territory in 1966-67. A total of 274 cases was reported



compared with 157 cases in 1965-66, and an active programme of patient treatment and follow-up, together with contact investigation, has been undertaken. The problem of contact investigation is, of course, most difficult with a transient population. Venereal disease among the natives also has its own specific problems of patient identification and follow-up. However, every effort is being made through all the branches of the Department to combat this disease.

Fifteen cases of malaria were reported during the year from a number of centres throughout the Territory including Darwin, Tennant Creek and Alice Springs. Most notable was a case diagnosed at Alice Springs in a man who had been living in a settlement in Central Australia and who, after full investigation, was thought to have contracted the disease somewhere in Australia. This has highlighted the potential dangers of permitting persons from endemic zones to enter receptive areas without initial medical interviews. Discussions have been held with other Government departments and with airlines operating routine flights to Timor and it is intended that, in future, persons from endemic malarious areas will be interviewed by Departmental doctors.

Work on tuberculosis surveys was hampered because of severe wet weather conditions and staff shortage and it was only possible to conduct twenty-seven chest clinics during the year. Initial examinations, in accordance with the Silicosis and Tuberculosis (Mineworkers and Prospectors) Ordinance, of the 1,500 mineworkers employed in the Territory are about to be completed.

The world trend in leprosy control has become increasingly one in which only disabled and infectious patients are treated in hospital, while those who are not disabled are treated as outpatients. Treatment in the Northern Territory has followed this trend and, as a result, East Arm Leprosy Hospital has become less of a settlement and more of a hospital, with a decrease in the number of patients, but an increase in their individual medical needs. One new ward of eight beds for female inpatients was opened during the year and this has made a great difference in treating patients who have orthopaedic complications or require reconstructive surgery.

At a meeting of the Tropical Medicine and Health Committee of the National Health and Medical Research Council in Sydney in May 1967, which was attended by the Medical Superintendent of the East Arm Leprosy Hospital and representatives from other States, the desirability of a general liberalisation towards outpatient treatment was stressed. It is felt that such a policy will be of considerable benefit in attracting the more timid people of Arnhem Land to come forward for treatment.

A notable event at the East Arm Settlement during the past year was a sports meeting at which members of two Darwin amateur sporting clubs engaged in competition with inpatients at the settlement. This event may be taken as evidence of a generally improved attitude by the public towards leprosy and it is hoped that similar events can be arranged in the future.



## *School Health Services*

In the Northern Region, 1966-67 has seen a continued increase in school population, but a decrease in the number of school children examined. The reasons for this include an increase in the number of visits by the Commonwealth Acoustic Laboratories officers involving preparation and follow-up time; planning and preparation for the introduction of Sabin oral poliomyelitis vaccination into the Northern Territory; the introduction of the Sabin vaccine mass campaign at the end of May 1967 and shortage of medical staff at the Darwin Hospital and Divisional Office requiring the Schools Medical Officer to be seconded for other duties.

The Sabin vaccine campaign in the schools and pre-schools has been progressing smoothly. Only urban children are being given doses this year. The campaign will be extended to rural areas—missions, settlements and cattle stations—next year.

Some children have been sent to Adelaide, or other capital cities, for specialist treatment for ear complaints and others have been referred to the Social Welfare Branch to be sent to Adelaide for speech therapy.

In the Southern Region, a medical officer officially attached to the hospital at Alice Springs has been released where possible to carry out school medical services. Activities in this field have included the general medical examination of school children, specific examination in relation to ear, nose and throat problems of Aboriginal and part-Aboriginal children and the supervision of the infant health and district nursing services.

At Alice Springs the high school and infant schools were fully examined. The major problems found at these schools were in the area of eye and ear diseases. Areas examined outside Alice Springs included Finke Primary School, Ross River School, Barrow Creek School, Ernabella School and the Sunny Centre Sub-Normal Children's School. Again the major problems found in all these areas were particularly those relating to ear disease. Children in both the pre-school and the higher primary school were examined at Tennant Creek. In the same way as has been done in the Northern Region, ear clinics have been organised and run by the schools medical officer and sister.

## *Infant Health Service*

In the Northern Region, three sisters have been employed full-time in infant health work since August 1966. Since then the Peel Street centre has been opened an extra day, and is now open three days each week. In September 1966 the Parap centre was moved to the Guides' Hall and opened for a full day each week. Increasing numbers in the Rapid Creek area have necessitated the centre there being opened one additional day each week. The general health of the children continues to be of a reasonable standard, although the incidence of gastro-enteritis remains high at certain times of the year.

In the Southern Region, a sister was seconded from the nursing staff of the Alice Springs Hospital to provide home nursing services pending the provision of a permanent position. This permitted the infant health sister to extend her own activities and to begin planning for routine



examinations of two-year-old infants. She has also been able to increase her visiting of babies whose mothers require extra advice and to assist in the ante-natal clinics.

### *Home Nursing Service*

In the Northern Region, the number of visits made by the Home Nursing Service was considerably greater in 1966-67 than in the previous year. This was due to both an increase in population and greater utilisation of the service, particularly by private practitioners. Immunisation clinics, held twice weekly, were chiefly staffed by the Home Nursing Service.

In the Southern Region utilisation of the Home Nursing Service has increased to a point where by the end of June 1967 up to thirty patients per day were being seen. A full service is being offered, covering both fractures, geriatric and general home nursing problems and extending over the week-end. This service has been utilised by the private practitioner at Alice Springs since mid-May.

### *Aerial Medical Service*

With the addition of a further aircraft and provision for an extra pilot, there are now three Doves in service in the Northern Region with a pilot complement of four. The new aircraft, which was delivered in 1966, has been of great value and will no doubt prove even more valuable when servicing time comes up for the other aircraft in the Division.

Routine medical trips to outlying areas have been maintained and, in addition, there has been a need to transport the aerial doctor to Groote Eylandt for quarantine duties. Vessels are now arriving at Groote Eylandt direct from South-East Asian ports. In association with these overseas arrivals, the smallpox vaccination programme in that area has been stepped up in an effort to fully protect the people. During the year the senior pilot in Darwin was accorded chief pilot rating and is now responsible for the activities, training and supervision of pilots operating Aerial Medical Service aircraft.

The activities of the Aerial Medical Service in the Southern Region during the year were marked by a general increase in flying hours. This increase was due to a larger number of calls by people in the south-eastern sector of the region for routine trips and a rise in the number of inter-hospital evacuations between Tennant Creek and Alice Springs, particularly in the early months of 1967 when road transport was not possible because of heavy flooding of the Stuart Highway. A noteworthy improvement in 1966-67 was the installation of improved infant carrying facilities in the form of a humidicrib which works off the aircraft battery.

### *Rural Public Health*

In the early part of the year, the measles epidemic which had swept through the Aboriginal population was abating and the results and complications of vaccinations of almost 1,000 Aboriginal children with living measles vaccine were recorded and are now being evaluated.



Systematic surveys at major settlements and missions in the northern part of the Territory to gather basic data on growth and health of Aboriginal children were conducted. This information, in conjunction with data on diet, water supplies and sanitation, will be used in planning to combat the ever present problems of sub-nutrition and infectious diseases.

Investigation of two cases of diphtheria at Hooker Creek Settlement resulted in the detection of a carrier. The method of Schick testing and throat swabs demonstrated apparent susceptibility to diphtheria of a number of children previously immunised against this disease, and served to warn that diphtheria can still be a serious public health problem.

The additional task of a mantoux and BCG campaign, in conjunction with the tuberculosis survey, was successfully introduced into the year's programme. Leprosy reviews covered the major rural areas by air and road, and smaller more scattered centres are at present being combed. There is a constant follow-up of contacts and suspects wherever the opportunity offers. At Warrabri Welfare Settlement a group under the leadership of Dr. F. W. Clements, of the Institute of Child Health, explored some of the problems of health education in Aboriginal communities. Emphasis was placed also on baby health surveys in the major settlements and missions. These were carried out by a two-person—doctor and sister—team. The haemoglobin of children was checked as well as their heights and weights. Diet studies were undertaken and, with the help of the dietitian and Welfare Branch, some progress is being made in rectifying deficiencies in the rations given to certain Aboriginal communities.

In the Darwin area, local camps, especially those formed in the 'wet' season, were visited. Special care was paid to the welfare of the children, who tend to become neglected in these areas, particularly with the easy availability of liquor for their parents. Bagot Settlement infant immunisations were kept up to date and haemoglobins checked regularly. The pre-school and school children were also surveyed. An attempt is being made to introduce Aboriginal mothers to personal immunisation cards for their children, particularly when they attend the general town immunisation clinics.

In the Southern Region an 'adoption' system was introduced whereby one sister adopted one settlement and continued to follow up the general health status of the settlement over an indefinite period. It is felt that, by continued contact with the people of the settlement, the sisters are better accepted by the indigenous population. The staff of the Survey Section in the Southern Region are convinced of the need to speak the language of the people with whom they are dealing. They are all attending, in their own time, special classes in Pitjantjajara, a local dialect widely understood in the area, so as to be able to communicate more freely with the Aboriginal population. This will be particularly valuable, especially in the field of health education.

Much material has been collected from settlements during the year in the form of haemoglobins, weights and other useful information. It is hoped eventually to construct from this data some apparent normals for Central Australian Aboriginals. The Survey and Aerial Medical Sections combined to investigate health conditions in areas where no previous



medical visits had been made. The Utopia-McDonald Downs area, in the south-eastern sector, was investigated and immunisation campaigns have been started in these areas, which are now on routine visit schedules.

### *Rural Health Inspectors*

The general activities of the Rural Health Inspection Section continue to hinge on inspection of rural establishments, hookworm control and general health education of Aboriginal communities. The authorities responsible for the development of townships in the Groote Eylandt and the McArthur River areas have approached the Department for advice in the planning of health facilities both for the developmental and completed stages of their projects. It is felt that, with the Department's co-operation, potentially dangerous situations, particularly relative to the early camp sites, have been averted. Several classes have been held during the year for the training of hygiene supervisors drawn from the ranks of Aborigines resident in settlements and missions.

### *Urban Public Health*

Darwin continues to expand rapidly, but fortunately new subdivisions are seweraged prior to the building of houses. A feature of the developing town is the accommodation problem and, as a result of this, caravan parks are springing up with temporary and sometimes permanent dwellings. These areas require close supervision to see that health standards are maintained.

Importation of milk from other States requires close supervision to maintain adequate standards of carriage. Locally produced milk also requires much careful supervision in its handling prior to distribution, and constant supervision of the dairymen is required to maintain adequate standards. Difficulties are still being experienced with food shipments, some of which, particularly when transported by road and sea, arrive in unwholesome condition.

Problems exist, particularly at Alice Springs, in regard to the disposal of effluent. As yet, no solution to these problems has been found, because the effluent standards have not been satisfactory, but it is hoped that, with co-operation from the Works Department and Agriculture Division, the effluent will eventually be used for citrus growing or for forests.

### *Health Laboratories*

At the Darwin Health Laboratory the work load has shown a steady increase over the past twelve months. Two cases of melioidosis were reported during the year. In a fatal case the organism was isolated from blood culture. In the second, non-fatal, case the organism was isolated from an abscess on the forearm of an Aborigine at East Arm Leprosy Hospital. Salmonella isolation continued, but there was a notable drop in the number of shigella dysentery isolations. Several cases of malaria, from visitors to Timor and New Guinea, were reported. Blood transfusions showed a marked increase. Approximately 1,000 pints of blood were cross matched during the year.

The laboratory service at Alice Springs was further diversified and extended. Besides regular clinical examinations, it performed work for



the Aerial Medical and School Health Services, the periodic tuberculosis surveys and a malaria survey. It also provided further substantial support for a lactose tolerance research project among Aboriginal children being carried out in conjunction with the Department of Child Health of the University of Adelaide.

### *Quarantine*

There was a marked increase in 1966-67 in the number of service aircraft requiring clearance as a result of activities in South East Asia. Medical evacuation aircraft were cleared both in Darwin and Alice Springs for the New Zealand authorities. The volume of commercial aircraft traffic remained fairly static with the usual heavy load of midnight to dawn clearances for Quarantine officers. The use of disposable garbage bags is being tried by overseas and internal airlines, both of whom use the quarantine incinerator. A favourable response has been expressed and these bags may soon come into routine use.

### *Dental Services*

Treatment given by the Dental Service was somewhat reduced this year despite an increase in population. The number of dentists available was the critical factor, together with the loss of experienced dental officers and their replacement by new graduates. The present strength of six dental officers, out of an establishment of thirteen, reflects recruitment difficulties.

### *Pharmaceutical Section*

An improvement in the staff situation during the year enabled increased activities in the pharmaceutical field. During the dry season most settlements, missions and stations with medical posts staffed by nurses were visited and also several smaller settlements. The contents of medical kits provided by the Department and conditions of storage were inspected and revised lists of contents were proposed.

During the year a Poisons Information Centre was established at Darwin Hospital. Use of the Centre by private medical practitioners and the public is growing.

### *Nutrition Section*

Activities by the Nutrition Section were wide and varied during the year. Surveys were made to assess the actual intake offered to pre-school children eating communally on a number of missions and settlements. Pin pointing of some deficiencies in their diets enabled the staff to take steps to improve the diets in all ways possible. A survey to assess the response to offering a self selection of vegetables to Aborigines eating communally at Warrabri Settlement was also undertaken prior to a health education workshop.

### *Hospitals*

The hospitals in the Northern Territory have continued to function efficiently, despite the difficulties presented by the continuing building programme at Darwin Hospital and by staffing difficulties at some of the



smaller hospitals. Major works completed or nearing completion at the Darwin Hospital include a ninety-bed ward block, the new nurses home—a feature of which is the first lift in Darwin—a swimming pool, stage one of the administration block, a new kitchen and a system of covered ways which should be completed by the next wet season. Associated water supply, drainage, sewerage, road works and boiler house services are also nearing completion and a new oil-fired incinerator has been installed.

At the Katherine Hospital the addition of one medical officer to the staff has enabled additional road trips to surrounding areas to be undertaken as well as the performance of certain surgical procedures requiring general anaesthesia. At Tennant Creek considerable difficulties were once again experienced in recruitment of medical and nursing staff. A medical officer now spends one day a week at Batchelor Hospital and this, together with constant attention by the nursing sisters there, provides a continuing service for residents of Batchelor.

At the Alice Springs Hospital there was an overall increase in activity, and in particular a rise in the number of surgical operations performed. Preliminary foundation surveys are now under way for the proposed new hospital development. The installation of an emergency power unit capable of providing all electrical needs for the present and proposed hospital was completed during the year and work was begun on professional officers' quarters to provide eight single flats. Floods in the early part of the year slowed work on the building, but it is expected to be completed by the end of 1967.



*New ward block at the Darwin Hospital*



# Australian Capital Territory Health

The population of Canberra continues to expand rapidly and this has meant a corresponding increase in health service activities. Because of this expansion and the growing importance of many of the local health functions, the A.C.T. Health Services Branch was established during the year to co-ordinate and integrate the many services now available and to plan for future health needs.

## *Health Inspection, Infectious and Notifiable Diseases*

Health inspection activities in the A.C.T. are mainly concerned with supervision of the manufacture, storage and distribution of food supplies, with inspection of sanitary arrangements on construction sites and the examination of building plans to ensure that proper hygiene standards are observed. Inspections in the rural areas of the A.C.T. have increased with the establishment of the Tidbinbilla, Orroral Valley and Honeysuckle Creek satellite tracking stations and routine supervision of the catchment area and fauna reserve.

The Medical Officer of Health for the A.C.T. receives reports of infectious and notifiable diseases and where necessary follow-up investigations are carried out. Details of diseases notified in the A.C.T. in 1966-67 are given in Table 34 on page 105.

## *Quarantine*

The number of overseas aircraft arriving at Canberra as a first port of entry has increased significantly. In 1964-65 a total of twelve aircraft received quarantine clearances at the Canberra Airport. In 1965-66 the number was nineteen and in 1966-67 it was thirty-six. Quarantine inspection of parcels arriving under bond at the Canberra Post Office is carried out by health inspectors.

## *School Medical Service*

Medical examinations of children at both public and private schools—including Jervis Bay and Wreck Bay—have continued during the year. Examinations requested by parents, teachers, medical practitioners, or in conjunction with the Commonwealth Acoustic Laboratories and the Educational Clinic of the New South Wales Department of Education have been undertaken.

The number of school and pre-school children examined by the School Medical Service and defects noted are given in Table 46 on page 109. There was an increase of 7.2 per cent in the number examined when compared with the previous year, while the number of personal interviews with parents increased 66.5 per cent to reach 821 in 1966-67. The total number of school children enrolled in the A.C.T. during term one, 1967 was 25,762, an increase of 2,678 over the number enrolled at the same time last year.



## *Immunisation*

During 1966-67 the School Medical Service administered 10,311 injections of triple antigen in the continuing campaign against diphtheria, whooping-cough and tetanus. This compared with 9,690 injections in the previous year. In addition, an immunisation campaign against poliomyelitis was commenced throughout schools in the A.C.T. using Sabin oral vaccine. During the first three phases of this campaign 58,659 doses of the vaccine were administered by the School Medical Service to school children. A poliomyelitis clinic has been established and a further 22,156 doses of the vaccine were given here and in outlying clinics to babies and to some adults. The number of doses of Salk vaccine given was 2,223.

A survey of blood antibody levels among children from four schools in Canberra was undertaken in conjunction with the Sabin immunisation campaign. This was done to assess the degree of protection given by previous Salk vaccinations and to ascertain the optimum time for administration of further booster doses of Sabin vaccine. The results of this survey, when available, will be of considerable interest to public health authorities throughout Australia.

## *Child Dental Service*

Free dental treatment is available to children attending infants' and primary schools in the Australian Capital Territory. During 1966-67, 12,844 children were examined by the Child Dental Service compared with 11,259 in 1965-66.

A programme to provide mouth guards for children involved in contact sports was carried out during the school holiday period in May 1967. This was done only in cases where requests had been received from parents. The project was well supported and 340 mouth guards were provided. In a similar programme in 1965-66, 147 mouth guards were provided.

One additional position of dental officer was created during the year bringing the total to fourteen. However, recruitment has continued to be a problem and two positions could be filled on a part-time basis only. One new clinic was opened during the year in the Woden Valley district and the construction and equipping of five more clinics in new suburbs was begun.

Since the fluoridation of Canberra's water supply in September 1964 there has been an improvement in the dental condition of children. Survey results to date show that children who were examined in 1966 and who had lived in Canberra since the beginning of fluoridation had 6 per cent less decayed, missing or filled permanent teeth than children examined before fluoridation was introduced. In terms purely of decayed permanent teeth the survey results indicate an improvement of 14 per cent.

## *Child Guidance Clinic*

The Child Guidance Clinic has been in operation for eighteen months and during 1966-67 there has been a steady increase in the volume of work. A speech therapist joined the Clinic staff and speech therapy is now offered to children who have been investigated by a psychiatric team, of which the speech therapist is a part.



Special rooms have been equipped for the purpose of conducting psychotherapy with disturbed children. These rooms give the children as much freedom as possible without risk of accident. In the treatment of disturbed children it is important for the therapist to be free of anxieties concerning the child's safety or the safety of others.

One of the main aims of the Clinic is to carry out preventive mental health work. In order to do this potential behaviour disorders must be detected as early as possible. A small pilot study, using an inventory for a detection instrument, was conducted and, an investigation made of the social adjustment of children attending pre-school in Canberra. The results obtained suggested that the particular inventory used would, in fact, be a useful aid in communicating between pre-schools and the Clinic. It is hoped that the Clinic will be able to collect some norms for the Canberra pre-school population and thus be in a position to discover deviant children as early as possible.

Consultative services have continued for private medical practitioners and bodies such as the Child Welfare Section of the Department of the Interior and the Educational Clinic of the New South Wales Department of Education. Advice has also been given to mothercraft nurses.

### *Hospital Services*

Planning for two additional public hospitals in Canberra has proceeded during the year in accordance with the Government's decision to construct a 600-bed general hospital in the suburb of Garran, in the Woden Valley, and to provide Commonwealth assistance for the construction and operation of a 200-bed general hospital by the Order of the Little Company of Mary. The latter hospital will be erected on a site in the Belconnen district of Canberra, giving easy access to the existing northern suburbs of the city.

### *Nursing Home Accommodation*

The Canberra Regional Board of the New South Wales Baptist Homes Trust has commenced building operations to erect stage one of a nursing home in Canberra in the suburb of Red Hill. The Commonwealth is providing financial assistance towards the capital building cost of the home.

### *Ambulance Service*

Planning for a new headquarters for the A.C.T. Ambulance Service has advanced to the stage where full working drawings have been completed and tenders called. It is expected that a contract for stage one of this project, to cost approximately \$70,000, will be let early in 1967-68. This will provide garage accommodation for six vehicles, an administrative area, a radio control and communication centre and staff amenities. The station will be located in the suburb of Dickson.

A new two-vehicle ambulance station was erected in the suburb of Griffith during the year. When the headquarters station at Dickson is completed the administration and control of the A.C.T. Ambulance Service



will be transferred to the A.C.T. Health Services Branch. Both building projects have been undertaken by the National Capital Development Commission for the Department of Health.

### *Health Laboratory*

The Pathology Laboratory, which was transferred from the Institute of Anatomy to the Canberra Community Hospital in October 1965, occupied additional space in the hospital in May 1966. This area has been used for microbiology, virology and radio-isotope work. The Guthrie test for the early deduction of phenylketonuria is now being performed on babies born in the Northern Territory as well as on those born in the A.C.T. The statistics of the Laboratory show an increase of 26 per cent in the number of tests performed and of 20 per cent in the number of patients. This large increase in work volume is due to the improved facilities available and the more convenient location of the Laboratory at the hospital.

### *Registration Boards*

The secretariat of the A.C.T. Medical, Pharmacy, Dental, Optometrists', Nurses' and Veterinary Surgeons' Boards is now located in the headquarters of the A.C.T. Health Services Branch. Recent legislative changes have, with the exception of the Veterinary Surgeons' Board, transferred the position of chairman of the boards from the Director-General of Health to the Director of Health for the A.C.T. Other changes in legislation have given the Dental Board the power to review fees charged for dental services, and the Medical Board the opportunity to register medical practitioners for short-term periods and for special purposes, such as teaching or research.

A substantial increase in the number of nurses seeking registration has occurred. Details of registration by each Board are given in Table 47 on page 109.

### *Veterinary Services*

A total of 2,053 dairy cattle in the A.C.T. were tuberculin tested during 1966-67. At the routine annual test sixteen reactors were detected in one herd and these reactors were ordered to be slaughtered under supervision by meat inspectors. At a re-test of this herd three months later there were no positive reactions, indicating that the disease had been eliminated.

Advice was given to landholders on disease problems, and autopsies and specimen examinations performed in the field and laboratory. This included faecal examinations and worm egg counts to determine the presence of hidden infestations. Surveillance was kept over the movement of stock in the A.C.T. and health certificates issued after examination of stock and domestic animals leaving the A.C.T. both for overseas and other Australian States. Regular dairy inspections were made during the year to ensure the maintenance of a high standard of hygiene. Stock sales were attended and inspections made for the presence of notifiable diseases.



## *National Fitness*

In January 1967 a National Fitness Officer, with specific A.C.T. responsibilities, was appointed. Thus, for the first time, the A.C.T. was recognised as a separate area for the promotion of youth services, recreational and fitness activities. The A.C.T. National Fitness Advisory Committee, at whose request the National Fitness Officer was appointed, is at present being reconstructed to provide a more effective controlling body in the A.C.T. Its associated Youth Committee is also re-constituting itself as the Youth Council of the A.C.T. Three scholarships were provided to the Australian Recreation Leadership Course at Narrabeen, New South Wales. Each scholarship entitled the holder to four weeks intensive training. In addition, grants were made to local sporting and youth organisations.

## *Canberra Mothercraft Society*

There are twenty-one mothercraft centres operating in the A.C.T. These are administered by the Canberra Mothercraft Society, a voluntary organisation subsidised by the Commonwealth, and are staffed by a total of ten triple-certificated nursing sisters. Advice is given to mothers on the care of their babies. The Society's nursing sisters also make an initial home visit to mothers following their discharge from hospital.

The Queen Elizabeth II Home for Mothers and Babies, also operated by the Canberra Mothercraft Society, provides post-natal care for mothers and babies following their discharge from hospital. During the year 201 mothers and 299 babies were admitted to the home. In addition sixty-seven mothers attended as outpatients after having been referred to the home by doctors or the Society's sisters.

## *District Nursing Service*

There has been a significant increase in the activities of the District Nursing Service as it continues to meet the expanding needs of the A.C.T. The Service, with the co-operation of other medical and social agencies, is enabling many sick people to remain in their homes and, in addition, is giving support to relatives and instructing them in the care of the patients.

During 1966-67, district nurses also helped with various clinics and were members of the Sabin vaccine campaign teams. The number of patients visited in 1966-67 was 1,265 and the total number of visits made was 51,564.

In preparation for their public health nursing duties a series of lectures, films and discussions have been held and attendance at a nursing seminar was arranged for several members of the staff. Two scholarships have been made available by the Public Service Board, one for a three months in-service public health nursing course conducted by the New South Wales Department of Public Health and the other for the Diploma of Public Health Nursing course held at the College of Nursing, Australia. In addition, observation periods have been arranged with other District Nursing Associations. Visits to the Rehabilitation Centre at the Canberra Community Hospital have been made by all district nurses and the Director of Rehabilitation has led discussion groups.



## National Fitness

There was a significant increase in the range and extent of national fitness activity during the year following the increased Commonwealth allocation to the National Fitness Movement. Commonwealth assistance was increased from \$200,000 to \$366,000 annually. State National Fitness Councils received a total increase of \$96,000, which was distributed in the same proportions as previously applied. The allocations to the various States of the total amount of \$224,908 is shown in Table 48 on page 110.

A further \$200,000 was made available over a three-year period to assist the development of capital programmes. This assistance was given on the basis of the Commonwealth contributing \$1 for every \$2 contributed by the States and the proceeds being available for State National Fitness Council projects.

With the increased financial support, State Councils have been able to engage in a wider range of activities and to give increased services to the community. In addition to a variety of camping programmes for both young people and adults, assistance in various recreational activities and instruction through specialised sports coaching clinics have been provided. Field officers and, in certain States, regional national fitness officers have been responsible for developing programmes in widely scattered areas. Councils have continued their link with their youth work generally through associated youth committees or State youth councils.

### *State Education Departments*

The Commonwealth grant to State Education Departments during the year was \$34,000. Assistance was given for training of teachers in physical education and for publications, films and equipment. School camping has also been developed in most States as an integral part of the general education programme.

### *Universities*

Grants totalling \$24,800 were paid during the year to universities to assist in the training of specialist physical education teachers. Physical education departments of the universities concerned also provided physical recreation activities for the general student body. The Universities of Melbourne, Queensland, Adelaide and Western Australia each received \$4,200 and the Universities of Sydney and Tasmania each received \$4,000.

### *Commonwealth Council for National Fitness*

The Commonwealth Council met on 24 and 25 August 1966 in Canberra in a session which marked the twenty-fifth anniversary of the passing of the National Fitness Act. Consideration was given to a wide variety of subjects affecting the development of the National Fitness Movement, particularly the possible development of sports councils and the need for national parks and adequate recreation areas in the future.



## *'Keeping Fit'*

During the year arrangements were made for the printing and distribution of the Commonwealth Council publication on exercise and diet, 'Keeping Fit'. The A.M.P. Society assisted the Council to achieve its aim of a wide distribution of the booklet throughout Australia by providing financial assistance for the project.

## *Recreation Leadership Course*

Now in its third year of existence, the Australian Recreation Leadership Course is making a major contribution to the promotion of health, physical education and recreation throughout Australia. The first group of students will graduate from the course early in 1968. In addition to the scholarships provided by the Commonwealth, certain State Councils have provided additional scholarships. Students have come from a wide variety of backgrounds and have included State Government employees engaged as psychiatric nurses and prison wardens and as recreation officers of the Department of Education. Professional and voluntary youth leaders also studied at the course. A total of 169 students received training at the Narrabeen Centre and extension courses were also provided by the National Fitness Council of New South Wales.

An additional \$4,000 was made available for the Australian Recreation Leadership Course. An annual grant of \$2,000 was provided to assist with administrative costs involved in the course and \$2,000 was apportioned between the States to provide scholarships for the course.

## *Duke of Edinburgh's Award*

State National Fitness Councils have continued their active promotion of the Duke of Edinburgh's Award Scheme through State committees and the operation of field officers. A central award office has been established in Sydney and State Councils are contributing towards its operation and the salary of the central award organiser. At 30 September 1966, 3,311 young people were participating in the scheme throughout Australia.

The Australian premiere of the film 'So Few Dare' which was made for the Award Scheme, was held in Canberra on 25 August, 1966 and His Excellency the Governor-General presented twenty-nine gold awards at the conclusion of the screening. His Royal Highness, the Duke of Edinburgh, also presented thirty-one gold awards during his visit to Australia in March 1967. With increased promotion and publicity directed by active State Award committees, it is felt that the Award Scheme will make an increasing impact on the young people of Australia.



## Commonwealth Health Laboratories

The volume of work performed at the Commonwealth Health Laboratories has continued to increase and the scope of the service has progressively widened with the demand for new procedures and the greater use by the medical profession of laboratory investigations as an aid to diagnosis, treatment and prognosis of disease. The Laboratories now provide services in haematology, histopathology, serology, biochemistry and bacteriology.

This general expansion has led to the necessity for the recruitment and training of a staff of science graduates and medical technologists. Recruitment of technical staff during the year resulted in the appointment of some medical laboratory technologists and the transfer of the positions from Central Office to the Health Laboratories in the respective States. Four cadet biochemists completed their degree courses and have been posted to the Laboratories in the States. Six cadets in training are expected to complete their courses this year and it is anticipated that a further six undergraduates will then be recruited to the cadetship scheme.

The lack of qualified pathologists to supervise the work performed at each of the Laboratories has been an ever-growing problem and, in an endeavour to overcome this, an intensified recruiting campaign was launched in the United Kingdom where interviewing committees were set up. Approval has been given for the provision of a scholarship for a health laboratory medical officer to attend the Diploma of Clinical Pathology Course at the London Postgraduate School of Medicine. A suitable applicant has already been selected and will begin this course in October 1967. At the same time the feasibility of training pathologists in Australia is being explored.

The Canberra Health Laboratory has been enlarged by a further 2,464 square feet to provide additional facilities for the Microbiology Section. The total area occupied by the Laboratory, including the blood bank, in the Canberra Community Hospital is now 11,600 square feet. Building work at present in progress at the Albury Health Laboratory will provide increased working areas for three sections—the haematology and bacteriology departments and the sterilising and cleaning room.

The Third Annual Conference of Pathologists was held in Mackay, Queensland during September 1966 in conjunction with the North Queensland Medical Conference. Pathologists from Queensland, Victoria and the Australian Capital Territory attended the Eleventh Congress of the International Society of Haematology and the Eleventh Congress of the International Society of Blood Transfusion, which were held in Sydney during August 1966. The Department was also represented at the annual meeting of the Haematology Society held in Canberra during May 1967.

Statistics of tests performed and the number of patients who attended the Laboratories are given in Table 52 on page 111.



# School of Public Health and Tropical Medicine

The teaching, research and consultative activities of the School of Public Health and Tropical Medicine were maintained and extended in 1966-67.

In the teaching field a variety of extra-mural activities were undertaken. A full-time course of one week on health hazards in industry was presented for managerial and technical staffs and a one-week course on ergonomics was given in association with the Department of Labour and National Service and the Productivity Group Movement. Various courses were also presented for the Australian School of Pacific Administration, the University of New South Wales and the New South Wales College of Nursing. The annual non-professional course in tropical medicine and hygiene for missionaries, nurses and tropical residents generally, now past its thirtieth year, was continued. Instruction was arranged for personnel of Commonwealth departments and organisations, the Armed Services and various institutions.

## *Postgraduate*

Full-time courses were provided for graduates in medicine for the Diploma of Public Health and the Diploma of Tropical Medicine and Hygiene. Courses were also provided for various subjects of the post-graduate diploma courses in public health dentistry, clinical pathology and social work and for a course of three weeks in occupational health for medical practitioners.

## *Undergraduate*

Courses were given for medical students in preventive medicine (fifth year) and parasitology and malaria (fourth year) and in hygiene, industrial hygiene and safety, and protozoology for students of architecture, engineering and science respectively.

## **Research**

### *Microbiology*

A survey of human adult sera for antibodies against *mycoplasma pneumoniae*, an important cause of respiratory infection in the United States of America and Europe, has been reported. Of some 2,000 sera, 15 per cent had significant titres indicative of past infection. A survey of children with pneumonia is being continued. Only two cases of possible recent infection have been encountered. The work is being extended to study the possible association of other mycoplasmas with human disease.

### *Biochemistry*

An investigation of the quantitative aspects of protein fractions as estimated by dialophoresis, to determine the use of this method as a diagnostic clearing test and for studies on the so-called benign



physiological or functional groups of albuminuria, was commenced. Investigations of copper metabolism and the presence of abnormal globulin patterns, to establish the nature of possible disturbances in copper metabolism occurring in leprosy and chronic liver damage, are continuing.

The following projects, previously reported, have been completed and are being prepared for publication: serum protein studies in relation to malaria with Dr F. Schofield; correlation of electrophoresis quantitation methods; distribution of cholinesterase levels in the adult population; and significance of the cortisone provocative test with Dr A. Spears.

### *Environmental Health*

Work on the effect of thermal environment on the aged and infirm, being carried out in association with Dr F. Ofner at the Lidcombe State Hospital and Home, has been continued and a further paper on 'Temperature regulation on elderly men in bed' published. Statistical examination of recordings over a year of pulse rate, blood pressure and body temperature in a group of elderly men is nearing completion. The results indicate that there are marked seasonal variations in these measurements. Studies have commenced on the effect of the administration of anti-malarial drugs on heat tolerance.

Statistical analysis of the extensive collection of measurements of blood pressure, weight, skinfold thickness, heart rate, oral temperature and thermal comfort, made in Antarctica over many years by medical officers of the Australian National Antarctic Research Expedition is proceeding in association with the C.S.I.R.O. Division of Mathematical Statistics. A study of the urinary excretion of adrenal hormones, before and after acclimatisation to cold in Antarctica, by assay of urine samples, is also proceeding.

Members of the Antarctic Division, Department of External Affairs, were attached to the School staff while analysing the results of their work in Antarctica. Dr E. J. Elkington is investigating the effect of acclimatisation on finger blood flow. Dr K. E. Hicks has submitted for publication a paper on 'Changes in the blood-clotting mechanism, serum lipids and basal blood pressure in Antarctica' and is now completing the analysis of thermal comfort studies.

A study of the relation of traffic accidents to the prevailing weather, previously reported, is proceeding.

### *Entomology*

The detailed investigation of unsolved problems associated with populations of 'filth-flies' in urban areas, which was initiated to provide biological information of possible value in the control of these flies, is continuing. Statistical analysis of the data accumulating from extensive fly catches from selected sites has commenced.

### *Occupational Health*

Because of the health implications of exposure to asbestos dusts, a survey of asbestos industries was initiated. An extensive dust survey was made of an asbestos mine and mill in Western Australia with the



co-operation of the Western Australian Departments of Health and of Mines. A detailed analysis of dust samples collected is proceeding. A survey of the health of workers, such as loggers, boilermakers, welders, fitters and others who have been intermittently exposed to asbestos while employed on ships at a dockyard, was also commenced. The procedures include chest radiographs, tests of lung function and sputum examination. The examination of sixty-eight long-term employees, the results of which have been compiled, is to be extended to other industries.

A survey of the health of rotary machinists in the printing industry to determine the amount of ink and paper dust in the air of rotary printing departments and its possible effect on the health of operatives, is proceeding and will be completed in the next year. A clinical and environmental survey of the health of telegraphists has been completed and a report is being prepared.

### *Genetics*

Treatments of clinical, genetic and population data in the following fields were completed in conjunction with colleagues in Oxford, Baltimore, Belfast and Adelaide: derivation and application of a linear discriminant function in phenotypes of inherited ichthyosis, derivation of correction for bias in estimation of linkage of two sex-linked loci and estimation of linkage and association for fifteen blood group or serum markers and the beta thalassaemia locus.

An investigation was initiated, in conjunction with Dr F. Halliday, of inherited chorio-retinopathies in New South Wales. Clinical and genetic findings will be analysed together with ophthalmological and electro-oculographic data. An investigation of inherited ataxias was commenced in association with Dr J. G. McLeod. Here clinical and genetic findings will be analysed with electrophysiological and histopathological data. In both these projects, the object is to discriminate between aetiologically distinct varieties and thus obtain information for assessing prognosis, management and hereditary counselling in a given case.

### *Parasitology*

Field work on the long-term study of the epidemiology and control of filariasis in New Guinea, undertaken in association with the Papua and New Guinea Department of Public Health, was completed with a final survey in the Sepik area, where the effect of residual insecticides on transmission was studied. Final laboratory work and preparation of a report are in progress. Results of the study indicate that a generalised filariasis control programme in New Guinea is not indicated, although delineation of hyperendemic areas, with intensive measures by drug administration and residual spraying for control of mosquito vectors, is suggested.

A trichinosis survey, commenced in 1965, following a report from New Zealand that infestation with this parasite had been detected there in pigs, rats and cats, was continued. Examinations of 33 rats, 44 cats and 2 pigs were negative in the present period. Investigation on helminthic infestation and treatment was undertaken on the Cocos Islands.



## *Preventive Medicine*

The six-year investigation of the efficacy of BCG vaccination in the prevention of leprosy, conducted in a New Guinea area of high leprosy incidence in collaboration with the Papua-New Guinea Department of Public Health, was completed in September 1966 with a final survey of the test population. The results indicate the efficacy of BCG as a prophylactic. BCG was responsible for a 56 per cent reduction in incidence rates in the vaccinated group. In each decennial age group to thirty years and over the incidence rates were less in the vaccinated group than in the controls, but the differences were statistically significant only in the age groups 10 to 19 and 20 to 29. For both males and females of all ages, the decreased incidence in the vaccinated group was statistically significant. BCG does not appear to influence the type of leprosy or the age at onset of the new cases but preliminary results indicate that BCG may accelerate the natural healing process. An evaluated control programme will now be put into effect, with leprosy surveys at intervals to measure the decrease in incidence of the disease.

A statistical study of breast cancer was commenced in association with the Tumour Clinic, St. Vincent's Hospital. Information on 2,000 cases has now been coded. A report covering the epidemiological and evaluational aspects of gynaecological cancer, in association with the New South Wales Gynaecological Registry, has been submitted for publication. A study of the symptomatology of specific histopathological types of lung cancer and the results of treatment for the period 1964-66, from data provided by the Lung Cancer Registry, has been published.

A previously reported study, carried out at Fairfield in association with the New South Wales Public Health Department, to elicit the immunisation experience of infants born in 1964 and the educational and social status of their mothers, was completed. The results of interviews with 470 mothers were analysed and the findings will be considered by the New South Wales Public Health Department in its planning of health education programmes.

A survey to determine a more accurate incidence figure for venereal infections in the Sydney metropolitan area was concluded and the results published. Information on 816 persons involved in traffic accidents in country areas of four States, collected by the Traffic Injuries Committee of the National Health and Medical Research Council, has been analysed and a report is being prepared for publication.

The planning of a study to elucidate the difficulties experienced by asthmatics in obtaining employment was undertaken at the request of the Asthma Welfare Society. A questionnaire was designed and is being given to some 500 asthmatics by general practitioners and medical officers of large metropolitan hospitals.

The results of a previously reported study of all cases of drowning which had occurred in the Sydney metropolitan area in the previous three years were published. The aim of this project was to determine the descriptive epidemiology of such accidents and to gain greater knowledge relating to their prevention.



Assistance is being given in statistical planning for the Australia-wide survey of smoking habits in school children which is being sponsored by the National Health and Medical Research Council. In a follow-up study of the individual problems and socio-economic adaptation of haemophiliacs in New South Wales, previously reported, comparisons are being made between the results of the present survey and data and conclusions from a major study undertaken six years previously.

### *Radiation Biology*

In an investigation of prevention of radiation-induced leukaemia in mice, work has been done in cell transfer systems. When foetal haemopoietic tissue is used after radiation, either to impede the onset of radioleukaemia or in related experiments with resuscitation from the lethal effects of large doses of radiation, tests using cytogenetic methods and transplantation show that the leukaemia does not, for the most part, arise in donated tissue. Although administration of lymphoid tissue in dissociated form parenterally has not prevented the onset of leukaemia following a schedule of irradiation normally resulting in an incidence of 70 per cent, exclusion of a single lymph node from the radiation field results in well marked protection.

Cases involving intersex states and chromosome trisomies continued to be referred for further investigation by tissue culture methods and autoradiography. Genetic counselling has been given where chromosome translocations were found to be responsible for inherited trisomic states such as mongolism.

Further use has been made of the School's facilities to detect leukaemia cases in some haematological disorders. A survey of the presence of chromosome aberrations seen in polycythaemic patients treated by radiation or with radiomimetic drugs has been commenced.

### *Tropical Medicine*

The study of the health of an Aboriginal community in a rural area of New South Wales has continued. All the children have been physically examined and some laboratory examinations made. Attention will also be directed to adults in the community. As a result of the findings in children, exploration of methods of remedial action, including a study of the employment of a public health nurse in such a situation, is projected.

A statistical study on the mortality, morbidity and other aspects of the health of Australian Aborigines has been continued in association with the Social Science Research Council Project on Aborigines. Much vital statistical data has been collected and prepared for analysis.

### **Consultative and Advisory Services**

Consultative services to various Commonwealth and State Departments, health authorities and institutions, provided by the School in its special subjects, were maintained. Members of staff served on a wide range of official bodies devoted to health or science and as honorary consultants to hospitals and other institutions.



## Institute of Child Health

Great encouragement has been given to the work of the Institute of Child Health by the start on construction of its new building. The building, which, in its first stage, will have two floors each of 6,000 square feet, is expected to be ready in the last quarter of 1967. There will be laboratories for biochemical and psychiatric research, office accommodation and a conference room. The new building will help the Institute to fulfil its functions, both in its role within the Commonwealth in relation to child health and as a focal point for paediatrics in South-East Asia.

The work of the Institute is developing in three general directions: an increasing involvement in national and international advisory services related to child health and disease; a demonstration of the ways in which psychological adjustment to modern life can be assisted both individually, by the medical profession and, generally, by society; and attention to problems of certain specific illnesses in childhood.

At the request of the Department of External Affairs, a special programme was arranged for Dr Asikin Hanafiah of the Department of Paediatrics of the University of Indonesia, Djakarta. His visit was an outstanding success. Short visits of this nature, made with adequate preparation, are felt to be one of the best ways of assisting paediatric developments in the countries of South-East Asia. Special advice was given on request to the Administration of Nauru in relation to health problems in children.

Consultations were held during the year with a number of hospital authorities on the planning of accommodation for children. Expert opinion was given on the treatment of juvenile offenders and discussions continued with the New South Wales Child Welfare Department on the care of children in institutions.

### *Child Psychiatry*

Associate Professor J. Katz has continued the teaching of child psychiatry to undergraduates, candidates for the Diploma in Psychological Medicine and social work students. Under the auspices of the Post-Graduate Committee in Medicine of the University of Sydney, addresses were given during the year to general practitioner groups in Sydney, Merrylands, Canberra and Kiama on various aspects of child psychiatry. The Canberra Child Guidance Clinic is now well established and has a full-time psychologist and a social worker. Dr Katz has continued to make regular visits to advise staff and consult on patients.

### *Health Education*

During November 1966 Dr F. W. Clements visited the Northern Territory to conduct an in-service training course in child health and health education for nurses. A visit was made to Oenpelli Mission Station to follow up



studies commenced earlier. Dr Clements also conducted a pilot project in community health education at Warrabri Welfare Settlement in the Southern Region of the Northern Territory. In addition to the routine teaching of fifth year medical students, Dr Clements gave lectures on child development and nutrition for post-graduate students reading for the Diploma of Public Health and the Diploma of Tropical Medicine and Hygiene, to student dietitians, to students undertaking the Bachelor of Education course and to nurses doing post-graduate courses at the New South Wales College of Nursing.

## *Research*

A notable study on endemic goitre in Tasmania, carried out over many years, has been finalised and accepted for publication in the Bulletin of the World Health Organisation. A preliminary inquiry has begun into the needs of infants and children in day nurseries in Sydney.

A long-term study of cretinism in fourteen children is being made. The principle criteria of progress used are measurements of height, span, weight and development quotient. An initial assessment of osseous age, cholesterol and protein bound iodine concentration in the serum is made. Serum calcium concentrations performed on all patients treated with thyroxin have been within normal limits.

The long-term study of rheumatic fever and chorea, begun in 1952, has continued. The objects of this study are to determine the effectiveness of penicillin prophylaxis in preventing rheumatic recurrence and ultimate cardiac damage, and to study the history and course of the disease in as large a group of Australian children as possible. Since its commencement, 281 children have received regular oral penicillin prophylaxis, but thirty-three have been lost from the group during fifteen years, including four who have died. More than sixty of those remaining in the study are now over twenty years of age and are still attending for assessment at regular intervals. In addition to the 281 children receiving regular penicillin prophylaxis, a large number of rheumatic patients, initially attending the Royal Alexandra Hospital for Children, continued to be reviewed annually. The clinic, which is held weekly, also acts as a consultation centre for paediatricians and general practitioners who wish to refer children for opinion concerning diagnosis or management.

The study of chronic urinary tract infections in childhood has also continued. During the year the introduction of a simplified technique of bacterial colony counts as part of the routine urine culture by the Bacteriology Department of the Royal Alexandra Hospital for Children has greatly simplified the interpretation of positive urine cultures.

The care of children with rare inborn errors of metabolism detected by the screening survey of the New South Wales Department of Health has continued. From this survey, there are now twelve young children with phenylketonuria under dietary management. This low phenylalanine diet appears to protect affected children from further brain damage. There are eight children with cystinuria who are under regular supervision. Children with certain other rare metabolic errors have been investigated and their management supervised.

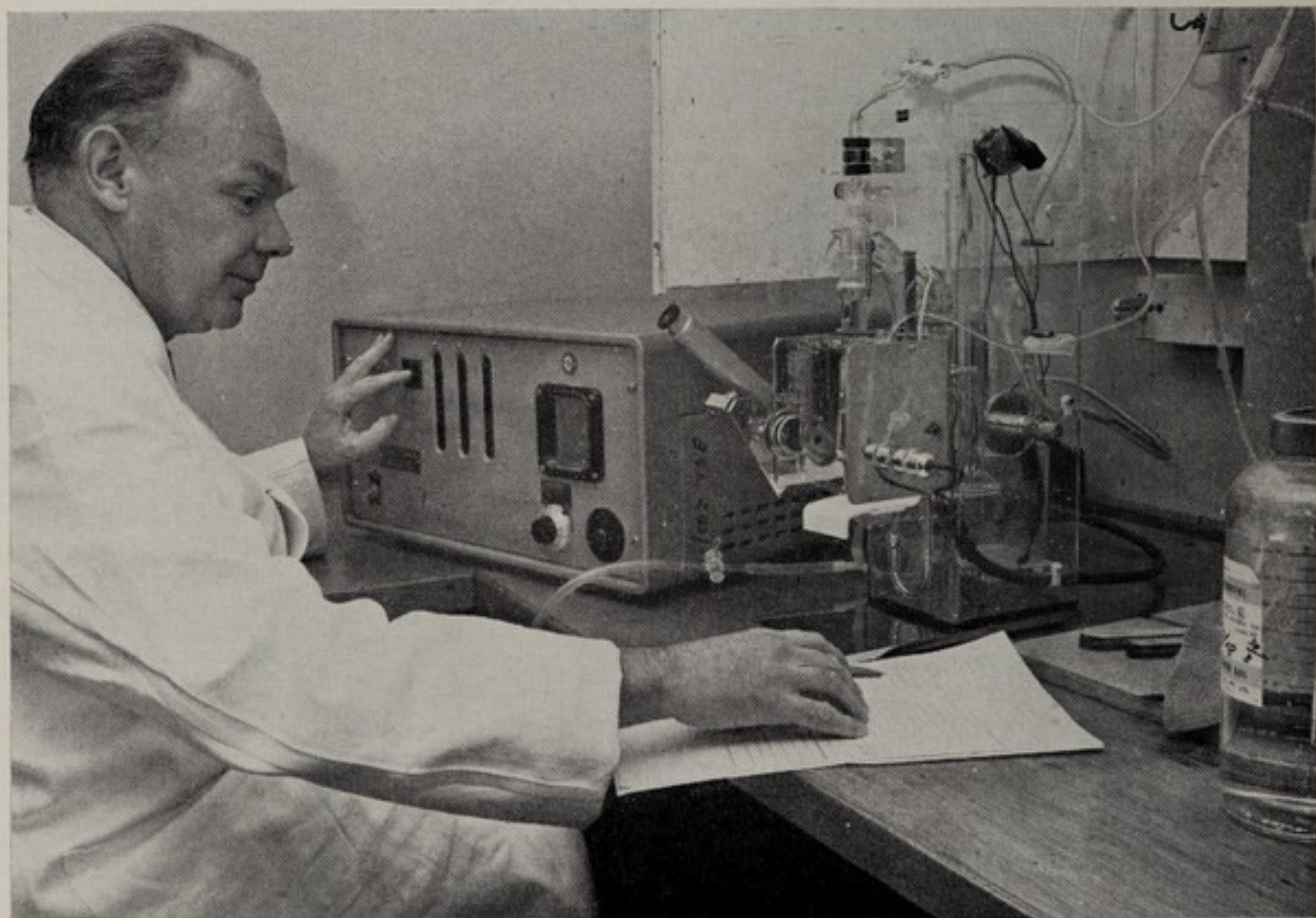


## National Biological Standards Laboratory

The past year was one of continued development and expansion at the National Biological Standards Laboratory. Sampling and testing of therapeutic products increased and the results obtained were an improvement on those for previous years. This improvement can be attributed to the growing awareness in the pharmaceutical industry of the need for strict quality control measures in production and the co-operation which exists between members of the National Biological Standards Laboratory staff and manufacturers.

The need for additional staff to meet commitments in the various fields of research and testing has been recognised by the Public Service Board and increases in staff in several sections have been approved. Recruitment of suitably qualified professional staff, particularly at higher levels, still presents some problems. These, however, are being gradually overcome by recruitment drives both in Australia and overseas.

A symposium was held in Canberra on 30 March 1967 to outline to manufacturers of intravenous fluids and their users work carried out in the Laboratory which led to the preparation of draft standards for these



*Equipment developed at the National Biological Standards Laboratory for detecting particulate matter in intravenous fluids*



products and to demonstrate equipment and methods which were developed for detection of particulate matter. The symposium attracted representatives from leading hospitals in Australia and local and overseas manufacturers.

The Laboratory combined with other organisations in collaborative studies on matters of common interest. It also combined with other sections of the Department in conducting an immunological survey during the Sabin vaccine campaigns in the Australian Capital Territory and the Northern Territory. Of particular interest was a survey of the level of immunity against poliomyelitis and diphtheria in the A.C.T. and, by extrapolation, elsewhere in Australia. This permitted estimates to be made of the proportion of school children who have been vaccinated and the improvement in protection offered by Sabin vaccine.

To ensure the reliability of tests which require the use of experimental animals, infection free animals are needed. A colony of animals has been established under strict quarantine conditions in an attempt to eliminate the risk of infection from outside sources. When suitable accommodation becomes available, it is hoped to maintain strains of experimental animals free from the common diseases which affect the results of tests carried out in the Laboratory.

The principal activities of the various sections of the Laboratory are outlined below, and statistics relating to tests carried out appear in Tables 53 and 54 on page 112.

### *Antibiotics Products*

The programme of testing of all antibiotic preparations which are available as pharmaceutical benefits was completed by December 1966, and by June 1967 this survey had been extended to include all antibiotic preparations for human use available on the Australian market. Examination of bulk tetracycline imported for processing has been commenced and is continuing. This Laboratory has taken part in two world-wide collaborative assays to establish the second international standard for chlortetracycline and an international reference preparation of rolitetracycline. Research has been undertaken into the stability of cycloserine preparations and the influence of the container on the stability of these and other antibiotics.

### *Bacterial Products*

The Bacterial Products Laboratory was enlarged during the year to enable a new microbial and immunological unit to be set up. This unit will carry out purification of bacterial toxins and develop 'in vitro' tests for bacterial vaccines. The testing of veterinary clostridial vaccines is proceeding and expanding as suitable staff becomes available. In connection with the introduction of the Sabin vaccine in the Australian Capital Territory, the Laboratory carried out the collection of samples from some 450 donors. These samples were also examined for their diphtheria-antibody levels to determine the status of diphtheria immunisation in the community.



## *Endocrine Products*

The Endocrine Products Laboratory moved from the Downer Laboratory into a section of the Australian Institute of Anatomy during the year. A complete survey of all heparin injections on the market has been carried out. Sampling of insulins and corticotrophins has been suspended pending the remodelling of the animal house at the Institute of Anatomy. The techniques of radio-immuno-assay of hormones are being developed. When fully developed these will reduce the time taken and increase the precision of a variety of hormone assays. This section also participated in an international collaborative assay on a new heparin standard.

## *Viral Products*

Testing of Salk and Sabin poliomyelitis vaccines was continued during the year. Eight batches covering some five million doses were cleared for use in Australia. Minimum requirements for Sabin vaccine and live attenuated measles vaccine have been drawn up. Research into theoretical and practical analyses of the plaque counting technique is continuing, as is the question of local immunity in infectious laryngotracheitis and antibody production in cultured cells.

## *Pharmaceutical Chemistry*

Research work into detecting and counting particulate matter in intravenous fluid proceeded and modifications were made to draft standards as a result of research carried out. A collaborative study of the efficiency of drugs in tablet form was carried out in conjunction with a New Zealand scientist, Mr G. B. Engel of the Otago University, who spent fifteen weeks in Canberra for this purpose. Interesting and important discoveries were made on the method of release of active material in tablets and tablet disintegration generally. Sampling has shown an increase over the previous year and equipment has now been selected and purchased for a textile testing unit, which is taking an increasing number of samples for testing.

A new technique for the determination of infra-red spectra of powders was developed. This involves the use of attenuated total reflection. The infra-red spectrum is the most valuable method of identification of drugs, but its use has been limited previously by the time involved in sample preparation. The new method reduces this time very considerably and it is now possible to carry out routine checks on bulk drugs and preparations containing more than about 25 per cent active material.

## *Pharmacology*

New drug applications submitted to the Pharmacology Section for pre-clinical evaluation are increasing and the Public Service Board has approved additional staff to assist in this work. Routine testing for pyrogens, toxicity and histamine-like substances has been carried out, but this has been restricted during the latter part of the year because of modifications to the animal house at the Institute of Anatomy.



## Commonwealth Acoustic Laboratories

The most important development at the Commonwealth Acoustic Laboratories in 1966-67 was the expansion of clinical facilities into rural areas. The new, permanently-staffed laboratory at Newcastle and a visiting laboratory at Lismore were officially opened. A permanently-staffed laboratory at Parramatta and visiting laboratories at Wollongong and Orange have been planned. The branch laboratories in Melbourne and Adelaide moved into new and larger premises and an extension of the Brisbane laboratory has been planned. The psychological staff was increased during the year to cope with the extra case load involved.

The issue of the new subminiature in-the-ear hearing aid, Calaid E, to deafened ex-servicemen for the Repatriation Department and to children under the National Health Scheme has been an outstanding success. Production of the hearing aid commenced in June 1966 and to date nearly 3,000 have been produced and issued.

### Services

#### *Clinical Audiology and Psychology*

The clinical audiology and psychology services carried out through the Laboratories in the States continue to expand. Audiological services are now established in twelve country centres throughout Australia. There was a considerable increase in psychological staff during the year and intensive training was carried out. A pre-school officer has been appointed to work with the Chief Psychologist in planning a more comprehensive service for specialised guidance of parents, home training and educational follow-up of selected pre-school children.

The Psychologist-in-Charge of the South Australian Laboratory visited Darwin and Alice Springs to carry out a regular hearing test and aid fitting programme in this area. The Psychologist-in-Charge of Audiology Services attended the 8th International Congress of Audiology, Mexico City, in November 1966 and a meeting of the Acoustical Society of America in Los Angeles. He also visited various audiological research and diagnostic centres in the U.S.A., U.K. and Europe. The second two-yearly conference of Psychologists-in-Charge of Laboratories was held in the Central Laboratory, Sydney, in March. Such conferences are proving an ideal means of keeping staff members informed on the latest developments in research and audiological psychology.

#### *Hearing Aids and Hearing Conservation*

The Calaid E programme is well under way and the scheme is now operating in all States. There has been continued progress in hearing conservation work with the Armed Services. Lectures were given at the Southern Command medical weekend on hearing conservation in Melbourne



and various types of apparatus that may be used for hearing conservation were demonstrated. A visit was also made to Canberra to carry out audiological testing at the Royal Military College, Duntroon. A hearing conservation training course for R.A.A.F. hygiene inspectors was held at Central Laboratory. This training will help the R.A.A.F. personnel concerned to set up hearing conservation programmes on their own bases throughout Australia.

## *Engineering*

During 1966-67 the Engineering Section supervised the completion of new laboratory premises in the Commonwealth Centre, Melbourne. Further planning was also done for new laboratories in Adelaide and Wollongong, and preliminary planning was begun for the proposed new laboratory at Parramatta, Sydney.

In collaboration with a special committee set up by the Prime Minister's Department, acoustic advice was given in connection with the design of the 'talking chair', part of Australia's contribution to Canada's 'Expo 67'. The N.S.W. Government Railways sought advice for the design of a locomotive engine test house with acoustical treatment to preserve hearing and reduce annoyance to nearby communities. Visits were made to Department of Supply establishments at Lithgow, Footscray, Maribyrnong and Bendigo to assist with hearing conservation programmes and give advice on the reduction of noise. Advice was also given to the Atomic Energy Commission, Australian Shipbuilding Board and contractors who operate noisy installations on Commonwealth land to minimise hearing damage to operators and avoid community annoyance.

## **Research**

### *Acoustics and Electroacoustics*

The main efforts of the Acoustics and Electroacoustics Section during the year were concentrated on investigations into noise standards in ships of the Royal Australian Navy. A long-term investigation of communication in noise with particular reference to problems in the Armed Services has commenced with the evaluation of equipment. Measurements of the acoustic properties of communication headsets for the Army were completed and a relevant report was published. The efficiency of equipment currently in use in the Royal Australian Navy is being determined.

Research on the acoustic properties of on-the-head hearing aids was continued and satisfactory methods were developed for the determination of the efficiency of microphone mountings under test conditions. Work on the isolation of vibration and shock provided by these mountings is continuing. The results of these investigations may increase the acoustic gain achieved in practice with the Calaid E and reduce maintenance costs.

### *Audiology-Psychology*

A pilot study for testing the hearing of six-months-old babies at seven baby health centres in the Sydney suburban area was commenced. Preliminary results indicate that it is feasible to test babies at this age for



deafness and to detect those whose hearing is sufficiently impaired to be a serious handicap in language development. Babies who fail tests in a baby health centre and subsequently fail tests administered by paediatricians of the Maternal and Baby Welfare Division of the N.S.W. Department of Public Health are referred to the Commonwealth Acoustic Laboratories for further testing. Among other things, these tests include the use of encephalograph and computer to record auditory evoked cortical potentials.

Research has continued on the use of this technique in audiological testing. The feasibility of measuring thresholds of hearing by detecting the evoked response to low level sound stimuli has already been shown. Good results are obtained with children but there are a number of problems still to be solved in applying the technique to babies, where, of course, it would be most valuable. The present research is aimed at using measurements of evoked response to sound well above threshold to show variations in the detection of loudness changes among people with sensorineural deafness. Present indications are that information of diagnostic significance can be obtained from tests of this nature.

Studies of the effects on hearing of ultrasonic therapy for Meniere's disease are continuing. A comprehensive battery of audiological tests is being used on each patient prior to the operation and at follow-up. Another important research project, which was completed recently, dealt with deterioration that occurs in the hearing of children with sensorineural deafness. The results of this investigation confirmed previous findings concerning the deleterious effect of using high-power hearing aids.

### *Medical Ultrasonics*

There has been considerable progress in research in the application of ultrasonics to cardiology. This work has been carried out in conjunction with the Cardiology Clinic of Prince Henry Hospital. The work of the Ultrasonic Section has now been extended to Newcastle Hospital and C.A.L. staff members are co-operating in the establishment of ultrasonic investigation and research in this hospital.

After preliminary clinical trials in the Ultrasonic Section at Central Laboratory, the breast echoscope has now been installed in the Royal North Shore Hospital, Sydney, for investigation of the structure of the human breast and analysis of lumps. Laboratory staff are working on this project in co-operation with medical specialists at the hospital. The C.A.L. abdominal echoscope is being regularly used in clinical diagnostic applications at the Royal Hospital for Women, Sydney.

An investigation of the biological effects of ultrasonics has commenced in conjunction with the School of Pathology at the University of New South Wales. Work on the round window ultrasonic technique for the treatment of Meniere's disease has continued. The project, carried out in conjunction with the School of Veterinary Science, University of Queensland on the ultrasonic estimation of lean and fat has continued and work on the detection of minute air bubbles which cause 'bend' pains when divers come too quickly to the surface is being carried out in conjunction with the Aero Medical Research Laboratory of the University of Adelaide.



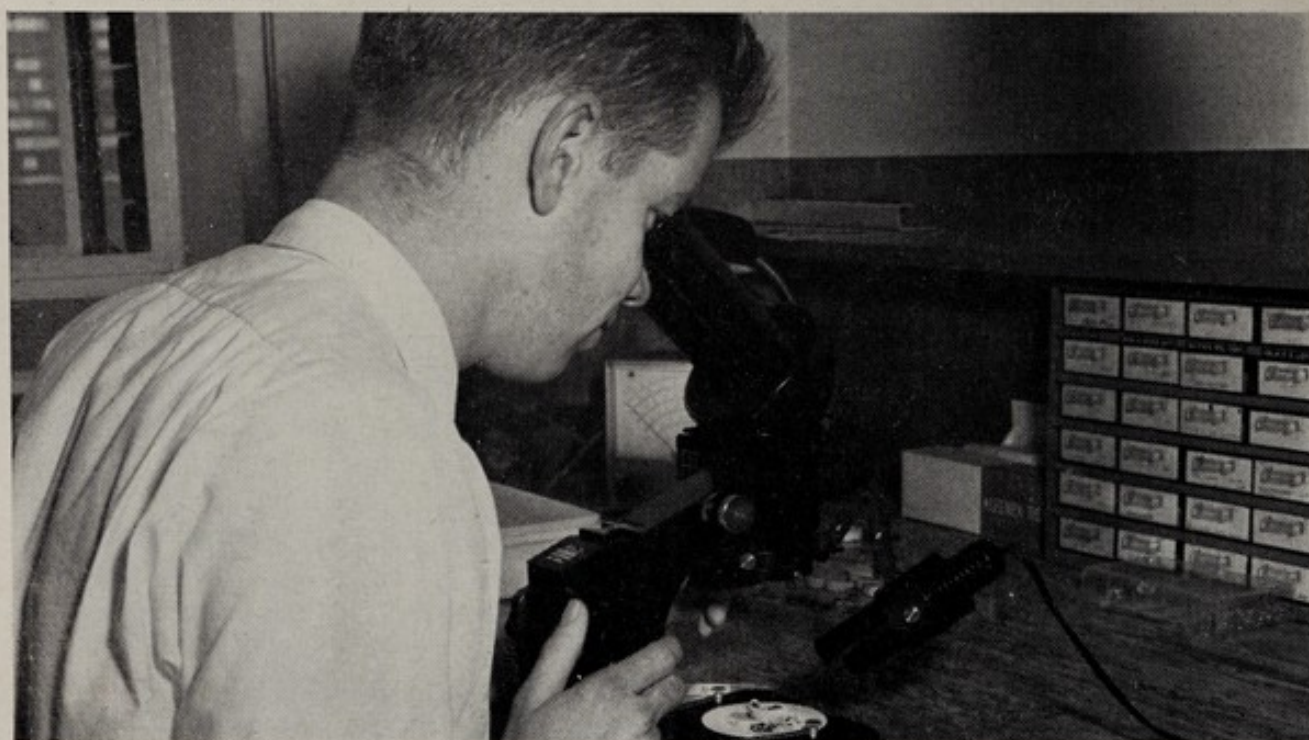
## *Psychoacoustics*

Experiments on the effect of variation in rise time and repetition rate on the loudness and detectability of acoustical impulses were successfully completed. A paper entitled 'Effect of spectrum of loudness of impulse noise' was presented to the International Meeting on Aerospace Medicine at Sydney in November 1966. This stressed the need for an agreed method of calculating the loudness of impulse noise. Preliminary analysis of data obtained from relevant experiments undertaken in the Laboratories suggests that it may soon be possible to provide such a method. The social importance of this study lies in the fact that it could help to rationalise legislation concerned with the annoyance due to such impulse sounds as the sonic boom.

## *Standards*

During the year a considerable amount of work has been done by C.A.L. staff members in connection with Australian standards in acoustics. The sub-committee on instrumentation and measurement techniques, of which the Physicist-in-Charge of the Electroacoustics Section is chairman, discussed the adoption of a new IEC standard on filters for analysis of noise and drafted a standard on the measurement of noise emitted by machines for use in Australia. The same sub-committee also finalised work on sound level meters, and two new Australian standards, AS Z37-1967, sound level meters, type 1—general purpose, and AS Z38-1967, sound level meters, type 2—precision, have been published.

The sub-committee on batteries has now finished discussions on an Australian standard for batteries and a draft standard has been published. A meeting of the bioacoustic and psychoacoustic sub-committee discussed draft international standards for noise rating with respect to annoyance and hearing conservation and considered their adaptation to Australian conditions.



*Checking Calaid E hearing aid at Commonwealth Acoustic Laboratories*



# Commonwealth X-Ray and Radium Laboratory

Two important developments at the Commonwealth X-Ray and Radium Laboratory during the year were the introduction of an arrangement whereby the Laboratory supplies radon direct to New Zealand users and the decision to install a whole-body monitor at the Laboratory.

## *Commonwealth Radium*

The Laboratory continued to discharge its responsibility for the care and maintenance of the Commonwealth radium issued on loan to approved hospitals and research centres. The re-mounting of some of this radium in containers more appropriate to modern treatment techniques has continued. In addition, radium containers previously issued on loan have been progressively recalled for inspection and testing to ensure that they meet relevant standards.

Following a request from the New Zealand Government, arrangements were made to supply radon to New Zealand users direct from the Laboratory. This service, which came into operation on 1 April 1967, replaces the service previously operated by the National Radiation Laboratory in Christchurch.

The Laboratory manufactures the gold tubing required for use by all radon services in Australia. During the year 1,670 feet of gold tubing were constructed.

## *Diagnostic Radiology*

The Laboratory has continued to provide an advisory service to hospital authorities and to Government departments on technical aspects of diagnostic X-ray equipment, including that used by the States under the tuberculosis arrangement between the Commonwealth and the States.

The arrangement under which the Laboratory provides a service to orthodontists by maintaining specially designed equipment for taking skull radiographs of a particular type has been continued. The same equipment is also made available to the Growth Unit of the Anatomy Department, University of Melbourne, in a co-operative, long-term investigation on the sequential developments of skull growth.

Assistance with other special projects has also been given to Government instrumentalities, universities and similar organisations.

## *Radiation Dosimetry*

As part of the programme relating to the provision of national radiation standards, the existing free-air chamber at the Laboratory will shortly be certified as the Commonwealth standard of exposure in the intermediate range of X-ray energy. A smaller free-air chamber, designed and built in the Laboratory, has permitted the investigation of problems arising in



the measurement of X-rays of low energy, with a view to extending the range of accurate measurement to X-rays of this type and ultimately to establishing a corresponding national standard. Work is also proceeding on the measurement of X-rays of very high energy, again with a view to establishing a suitable national standard of measurement. A small cobalt-60 unit is being designed and constructed. This unit will provide a source of high-energy X-rays for experimental investigations.

Concurrently with these new developments, the routine services relating to measurement of radiation output and associated characteristics of X-ray equipment, used for therapeutic purposes in hospitals and in private medical practices, have been maintained.

### *Radio-Isotopes*

The Laboratory provides an advisory service on physical aspects, including radiation safety, of the use of radio-isotopes in medical diagnosis, treatment and research. It also acts as the central procurement agency for purchasing and distributing all radio-isotopes used in Australia for these purposes.

During the year, 2,401 shipments of radio-isotopes were procured by the Laboratory for medical use. This represents an increase of 12 per cent over the number of shipments for the previous twelve months. Of the total 266 shipments were procured from the Australian Atomic Energy Commission, compared with 156 shipments in the previous twelve months. The remainder of the shipments were from overseas sources, which included the United Kingdom, Holland, India and France. The total shipments included forty-nine different radio-isotopes in many different forms.

A total of 37,548 individual issues of radio-isotopes were made in 1966-67, an increase of 52 per cent over the number for the previous year. These doses are made available without charge to all classes of patient through the National Welfare Fund. The marked increase in expenditure from the National Welfare Fund for radio-isotopes procured by the Laboratory for medical purposes over the past twelve years is shown in Table 58 on page 113.

The Laboratory has responsibilities under the National Standards legislation and work is proceeding on setting-up equipment for the precise measurement of radio-isotopes in terms of the curie, with a view to establishing suitable national standards of measurement.

### *Protection Against Ionising Radiation*

Although legislative control in Australia of the use of ionising radiations from irradiating apparatus and radioactive substances is mainly the responsibility of the States, the Laboratory co-operates with State authorities and also maintains its own advisory function in this field. Technical assistance available from the Laboratory ranges from the detailed design of radiation protective shielding in X-ray departments and radio-isotope laboratories to the monitoring of radiation levels and the assessment of proposed safety procedures.

During the year assistance was provided to Government departments on matters relating to the safe transport and storage of radioactive materials.



Investigations into the technique and possible applications of thermoluminescent dosimetry, and into the measurement of power density of the intense beams of 'microwave' radiation emitted by radon installations, have continued. The Laboratory has also been consulted about hazards associated with the use of lasers.

### *Film-Badge Service*

The film-badge service continues to expand. In 1966-67, 74,711 individual monitoring films were assessed and reported on, compared with 66,528 for the previous year. The number of centres—hospitals, private medical and dental practitioners, research departments and industrial organisations—registered with the service rose from 956 at the beginning of the year to 1,063 at the end.

The increasing demand for the film-badge service has made a review of its operation necessary. As space and staff are limited, it has become necessary to employ automatic techniques for assessment of the films and recording of the results.

### *Radiochemistry and 'Low-Level' Measurements*

As part of a continuing programme of monitoring global fall-out from nuclear weapons tests, radio-assays were made during the year of public water supplies for strontium-90 and caesium-137, of liquid milk for caesium-137, of ion-exchange fall-out collectors for caesium-137, strontium-89 and strontium-90 and of air filter samples for strontium-89, strontium-90, caesium-137, cerium-141, cerium-144, barium-140 and plutonium-239. In addition, naturally occurring radium D (lead-210) has been determined in relevant samples. A total of 2,096 samples was chemically prepared and subjected to radio-assay in 1966-67.

This continuing programme of monitoring is supplemented during periods of actual nuclear weapons testing in the atmosphere. The Laboratory is making relevant measurements for the Atomic Weapons Test Safety Committee and, through it, for the National Radiation Advisory Committee, during the series of nuclear weapons tests being conducted by France in the South Pacific Ocean.

A programme of investigation into the assaying of radioactive substances in environmental samples is being continued and, during the year, this included the assay of plutonium in air, rainwater and biological material, the assay of radium D in human bone and of caesium-137 in meat. A series of computer programmes has been prepared to facilitate the complex calculations necessary in this work.

A whole-body monitor, designed by the Laboratory, is being installed. This device is to be used for the detection and measurement of minute amounts of radioactive material in man. A steel-walled 'room' and ancillary equipment for the whole-body monitor is being built by the Laboratory staff.



# Commonwealth Bureau of Dental Standards

The Commonwealth Bureau of Dental Standards has reached the age of twenty under its present title, but its roots go back about another ten years to research done at the Australian College of Dentistry under the leadership of Dr Howard Worner, now a world leader on continuous production methods of metal extraction. Over the years, the Bureau has steered a course between the Standards Association of Australia, the Australian Dental Association, the Dental Colleges, the dentists, technicians, dental laboratories and traders and it has done this in such a way that it has earned the respect and appreciation of each by the services it has rendered. The Bureau provides independent and unbiased information on the quality of dental materials and has been instrumental in materially raising the quality of products available to dentists and of dental practice in Australia.

## *Preparation of Standards*

Apart from continuous research into more appropriate methods of testing dental materials and the revision of completed standards to accord more closely with clinical requirements, two new fields of standardisation have opened up. These are the orthodontic (movement of teeth) and the endodontic (treatment of the diseases of the tooth pulp).

The standard T32 'Resilient Orthodontic Wires' was completed in 1965 and now a sub-committee of the Standards Association for Orthodontic Materials has been set up. The Bureau has been asked to provide the data on the quality of elastic bands for the movement of teeth, metal bands for bonding teeth and cements for attaching the metal bands. These alone could provide a programme for a long time. The Australian Society of Endodontology has asked for preparation of standards for endodontic files and reamers and an international colour coding of endodontic instruments has been proposed.

Hypodermic equipment for general medical use and a new restorative resin for posterior teeth are under consideration and the Australian standard T15 for alginate impression material has been revised. Over thirty standards have been completed.

## *International Standards*

There is a great deal of international activity in the field of standardisation of dental materials led by the Federation Dentaire Internationale (F.D.I.) and the International Organisation for Standardisation (I.S.O.). These two organisations are planning combined action. The Bureau has a member and adviser on the F.D.I. Committee. A number of standards have been approved and more are being prepared by correspondence and with the aid of research units throughout the world.



## *Testing*

During the year there was a steady flow of requests by manufacturers and distributors for testing of products. The products comprised:—mineral products, 35; cements, 15; waxes and impression materials, 43; synthetic resins, 37; metals and alloys, 52; therapeutics, 31; instruments, 1; a total of 214. Although the majority were tested to completed standards, in many cases standards did not exist and tests for quality had to be devised.

Since there is no organisation in Britain similar to the Bureau of Dental Standards, a leading manufacturer had his full range of products tested with a view to entering the Australian market. Other overseas firms have already found this a profitable course. In several cases Australian dentists and their patients have, by this means, been protected from inferior products. The materials tested have included denture base resins, artificial stone, casting investments, artificial teeth, orthodontic wires, impression materials, elastic materials, mouth washes, cements, mercury, waxes, cavity varnishes and local anaesthetics.

## *Meetings and Lectures*

The outstanding event of the year was the Dental Congress held at the Melbourne University in February-March 1967. The Officer-in-Charge of the Bureau presented one of the main lectures and the Bureau was represented by an extensive display and demonstrations by the staff on testing and handling of dental materials. In its advisory and teaching capacity, members of the Bureau have been involved in a large number of lectures to a wide variety of associations and groups connected with dentistry.



## **Institute of Anatomy**

A great deal of effort was devoted by the Nutrition Section of the Institute of Anatomy during the year towards assisting the Department of Territories to marshal and present the facts relating to diet and nutrition in connection with the 'basic needs' of local officers employed in public service in the Territory of Papua and New Guinea. At the request of the South Pacific Commission, and with the concurrence of the administering authorities of the Territory, the Institute is collaborating in a study with Professor H. A. P. C. Oomen, of the Institute of Tropical Hygiene, Amsterdam. The study is of certain aspects of the energy and nitrogen metabolism of New Guinea Highlanders, whose basic food is the sweet potato, compared with indigenous medical students and nurses in Port Moresby, whose basic foods now resemble those of Europeans.

The staff of the Institute contributed papers to the 39th ANZAAS Congress and the 3rd Far East Symposium on Nutrition. As Chairman of the Standing Committee on Nutrition of the Pacific Science Association, the Medical Officer-in-Charge presented its report to the 11th Pacific Science Congress. The Committee expressed concern at the widening gap in food consumption between the poorly nourished and the well-nourished countries.

In a paper contributed to the population symposium in the same congress, attention was drawn to the difficulties imposed by the climate and terrain of New Guinea in producing and transporting local food surpluses that could be used to support urban growth. This situation was compared with Australian conditions, which are very favourable to the production and transportation of large food surpluses. A paper entitled 'Nutrition Education and Ecological Awareness' was delivered at the 3rd Far East Symposium on Nutrition. This paper was orientated towards the concept that individual human organisms are part of wider biological organisms.

### *Museum*

In the museum section of the Institute the exhibit on the ancestry of man was completed. Work on a display on the brain and nervous system has begun. By means of anatomical specimens, models and by two dimensional pictorial representations, it is hoped that it will prove possible to convey the idea of the brain and nervous system as the most highly developed integrative system of life.

The compilation of the catalogue of the ethnographic collections is proceeding satisfactorily and a start has been made on entering the items in the accession register. Additional material is being obtained through the activities of the Australian Institute of Aboriginal Studies.



# National Health and Medical Research Council

Two sessions of the National Health and Medical Research Council were held in 1966-67. The 63rd Session was held in Canberra on 4 November 1966, and the 64th Session in Perth on 18 April 1967. In addition, the committees and sub-committees reporting to Council held over eighty meetings. These committees and sub-committees include in their membership leading authorities in all fields of medicine and its related sciences.

## *Medical Research*

During the year a new organisation of the medical research functions of the Council was implemented. This has resulted in a strengthening of capacity for long range planning to determine the optimum utilisation of funds and for ensuring that the medical research activities and policies of the Council have the understanding and approval of the scientific and lay public.

In recognition of the experience and efficiency of the Council as a grant giving authority, the Commonwealth Government approved an increase of 25 per cent in the appropriation to \$1,065,000 per annum. Co-ordination with the Australian Research Grants Committee has ensured that duplication of Commonwealth support for research projects has been eliminated. Grants were made in 1966-67 to provide training in research and to support well over a hundred different research projects. Recipients of these grants have, during the year, published the results of their work in more than 550 scientific papers.

To provide the necessary assurance that the Council's medical research work is being conducted with maximum effectiveness, regular qualitative evaluation is required. An extensive study of areas lacking support is being conducted with the co-operation of State health departments, universities, research institutes and professional associations and this has provided many excellent suggestions for increasing the effectiveness of the Council's research programmes.

For many years the Council has subsidised with grants from the Medical Research Endowment Fund the publication of reports and monographs on research. The past year has seen the publication of two such reports, one on traffic injury in Brisbane and the other a summary of the results of a study of over 300,000 illness episodes seen by general practitioners.

A detailed report of the work supported by National Health and Medical Research Council grants is presented to Parliament each year. Details of grants made from the Medical Research Endowment Fund during 1966-67 are given in Table 59 on page 114.

## *Epidemiology*

The Council's recommendations for smallpox vaccinations have been enlarged by the inclusion of recommendations referring to the vaccination of pregnant women. The use of Sabin oral poliomyelitis vaccine in Tas-



mania and overseas has been carefully studied and the Council has issued a statement regarding the safety of this vaccine and made recommendations concerning the schedules of dosages and the optimum season for vaccination. The Council has also recommended that consideration be given to a joint Commonwealth-State clinical trial of measles vaccine in Victoria.

### *Fats and Cardiovascular Disease*

After careful consideration of all the available evidence the Council has issued a statement supporting the recent conclusions of a sub-committee of the National Heart Foundation concerning the relationship of dietary fats to coronary heart disease.

### *Fluoridation of Water*

At its meeting in April 1967, the Council expressed concern at the delay in the introduction of fluoridation of public water supplies and pointed out that, as stated in its recommendation of November 1961, fluoridation is safe and has been shown to result in a significant reduction in dental caries. The Council strongly urged water authorities in Australia to give urgent consideration to the implementation of this important measure in the interests of the health of children.

### *Food Additives and Food Standards*

The necessity for additives of various kinds in foodstuffs for human consumption is under continuous review by the Council and further recommendations have been made. A table of suggested allowable tolerances for residues of agricultural chemicals in or upon vegetables, fruits and other foods has been prepared. Food standards have been recommended for baking compounds, dried milks, edible fats and oils, fish and meat products and a bacteriological standard for pre-cooked frozen prawns introduced. Codes of practice have been published for the 'Handling of Frozen Foods' and for the 'Sale, Service, Display and Transportation of Frozen Foods'.

### *Home Safety*

The Council has expressed its interest in the work carried out by the National Safety Council of Australia in the field of home safety and has offered its co-operation through appropriate committees. The Council has also stated that there is a need for effective legislation to reduce the incidence of accidental burns, including standards for flame resistance of fabrics, garment labelling and standards for guarding of heating appliances.

### *Maternal and Child Health*

The Council has drawn the attention of medical practitioners to the effect of certain drugs upon the foetus and also to the effect of heavy smoking during pregnancy. A standard of antenatal care has been produced for distribution to medical practitioners. Steps have been taken towards the



preparation, at regular intervals, of reports collating the findings of maternal mortality committees in all States and Territories on the factors responsible for maternal deaths in Australia.

### *Medical Research among Aborigines*

The Council has continued to examine all projects put forward to carry out medical research among the Aboriginal population of Australia. This service was initiated at the request of the conference of Commonwealth and State Ministers responsible for Aboriginal welfare. Approval is only given for a research proposal when it will benefit the health of Aborigines.

### *Medical Statistics*

The Council has taken steps to introduce the 8th Revision of the International Classification of Diseases into Australia both for mortality and morbidity statistics. A scheme has been prepared for the introduction of a uniform system of hospital morbidity statistics recording, and it is expected this will begin to operate in 1969. Attention has also been drawn to the contribution which can be made to the study of cancer aetiology by the development of cancer registries. The council has decided to set up a Standing Cancer Registration Committee which will advise on tabulations of cancer statistics and make recommendations to assist in the co-ordination of activities of existing cancer registries.

### *Mental Health*

A Mental Health (Standing) Committee has been set up and held its first meeting prior to the 64th Session of the Council. Through the work of this committee the Council has been able to make a number of recommendations in the field of mental health. These have included recommendations on the long-term care of cases of brain damage, research in mental health and uniform statistics of mental health. A glossary of mental disorders has been produced for use with Section 5, Mental Disorders, of the 8th Revision of the International Classification of Diseases.

### *Occupational Health*

Further recommendations in the field of occupational health have been approved. A recommended standard for paint has been published to apply to imported and locally produced paints. This includes recommendations on the content of scheduled poisons and insecticides, restrictions on the use of paints containing poisons, powers to order destruction and warning labelling. Recommendations have also been made concerning the licensing of users of ion smoke detectors.

### *Phenacetin and Nephropathy*

In recent years considerable interest has been shown in the association between certain kidney diseases and the excessive taking of analgesic preparations containing phenacetin. The Council has recommended that a warning label should be required on such preparations, pointing out that the medication may be dangerous when used in large amounts or for a long period.



## *Radiation Health*

The Council is preparing codes of practice on the diagnostic use of X-rays in medicine and dentistry, safe use of radioactive luminous compounds and safe use of X-ray equipment for spectrographic analysis. It is also preparing a survey to assess the genetic and somatic doses to the Australian population from the medical and dental uses of ionising radiation and radioactive substances.

## *Road Safety*

Recommendations have been made concerning resuscitation equipment which it is considered desirable to carry in ambulances. The Council has drawn attention to the need for a re-examination of the standards for motor cyclists' safety helmets. Attention has also been drawn to the need for co-operation between States in the collection of uniform statistics of road accidents.

## *Scheduling and Labelling of Poisons*

The uniform schedules for the guidance of persons drawing up legislation on the scheduling and labelling of poisons have been further enlarged and amended by the addition of new compounds and by the inclusion of simple first aid directions and warnings for labelling. An index has also been included which indicates substances and compounds previously covered only by 'blanket' entries in the schedules. A completely revised version of the schedules has been published in the Report of the 64th Session of the Council.

## *Smoking Attitudes in Australia*

In response to a request by the conference of Commonwealth and State Ministers for Health, the Council recently set up a sub-committee to design a survey which would give data on the patterns of acquisition of the smoking habit, the attitudes of Australian children towards smoking and the social forces acting on children which tend to promote or inhibit the beginning of the smoking habit. The sub-committee's design for a survey has been approved and its organisation on a national scale has begun.



# World Health Organisation

The 20th World Health Assembly was held at Geneva from 8 to 26 May 1967. One hundred and nineteen member and two associate member states were represented. Australia was represented by Dr A. J. Forbes, the Commonwealth Minister for Health, as Chief Delegate, Sir William Refshauge, as Deputy Chief Delegate, Miss June Barnett, First Secretary, Australian Consulate-General, Geneva, Dr J. Boxall, Director, International Health, Department of Health, Dr A. Johnson, Chief Medical Officer, Australia House, London, Dr R. Cumming, Medical Director, Australian Migration Office, Athens and Dr A. Tarutia, Medical Officer, Papua.

Sir William Refshauge was elected a member of the Executive Board for three years. Australia has previously been represented for one year in 1949 and for a full three-year term in 1957-60.

## *Budget*

The Budget for WHO in 1966 was 21 per cent higher than that for the previous year. It is proposed that after 1967 the annual increase will be kept to about 9 per cent. Thus for 1968, the amount is \$US56,123,000, and the proposed budget for 1969 is \$US61,174,000. A joint inspection unit of eight inspectors, chosen from national inspection bodies and nominated by countries to be designated at the 21st World Health Assembly, is to examine matters bearing on efficiency and economy in the use of the organisation's resources.

## *Malaria*

While malaria is not a direct problem in Australia, in many countries, particularly in Africa, it is an important deterrent to the realisation of full economic and social development. Sufficient finance and trained manpower are often not available and the general administrative and health services cannot cope with full malaria eradication programmes. Delays in the global programme lead to further aggravation of problems such as resistance to insecticides. Notwithstanding these difficulties, more than 1,250 million people now live in areas where malaria has been eradicated, or where eradication programmes are in progress.

Fields of research include chemotherapeutics, epidemiology, parasitology, study of the effects of new insecticides, and also the socio-economic effects of the disease. At the 20th World Health Assembly it was resolved to intensify fundamental research and to study how best to carry out a re-examination of the global strategy of malaria eradication.

## *Smallpox*

A global programme for smallpox eradication was first launched by the 11th World Health Assembly in 1958. However, transport, equipment and vaccine are usually scarce in those countries where the disease is



endemic. In 1966 some 65,500 cases were reported compared with 64,300 in 1965. With a view to co-ordinating the eradication programme the 19th Assembly, in 1966, set up a ten-year plan to start in 1967. Meanwhile endemic regions persist in South-East Asia, Africa south of the Sahara and several countries of South America. Europe, North and Central America and the Western Pacific Region continue to maintain their status as non-endemic areas.

WHO's contributions to smallpox eradication include preparation of a comprehensive manual setting out the principles and technical considerations of the eradication programmes, assistance in formulating plans of operations, health education, surveillance and health laboratory services, statistical methodology, promotion of vaccine production facilities, provision of consultant services and technical assistance, preparation of vaccine reserves, and establishment of training courses, fellowships and scientific and research groups.

Vaccination is a safe and effective measure for the control of smallpox and is recommended at birth in endemic countries, particularly as differential diagnosis becomes more difficult as the incidence of the disease declines. Comparatively little is known about the smallpox virus and to aid in the eradication campaign a reference strain of vaccine for use in potency testing has been developed.

### *Cancer Research*

The 18th World Health Assembly approved the establishment of the International Agency for Research on Cancer, with a view to promoting international co-operation in this field. The Agency has now been established in Lyon, France, and through the generosity of the French Government, a modern multi-storey building is to be built to replace the present temporary premises.

The present programme includes the building of two regional laboratories, one at Singapore and the other at Nairobi. Fellowships are being offered to research workers throughout the world for periods of three months for senior research workers, and of one year for trainees. As one of the nine member states of the Agency, Australia contributes \$134,398 per annum and sends a representative to the meetings of the Agency.

### *Pharmaceutical Preparations*

There was considerable discussion at the 20th Assembly on quality control of pharmaceutical preparations, and particularly on measures to ensure stricter control in international commerce. An outline of a standard for the manufacture of pharmaceutical preparations had unanimous support and there was also support for the proposal to provide regional quality control laboratories to assist underdeveloped countries. A study is also to be made of the ethical and scientific criteria that should govern the advertising of drugs.

### *Dependence-Producing Drugs*

As the increasing abuse of L.S.D. and related hallucinogenic substances, with their inherent risk to the health of the individual and society, calls for effective counter measures, WHO resolved that the use of psychotropic



drugs be restricted to scientific and special medical purposes, that competent health authorities supervise production, distribution and conditions of use, and that suitable education programmes be sponsored. The feasibility of international control is also to be studied.

It was also resolved that those drugs of the sedative and stimulant types which have been found to be dependence-producing should be restricted to prescription only, transactions should be supervised from production to retail sale, all producers should be licensed, trade should be limited to authorised persons and possession without authorisation should be prohibited.

### *Equivalence of Medical Degrees*

Information on length of study for primary medical qualification, content of curricula, titles obtained on qualification and special requirements for the practice of medicine is to be sought by WHO. As each country has sovereign powers in setting standards, a study of relative equivalence of both basic and post-graduate qualifications will be a lengthy and difficult process.

### *The Challenge to Public Health of Urbanisation*

Over the last 100 years mankind has doubled in numbers but the world's city population has increased five times. A third of this urban population lives in slums and shanty towns. Even where basic physical requirements are met, the modern city threatens the health of its citizens in many ways, particularly in mental health. As counterpoints to the glamour of the city, its employment opportunities, educational wealth and cultural achievements there are delinquency, crime, prostitution, alcoholism and the excessive use of drugs. Technical discussions were held on these problems during the 20th World Health Assembly and it was accepted that there was a need for well planned and properly implemented urbanisation with health authorities and WHO accepting the challenge of urbanisation.

### *Regional Committee for the Western Pacific*

The 17th Session of the Regional Committee for the Western Pacific was held at Manila from 21 to 27 September 1966. The Australian delegation was headed by Dr H. E. Downes, Deputy Director-General of Health and included Dr Reuben Taureka, Department of Public Health, Territory of Papua and New Guinea, and Mr D. R. Argall, Third Secretary, Australian Embassy, Manila. Fifteen countries were represented at this Session as well as representatives of thirteen international organisations.

The Regional Director, Dr Francisco Dy, referred to the importance of national health planning and of assistance at local levels in the South Pacific and stressed the importance of preventive rather than curative medicine. The communicable diseases, cholera, tuberculosis, filariasis, leprosy, encephalitis and haemorrhagic fever were still present in the Region. Further efforts in environmental health were needed to reduce intestinal diseases.



## Commonwealth Grants

The Commonwealth Government, through the Department of Health, makes available grants to State Governments and non-profit making organisations to subsidise various schemes for the promotion and maintenance of health services for the community.

### *Australian Red Cross Society—Blood Transfusion Service*

The Blood Transfusion Service is possibly the most important of the services operated by the Red Cross Society in Australia and its Territories. Since 1954 the Commonwealth has made an annual grant to each State Government, equal to 30 per cent of the operating costs of the Blood Transfusion Service incurred by the Society in each State, provided that 60 per cent of the operating costs are met by the State concerned. This has left 10 per cent of the operating cost to be met by the Society.

Grants made by the Commonwealth to the Society since 1953-54 are shown in Tables 60 and 61 on page 114.

The Society also operates blood transfusion services in the Australian Capital Territory and Northern Territory, the Commonwealth making grants to the Society equal to 90 per cent of the certified operating expenses. Grants during 1966-67 were \$10,566 for the Australian Capital Territory and \$2,321 for the Northern Territory.

### *Royal Flying Doctor Service*

Since 1936 the Commonwealth has been making grants towards the operational and capital costs involved in conducting the Royal Flying Doctor Service. The operational grant during 1966-67 was \$150,000 and the capital grant \$86,350. 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. These medicine chests are used when doctors give medical advice by radio.

### *Home Nursing Subsidy Scheme*

The Home Nursing Subsidy Scheme, which began in 1957, was designed to assist in the extension of home nursing activities, either by the expansion of existing home nursing organisations or the formation of new ones. To be eligible for a subsidy, an organisation must provide a home nursing service, be non-profit making, employ registered nurses and receive assistance from a State Government or a local governing body established under a State Act.

Subsidy payments are based on the number of nurses employed over and above the number employed during September 1956, in the case of existing organisations, and on the total number of registered nurses employed by organisations formed after that date. The present subsidy



rate is \$2,200 per annum for each additional nurse employed in the first instance and \$1,100 for each nurse employed by organisations which commenced after September 1956. The rates, which have increased gradually from \$1,600 and \$800 in 1957, are reviewed periodically.

At 30 June 1967 there were sixty home nursing services employing approximately 600 trained nurses in receipt of the Commonwealth subsidy. Seventeen of those organisations were in existence when the scheme was introduced and at that time they employed about 200 trained nurses.

Details of the annual subsidies paid by the Commonwealth since the inception of the Home Nursing Subsidy Scheme are given in Tables 62 and 63 on page 115.

### *Free Milk for School Children*

The Commonwealth grant for free milk for school children in 1966-67 was \$9,020,990, which permitted the free distribution of one-third of a pint of milk on each school day to approximately 1,610,000 school children attending public and private primary schools, kindergartens, creches and Aboriginal missions throughout Australia.

In the States, the detailed administration of the scheme is carried out by the State Governments. Distribution to children in the Australian Capital Territory is made by the Department of Interior and to children in the Northern Territory by the Department of Territories under conditions similar to those operating in the States.

Expenditure by the Commonwealth on the Free Milk Scheme since its commencement is shown in Table 64 on page 115. However, these figures do not include amounts reimbursed to the States in respect of half of the cost of capital, administrative and incidental expenditure, which was \$27,755 for 1966-67.

### *Mental Health Institutions*

The administration and operation of mental health institutions is carried out by State Governments. However, over the years the Commonwealth Government has made substantial grants to assist the States in financing their responsibilities.

This Commonwealth assistance began with agreements entered into with the States, as authorised by the Mental Institution Benefits Act 1948, and provided for Commonwealth subsidy of day-to-day running costs of mental health institutions. In 1955, following a survey which disclosed severe deficiencies in institutional accommodation throughout Australia, the subsidy was replaced by the States Grants (Mental Institutions) Act, which provided for grants of capital assistance on the basis of \$1 contribution by the Commonwealth for each \$2 contributed by the States. This legislation, which limited the grants to a ceiling of \$20 million, to be divided between the States in accordance with their populations was later replaced by the States Grants (Mental Health Institutions) Act 1964, which removed the financial limit and substituted a time limit of three years.



The Commonwealth financial assistance provided under the 1955 and 1964 legislation has stimulated and encouraged the States to provide more accommodation of a considerably higher standard. In addition, it has, in more recent years, assisted the States in a building and conversion programme developed to provide institutions required for modern concepts of treatment of mental illnesses. Encouraged by the success of the grants made so far, the Government has announced its intention of extending the States Grants (Mental Health Institutions) Act 1964 for a further three years, concluding on 30 June 1970.

Details of the total expenditure each year since the inception of capital assistance in 1955, together with amounts contributed by the Commonwealth and the States, are shown in Table 66 on page 116.

### *Lady Gowrie Child Centres*

The Commonwealth has always had a very close interest in the Lady Gowrie Child Centres, having established in 1940 a Centre in each State capital and having provided since then a major part of the finance for their operation. The Centres were primarily created for the study of problems of physical growth, nutrition and development and to test and demonstrate methods for the care and instruction of the young child, but in more recent years the activities have included the mental development of children. The Centres are specialised demonstration and research centres which disseminate knowledge gained in this field.

For some years the Commonwealth has also subsidised the activities of the Australian Pre-School Association which, in administering the Centres, has been of considerable assistance in developing these activities on a national basis. The total grant for 1966-67 was \$134,800, comprising \$120,000 paid to the six Centres in equal proportions and \$14,800 to the Australian Pre-School Association.



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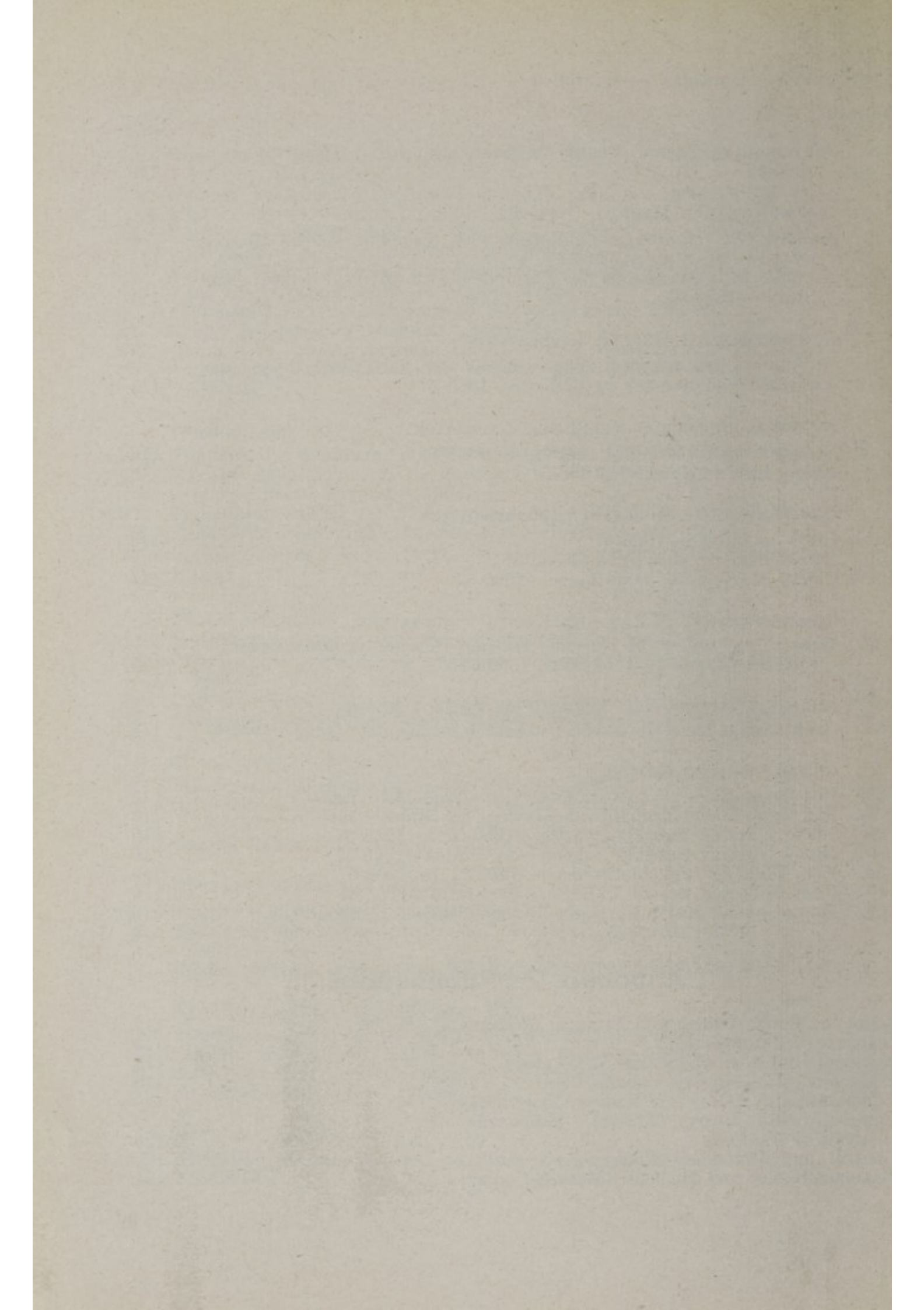
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# Appendix 1 STATISTICS

Table 1 Departmental Expenditure 1962-63 to 1966-67

Year ended 30 June	1963	1964	1965	1966	1967
	\$'000	\$'000	\$'000	\$'000	\$'000
<b>National Welfare Fund</b>					
Hospital Benefits .. .. .	47,326	56,216	58,791	60,743	67,398
Medical Benefits .. .. .	23,474	24,848	35,277	41,282	43,841
Pharmaceutical Benefits .. .. .	76,910	78,839	82,203	91,784	101,281
Pensioner Medical Service .. .. .	9,146	9,531	9,320	13,365	14,351
Free Milk for School Children .. .. .	7,454	7,775	8,059	8,493	9,021
Tuberculosis* .. .. .	9,748	10,473	10,146	13,379	10,983
Miscellaneous .. .. .	1,529	1,785	2,859	3,453	3,947
<b>Total National Welfare Fund ..</b>	<b>175,588</b>	<b>189,467</b>	<b>206,655</b>	<b>232,500</b>	<b>250,821</b>
<b>Consolidated Revenue Fund</b>					
Tuberculosis capital reimbursement ..	984	598	696	696	499
Administration .. .. .	1,596	1,762	2,087	8,836†	10,677†
Quarantine .. .. .	838	908	1,078		
Health Services .. .. .	4,843	4,943	4,817		
Subsidies and grants .. .. .	1,852	1,989	2,152	2,256	2,363
Northern Territory .. .. .	2,500	2,732	3,136	3,682‡	4,420‡
Australian Capital Territory .. .. .	1,350	1,451	1,916	2,388	3,291
Capital Works and Services .. .. .	1,248	242	869	1,105	1,096
<b>Total Consolidated Revenue Fund ..</b>	<b>15,211</b>	<b>14,625</b>	<b>16,751</b>	<b>18,962</b>	<b>22,346</b>
<b>Special Capital Grants to States for Mental Health Institutions .. ..</b>	<b>1,590</b>	<b>1,595</b>	<b>2,504</b>	<b>4,539</b>	<b>4,973</b>
<b>Total Expenditure .. .. .</b>	<b>192,389</b>	<b>205,687</b>	<b>225,909</b>	<b>256,001</b>	<b>278,141</b>

Apparent minor errors in totals are due to "rounding off".

\* In addition to the amounts shown, allowances are paid by the Department of Social Services—see Table 31, page 103.

† Under the new division of expenditure introduced by the Department of the Treasury, it is not now possible to derive separate figures for these three items.

‡ Certain expenditure previously included in Administration is now included in this item.

Table 2 Hospital Benefits  
Number of registered organisations, membership and coverage—1952-53 to 1966-67

As at 30 June	No. of registered organisations	Membership*	Estimated coverage	Percentage of population covered
		000's	000's	%
1953 .. .. .	139	1,500	3,413	39
1954 .. .. .	127	1,865	4,601	51
1955 .. .. .	128	2,111	5,121	56
1956 .. .. .	124	2,247	5,499	59
1957 .. .. .	122	2,373	5,878	61
1958 .. .. .	119	2,514	6,195	63
1959 .. .. .	116	2,749	6,774	68
1960 .. .. .	115	2,908	7,208	72
1961 .. .. .	115	3,044	7,500	72
1962 .. .. .	113	3,130	7,738	73
1963 .. .. .	110	3,176	7,895	73
1964 .. .. .	112	3,286	8,194	74
1965 .. .. .	111	3,407	8,732	77
1966 .. .. .	111	3,489	8,915	78
1967 .. .. .	109	3,657	9,342	80

\* As advised by the organisations.



Table 3 **Hospital Benefits**Number of registered organisations, membership and coverage—by States—  
30 June 1967

State	No. of registered organisations	Membership*	Estimated coverage	Percentage of population covered
		000's	000's	%
New South Wales .. ..	32	1,467	3,686	84
Victoria .. ..	43	1,063	2,890	89
Queensland .. ..	3	322	807	48
South Australia .. ..	13	403	971	85
Western Australia .. ..	9	288	703	83
Tasmania .. ..	9	114	285	76
Commonwealth .. ..	109	3,657	9,342	80

\* As advised by the organisations.

Table 4 **Hospital Benefits**

Benefits paid to contributors by registered organisations—1952-53 to 1966-67

Year ended 30 June	No. of days fund benefit paid	Average daily benefit	No. of claims per 100 members	Average stay in hospital per claim
	000's	\$		days
1953 .. ..	1,874	1.03	13.4	10.98
1954 .. ..	3,413	1.40	19.9	10.17
1955 .. ..	4,642	1.58	23.5	9.92
1956 .. ..	4,808	1.81	20.8	10.60
1957 .. ..	5,492	2.32	23.3	10.30
1958 .. ..	6,215	2.62	25.6	9.96
1959 .. ..	7,049	2.75	26.9	9.74
1960 .. ..	8,937	2.68	29.4	10.81
1961 .. ..	9,740	2.88	29.7	11.02
1962 .. ..	10,341	3.17	30.9	10.78
1963 .. ..	10,419	3.43	32.1	10.29
1964 .. ..	9,576	4.40	30.7	9.39
1965 .. ..	9,988	4.83	32.5	9.23
1966 .. ..	10,252	5.40	32.8	9.05
1967 .. ..	10,444	6.61	33.4	8.72

Table 5 **Hospital Benefits**

Benefits paid to contributors by registered organisations—by States—1966-67

State	No. of days fund benefit paid	Average daily benefit	No. of claims per 100 members	Average stay in hospital per claim
	000's	\$		days
New South Wales .. ..	4,466	6.92	35.1	8.92
Victoria .. ..	2,604	6.58	27.8	8.99
Queensland .. ..	1,092	4.02	38.7	8.92
South Australia .. ..	1,116	5.73	33.5	8.41
Western Australia .. ..	842	6.35	39.9	7.45
Tasmania .. ..	324	6.89	32.9	8.44
Commonwealth .. ..	10,444	6.61	33.4	8.72



Table 6 **Hospital Benefits**

Amount of Commonwealth and fund benefits paid—by States—1966-67

State	Commonwealth				Fund			Total
	Uninsured patients	Insured patients	Pensioner patients	Total	Excluding ancillary	Ancillary	Total	
	\$'000	*\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
New South Wales .. ..	753†	10,639	7,119†	18,512	30,885	915	31,799	50,311
Victoria .. ..	424	5,736	4,164	10,324	17,138	731	17,870	28,193
Queensland .. ..	894	2,348	3,506	6,748	4,388	191	4,579	11,327
South Australia .. ..	111	2,218	1,582	3,911	6,396	440	6,835	10,746
Western Australia .. ..	148	1,913	1,787	3,848	5,344	294	5,638	9,486
Tasmania .. ..	46	670	572	1,289	2,230	61	2,290	3,579
Commonwealth .. ..	2,376	23,524	18,731	44,631	66,379	2,632	69,011	113,642

Apparent minor errors in totals are due to "rounding off".

\* Includes payment of Special Account deficits of \$3,784,000.

† Includes A.C.T. and N.T.

Table 7 **Hospital Benefits**

Amount of Commonwealth nursing home benefit paid—by States—1966-67

State	State nursing homes			Private nursing homes	Total
	\$'000			\$'000	\$'000
New South Wales .. ..	..	..	..	1,698	7,833
Victoria .. ..	..	..	..	2,337	2,547
Queensland .. ..	..	..	..	1,700	1,848
South Australia .. ..	..	..	..	355	1,654
Western Australia .. ..	..	..	..	825	1,209
Tasmania .. ..	..	..	..	333	428
Commonwealth .. ..	..	..	..	7,249	15,518
					22,767

Apparent minor errors in totals are due to "rounding off".



Table 8

**Medical Benefits**

Number of registered organisations, membership and coverage—1953-54 to 1966-67

As at 30 June					No. of registered organisations	Membership*	Estimated coverage	Percentage of population covered
						000's	000's	%
1954	..	..	..	..	79	1,358	3,502	39
1955	..	..	..	..	80	1,666	4,154	45
1956	..	..	..	..	82	1,901	4,806	51
1957	..	..	..	..	81	2,229	5,715	60
1958	..	..	..	..	81	2,422	6,148	63
1959	..	..	..	..	82	2,667	6,713	67
1960	..	..	..	..	83	2,908	7,311	72
1961	..	..	..	..	83	2,850†	7,173†	68†
1962	..	..	..	..	82	2,846	7,275	68
1963	..	..	..	..	78	2,952	7,686	71
1964	..	..	..	..	81	3,095	8,058	73
1965	..	..	..	..	80	3,217	8,462	75
1966	..	..	..	..	80	3,313	8,679	76
1967	..	..	..	..	78	3,418	8,846	76

\* As advised by the organisations.

† Variation as compared with 30 June 1960 results from revision of membership figures in one of the major organisations.

Table 9

**Medical Benefits**Number of registered organisations, membership and coverage—by States—  
30 June 1967

State					No. of registered organisations	Membership*	Estimated coverage	Percentage of population covered
						000's	000's	%
New South Wales	..	..	..	..	28	1,363	3,498	80
Victoria	..	..	..	..	19	969	2,642	81
Queensland	..	..	..	..	6	324	823	49
South Australia	..	..	..	..	8	373	925	81
Western Australia	..	..	..	..	8	279	682	80
Tasmania	..	..	..	..	9	110	276	74
Commonwealth	..	..	..	..	78	3,418	8,846	76

\* As advised by the organisations.



Table 10 **Medical Benefits**

Medical services received by contributors to registered organisations—fee-for-service only—1953-54 to 1966-67

Year ended 30 June					No. of services received	Percentage of G.P. to Total	Average No. of services per contributor	Average cost per service
					000's	%		\$
1954	..	..	..	..	3,284	74	3.4	2.85
1955	..	..	..	..	9,453	70	6.2	2.91
1956	..	..	..	..	12,259	71	6.8	2.91
1957	..	..	..	..	13,668	75	6.6	3.10
1958	..	..	..	..	15,582	75	6.7	3.24
1959	..	..	..	..	16,819	75	6.5	3.28
1960	..	..	..	..	19,625	75	7.1	3.30
1961	..	..	..	..	20,123	73	7.3	3.56
1962	..	..	..	..	21,669	72	7.7	3.64
1963	..	..	..	..	23,431	72	8.0	3.69
1964	..	..	..	..	24,308	71	7.8	3.85
1965	..	..	..	..	25,847	70	8.3	4.02
1966	..	..	..	..	28,210	69	8.7	4.20
1967	..	..	..	..	29,269	68	8.7	4.48

Table 11 **Medical Benefits**

Medical services received by contributors to registered organisations—fee-for-service only—by States—1966-67

State					No. of services received	Percentage of G.P. to Total	Average No. of services per contributor	Average cost per service
					000's	%		\$
New South Wales	..	..	..	..	11,594	66	8.6	4.77
Victoria	..	..	..	..	8,086	69	8.6	4.48
Queensland	..	..	..	..	3,086	69	9.7	4.12
South Australia	..	..	..	..	3,281	70	9.0	4.10
Western Australia	..	..	..	..	2,404	64	9.1	4.07
Tasmania	..	..	..	..	818	64	7.6	4.35
Commonwealth	..	..	..	..	29,269	68	8.7	4.48



Table 12 Medical Benefits

Cost of medical services to contributors to registered organisations—1953-54 to 1966-67

Year ended 30 June					Total cost of services (fee-for-service and contract)	Percentage of total cost met by—(fee-for-service only)		
						Fund	Cwealth	Contributor
					\$'000	%	%	%
1954	..	..	..	..	9,112	31.7	31.4	36.9
1955	..	..	..	..	27,169	33.9	30.9	35.2
1956	..	..	..	..	35,276	35.0	30.6	34.4
1957	..	..	..	..	42,003	34.1	29.3	36.6
1958	..	..	..	..	49,625	33.9	28.3	37.8
1959	..	..	..	..	54,619	34.4	28.5	37.1
1960	..	..	..	..	64,203	35.4	28.2	36.4
1961	..	..	..	..	71,242	36.0	27.4	36.6
1962	..	..	..	..	78,499	36.9	27.0	36.1
1963	..	..	..	..	86,213	37.1	26.6	36.3
1964	..	..	..	..	93,313	36.8	25.9	37.3
1965	..	..	..	..	104,624	35.2	32.9	31.9
1966	..	..	..	..	119,021	35.7	33.9	30.4
1967	..	..	..	..	131,770	35.5	32.2	32.3

Table 13 Medical Benefits

Cost of medical services to contributors to registered organisations—by States—  
1966-67

State		Total cost of services (fee-for-service and contract)	Percentage of total cost met by— (fee-for-service only)			Fund benefits paid	
			Fund	Cwealth	Contributor	Excluding ancillary	Ancillary
		\$'000	%	%	%	\$'000	\$'000
New South Wales	..	55,500	36.2	30.3	33.5	20,104	1,104
Victoria	.. ..	36,372	32.3	31.9	35.8	11,788	328
Queensland	.. ..	12,727	36.8	33.8	29.4	4,679	192
South Australia	.. ..	13,441	38.2	35.3	26.5	5,128	236
Western Australia	.. ..	10,100	37.8	37.8	24.4	3,850	106
Tasmania	.. ..	3,631	36.8	32.9	30.3	1,350	76
Commonwealth	..	131,770	35.5	32.2	32.3	46,899	2,042

Apparent minor errors in totals are due to "rounding off"



**Table 14 Pensioner Medical Service**

Number enrolled, number of services received and average attendances per enrolled person per annum—1951–52 to 1966–67

Year ended 30 June					No. of pensioners and dependants enrolled at 30 June	No. of services received			Average No. of services per enrolled person
						Surgery	Domiciliary	Total	
					000's	000's	000's	000's	
1952	..	..	..	..	501	1,228	1,105	2,334	5.0
1953	..	..	..	..	558	1,671	1,651	3,322	6.2
1954	..	..	..	..	597	2,076	2,092	4,168	7.2
1955	..	..	..	..	640	2,375	2,346	4,721	7.6
1956	..	..	..	..	668	2,669	2,514	5,183	7.9
1957	..	..	..	..	684	2,778	2,603	5,381	8.0
1958	..	..	..	..	697	2,992	2,774	5,766	8.3
1959	..	..	..	..	720	3,462	2,980	6,441	9.0
1960	..	..	..	..	740	3,763	3,076	6,839	9.4
1961	..	..	..	..	766	3,866	3,131	6,996	9.4
1962	..	..	..	..	810	4,139	3,223	7,363	9.3
1963	..	..	..	..	831	4,278	3,111	7,389	9.0
1964	..	..	..	..	844	4,406	3,020	7,426	8.9
1965	..	..	..	..	849	4,389	2,859	7,248	8.6
1966	..	..	..	..	1,006	4,670	2,824	7,494	8.4
1967	..	..	..	..	1,043	5,215	2,972	8,187	8.0

**Table 15 Pensioner Medical Service**

Number enrolled, number of services received and average attendances per enrolled person per annum—by States—1966–67

State				No. of pensioners and dependants enrolled at 30 June 1967	No. of services received			Average No. of services per enrolled person
					Surgery	Domiciliary	Total	
				000's	000's	000's	000's	
New South Wales	..	..	..	404	2,113	1,154	3,267	8.3
Victoria	..	..	..	260	1,232	877	2,109	8.3
Queensland	..	..	..	168	849	348	1,197	7.2
South Australia	..	..	..	100	450	339	789	8.2
Western Australia	..	..	..	77	416	181	597	7.9
Tasmania	..	..	..	34	155	73	228	6.9
Commonwealth	..	..	..	1,043	5,215	2,972	8,187	8.0

Apparent minor errors in totals are due to "rounding off".



Table 16

**Pensioner Medical Service**

Number of participating doctors, payments received and average annual payment per doctor—1951-52 to 1966-67

Year ended 30 June								No. of participating doctors at 30 June	Payments to doctors	Average receipts per annum
									\$'000	\$
1952..	..	..	..	..	..	..	..	3,502	2,070	620
1953..	..	..	..	..	..	..	..	3,898	3,480	928
1954..	..	..	..	..	..	..	..	4,239	4,231	1,024
1955..	..	..	..	..	..	..	..	4,567	5,032	1,132
1956..	..	..	..	..	..	..	..	4,730	5,749	1,236
1957..	..	..	..	..	..	..	..	4,990	5,998	1,234
1958..	..	..	..	..	..	..	..	5,243	6,398	1,250
1959..	..	..	..	..	..	..	..	5,531	7,613	1,376
1960..	..	..	..	..	..	..	..	5,685	8,225	1,466
1961..	..	..	..	..	..	..	..	5,861	8,401	1,456
1962..	..	..	..	..	..	..	..	6,012	8,796	1,476
1963..	..	..	..	..	..	..	..	6,025	9,146	1,520
1964..	..	..	..	..	..	..	..	5,899	9,531	1,598
1965..	..	..	..	..	..	..	..	5,896	9,320	1,578
1966..	..	..	..	..	..	..	..	6,034	13,365	2,246
1967..	..	..	..	..	..	..	..	6,175	14,351	2,360

Table 17

**Pensioner Medical Service**

Number of participating doctors, payments received and average annual payment per doctor—by States—1966-67

State								No. of participating doctors at 30 June 1967	Payments to doctors	Average receipts per annum
									\$'000	\$
New South Wales	..	..	..	..	..	..	..	2,384	5,708	2,404
Victoria	..	..	..	..	..	..	..	1,733	3,746	2,211
Queensland	..	..	..	..	..	..	..	819	2,064	2,577
South Australia	..	..	..	..	..	..	..	590	1,407	2,439
Western Australia	..	..	..	..	..	..	..	461	1,020	2,261
Tasmania	..	..	..	..	..	..	..	188	406	2,197
Commonwealth..	..	..	..	..	..	..	..	6,175	14,351	2,360

Apparent minor errors in totals are due to "rounding off".

Table 18

**Pharmaceutical Benefits**

Cost of prescriptions—1960-61 to 1966-67

Year ended 30 June					Payments by Commonwealth			Patient contribution	Total cost
					Excluding pensioners	Pensioners	Total		
					\$'000	\$'000	\$'000	\$'000	\$'000
1961	..	..	..	..	34,282	14,677	48,959	10,325	59,284
1962	..	..	..	..	44,632	18,195	62,827	13,008	75,835
1963	..	..	..	..	47,093	19,831	66,924	14,742	81,666
1964	..	..	..	..	46,461	20,602	67,063	15,574	82,637
1965	..	..	..	..	48,930	21,564	70,494	16,841	87,336
1966	..	..	..	..	53,078	24,071	77,149	17,481	94,630
1967	..	..	..	..	56,656	29,280	85,936	18,347	104,283

Apparent minor errors in totals are due to "rounding off".



Table 19

**Pharmaceutical Benefits**

Cost of prescriptions—by States—1966-67

State	Payments by Commonwealth			Patient contribution	Total cost
	Excluding pensioners	Pensioners	Total		
	\$'000	\$'000	\$'000	\$'000	\$'000
New South Wales .. ..	22,580	12,305	34,885	7,341	42,226
Victoria .. ..	16,040	6,933	22,973	5,087	28,060
Queensland .. ..	7,765	4,546	12,311	2,634	14,945
South Australia .. ..	5,135	2,705	7,840	1,659	9,499
Western Australia .. ..	3,610	1,989	5,599	1,137	6,736
Tasmania .. ..	1,526	802	2,328	489	2,817
Commonwealth .. ..	56,656	29,280	85,936	18,347	104,283

Table 20

**Pharmaceutical Benefits**

Dissection of benefit prescription costs into ingredient cost and chemists' remuneration—1960-61 to 1966-67

Year ended 30 June								Cost of ingredients and containers	Chemists' remuneration	Total cost
								\$'000	\$'000	\$'000
1961.. ..								35,629	23,655	59,284
1962.. ..								46,714	29,121	75,835
1963.. ..								49,113	32,553	81,666
1964.. ..								49,398	33,239	82,637
1965.. ..								52,139	35,197	87,336
1966.. ..								57,293	37,337	94,630
1967.. ..								63,676	40,608	104,284

Table 21

**Pharmaceutical Benefits**

Dissection of benefit prescription costs into ingredient cost and chemists' remuneration—by States—1966-67

State								Cost of ingredients and containers	Chemists' remuneration	Total cost
								\$'000	\$'000	\$'000
New South Wales .. ..								25,776	16,451	42,227
Victoria .. ..								17,243	10,817	28,060
Queensland .. ..								9,000	5,945	14,945
South Australia .. ..								5,803	3,696	9,499
Western Australia .. ..								4,124	2,612	6,736
Tasmania .. ..								1,730	1,087	2,817
Commonwealth.. ..								63,676	40,608	104,284

Cost of ingredients and containers includes payments to chemists for wastages on broken quantities of ready-prepared items.

Chemists' remuneration includes mark up on wholesale price and professional fees, but does not include discount allowed to chemists by wholesalers and manufacturers.



Table 22

**Pharmaceutical Benefits**

Number of prescriptions and average cost per prescription—1960-61 to 1966-67

Year ended 30 June	No. of benefit prescriptions			Average cost per benefit prescription*		
	Total population	Population excluding pensioners	Pensioner population	Total population	Population excluding pensioners	Pensioner population
	000's	000's	000's	\$	\$	\$
1961.. ..	31,217	20,489	10,728	1.90	2.18	1.37
1962.. ..	37,714	26,050	11,664	2.01	2.22	1.56
1963.. ..	42,192	29,518	12,674	1.93	2.09	1.57
1964.. ..	44,357	31,040	13,317	1.86	2.00	1.55
1965.. ..	47,556	33,715	13,841	1.83	1.95	1.56
1966.. ..	49,993	35,085	14,908	1.89	2.01	1.61
1967.. ..	53,687	36,751	16,936	1.94	2.04	1.73

\* Includes patient contribution where applicable.

Table 23

**Pharmaceutical Benefits**

Number of prescriptions and average cost per prescription—by States—1966-67

State	No. of benefit prescriptions			Average cost per benefit prescription*		
	Total population	Population excluding pensioners	Pensioner population	Total population	Population excluding pensioners	Pensioner population
	000's	000's	000's	\$	\$	\$
New South Wales ..	21,773	14,657	7,116	1.94	2.04	1.73
Victoria .. ..	14,136	10,202	3,934	1.99	2.07	1.76
Queensland .. ..	8,070	5,291	2,779	1.85	1.97	1.64
South Australia ..	4,850	3,322	1,528	1.96	2.05	1.77
Western Australia ..	3,438	2,301	1,137	1.96	2.06	1.75
Tasmania .. ..	1,420	978	442	1.98	2.06	1.81
Commonwealth.. ..	53,687	36,751	16,936	1.94	2.04	1.73

\* Includes patient contribution where applicable.

Table 24

**Pharmaceutical Benefits**

Number of prescriptions per head of population and average cost per head of population—1960-61 to 1966-67

Year ended 30 June	Number of prescriptions per head of population			Average cost per head of population*		
	Total Population	Population excluding pensioners	Pensioner population	Total population	Population excluding pensioners	Pensioner population
				\$	\$	\$
1961.. ..	3.00	2.13	14.25	5.70	4.62	19.86
1962.. ..	3.56	2.65	14.80	7.20	5.92	23.08
1963.. ..	3.90	2.95	15.45	7.48	6.12	23.95
1964.. ..	4.02	3.05	15.91	7.51	6.10	24.38
1965.. ..	4.23	3.24	16.35	7.93	6.47	25.88
1966.. ..	4.36	3.32	16.38	8.25	6.68	26.45
1967.. ..	4.61	3.46	16.59	8.95	7.06	28.68

\* Includes patient contribution where applicable.



Table 25

**Pharmaceutical Benefits**

Number of prescriptions per head of population and average cost per head of population—by States—1966-67

State	Number of prescriptions per head of population			Average cost per head of population*		
	Total Population	Population excluding Pensioners	Pensioner Population	Total population	Population excluding pensioners	Pensioner population
				\$	\$	\$
New South Wales ..	4.99	3.69	18.02	9.67	7.53	31.17
Victoria .. ..	4.35	3.41	15.43	8.64	7.06	27.19
Queensland .. ..	4.82	3.51	16.72	8.92	6.89	27.34
South Australia ..	4.26	3.19	15.81	8.34	6.52	27.98
Western Australia ..	4.04	2.97	15.04	7.92	6.13	26.31
Tasmania .. ..	3.80	2.87	13.49	7.54	5.91	24.49
Commonwealth ..	4.61	3.46	16.59	8.95	7.06	28.68

\* Includes patient contribution where applicable.

Table 26

**Pharmaceutical Benefits**

Payments to hospitals and miscellaneous services—1966-67

Hospitals						Miscellaneous services*	Commonwealth
N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.		
\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
5,233	5,000	2,041	1,110	1,100	538	322	15,344

\* Miscellaneous services expenditure consisted of—

Biological products and prophylactic materials .. ..	\$'000
Commonwealth Medical Officers and Immigration Medical Service .. ..	187
Miscellaneous (including bush nursing and testing expenses) .. ..	18
	117
	322

Table 27

**Pharmaceutical Benefits**

Drugs dispensed by chemists—1966-67  
(Benefits dispensed in hospitals are excluded)

Therapeutic category	Percentage of total expenditure	Percentage of total prescriptions	Therapeutic category	Percentage of total expenditure	Percentage of total prescriptions
	%	%		%	%
Broad Spectrum Antibiotics ..	13.3	8.5	Anti-Histamines .. ..	5.0	5.5
Penicillins .. ..	9.1	7.9	Tranquillisers .. ..	2.2	1.5
Blood Vessels—drugs acting on ..	8.9	5.3	Antacids .. ..	1.8	2.9
Hypnotics .. ..	6.6	12.7	Sulphonamides .. ..	1.3	1.8
Diuretics—non-mercurial ..	7.1	4.1	Expectorants and cough sup- pressants .. ..	0.9	2.2
Analgesics .. ..	8.4	8.0	Other drugs .. ..	35.4	39.6



Table 28

**Pharmaceutical Benefits**

Number of Pharmaceutical Chemists and Medical Practitioners dispensing pharmaceutical benefits prescriptions—1949–50 to 1966–67

- A. *Pharmaceutical Chemists* approved under Section 90 of the *National Health Act 1953–1967* for the purpose of supplying pharmaceutical benefits.  
 B. *Medical Practitioners* approved under Section 92 of the *National Health Act 1953–1967* for the purpose of supplying pharmaceutical benefits in areas in which there are no other pharmaceutical services available.

As at 30 June	New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania		Common- wealth	
	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
1963 ..	2,008	32	1,445	6	721	7	470	14	325	7	131	10	5,100	76
1964 ..	2,065	31	1,482	7	750	6	474	12	338	8	134	12	5,243	76
1965 ..	2,101	32	1,520	7	775	5	487	10	354	8	138	12	5,375	74
1966 ..	2,140	33	1,545	6	805	6	507	9	363	5	141	12	5,501	71
1967 ..	2,204	34	1,583	5	818	4	520	9	370	5	143	13	5,638	70

Table 29

**Tuberculosis**

Number of allowances, notifications and mortality—1952 to 1966

Year ended 31 December	No. of Allowances Current	Notifications			Deaths					
		No. pulmonary	No. all forms	Incidence per 100,000 all forms	No. pulmonary	No. all forms	Per 100,000 all forms			
1952..	..	..	..	6,127	4,761	4,786	54.8	1,165	1,290	14.8
1953..	..	..	..	5,696	4,787	4,979	55.9	879	974	10.9
1954..	..	..	..	5,742	4,650	4,952	54.5	823	897	9.9
1955..	..	..	..	5,029	4,360	4,602	49.4	672	729	7.8
1956..	..	..	..	4,182	4,169	4,419	46.4	663	724	7.6
1957..	..	..	..	3,326	3,762	4,035	41.4	543	585	6.0
1958..	..	..	..	2,750	3,632	3,708	37.2	501	538	5.4
1959..	..	..	..	2,503	3,160	3,582	35.2	509	549	5.4
1960..	..	..	..	2,235	3,556	4,084	39.2	447	489	4.7
1961..	..	..	..	2,017	3,239	3,570	34.0	412	447	4.3
1962..	..	..	..	1,845	3,503	3,825	35.3	448	475	4.4
1963..	..	..	..	1,796	3,574	3,883	35.2	410	440	4.0
1964..	..	..	..	1,573	3,113	3,446	30.6	388	413	3.7
1965..	..	..	..	1,378	2,624	2,903	25.3	259	294	2.6
1966..	..	..	..	1,177	2,276	2,549	21.8	303	321	2.8



Table 30

**Tuberculosis**

Number of allowances, notifications and mortality—by States—year ended  
31 December 1966

State	No. of Allowances current	Notifications			Deaths		
		No. pulmonary	No. all forms	Incidence per 100,000 all forms	No. pulmonary	No. all forms	Per 100,000 all forms
New South Wales .. ..	381	830	915	21.4	92	94	2.2
Victoria .. ..	217	571	649	19.9	119	127	3.9
Queensland .. ..	352	552	581	34.7	39	43	2.6
South Australia .. ..	123	106	131	11.9	23	25	2.3
Western Australia .. ..	51	102	134	15.8	19	19	2.2
Tasmania .. ..	53	50	63	16.8	9	11	2.9
Aust. Capital Territory ..	*	6	6	6.0	2	2	2.0
Northern Territory ..	†	59	70	122.4	..	..	..
Commonwealth .. ..	1,177	2,276	2,549	21.8	303	321	2.8

\* Included in New South Wales figure.

† Included in South Australian figure.

Table 31

**Tuberculosis**

Expenditure under the Tuberculosis Act—1949–50 to 1966–67

Year ended 30 June					Capital reimbursements to States	Maintenance reimbursements to States	Allowances paid to sufferers	Total
					\$'000	\$'000	\$'000	\$'000
1950 .. ..	..	..	..	..	472	692	..	1,165
1951 .. ..	..	..	..	..	809	1,887	2,690	5,386
1952 .. ..	..	..	..	..	1,290	4,229	3,555	9,074
1953 .. ..	..	..	..	..	2,327	5,965	3,816	12,107
1954 .. ..	..	..	..	..	2,591	7,478	3,753	13,822
1955 .. ..	..	..	..	..	3,422	7,601	3,809	14,832
1956 .. ..	..	..	..	..	3,495	8,101	3,380	14,976
1957 .. ..	..	..	..	..	4,757	9,610	2,921	17,289
1958 .. ..	..	..	..	..	4,257	9,138	2,509	15,905
1959 .. ..	..	..	..	..	2,822	9,688	2,125	14,636
1960 .. ..	..	..	..	..	1,458	8,753	2,051	12,262
1961 .. ..	..	..	..	..	776	8,473	1,893	11,142
1962 .. ..	..	..	..	..	756	8,800	1,746	11,302
1963 .. ..	..	..	..	..	984	9,932	1,607	12,523
1964 .. ..	..	..	..	..	598	10,669	1,593	12,861
1965 .. ..	..	..	..	..	703	10,337	1,458	12,497
1966 .. ..	..	..	..	..	689	13,577	1,286	15,552
1967 .. ..	..	..	..	..	499	11,238	1,193	12,930
Total .. ..	..	..	..	..	32,707	146,168	41,385	220,260

Apparent minor errors in totals are due to "rounding off".



Table 32      **Tuberculosis**

## Expenditure under the Tuberculosis Act—by States—1966-67

State	Capital	Maintenance	Allowances	Total
	\$'000	\$'000	\$'000	\$'000
New South Wales .. ..	356	4,012	374*	4,742
Victoria .. ..	110	3,374	263	3,747
Queensland .. ..	28	2,196	340	2,564
South Australia .. ..	5	708	119†	831
Western Australia .. ..	..	589	53	641
Tasmania .. ..	..	360	44	404
Commonwealth .. ..	499	11,238	1,193	12,930

Apparent minor errors in totals are due to "rounding off".

\* Includes the Australian Capital Territory.

† Includes the Northern Territory.

Table 33      **Tuberculosis**

## Results of mass X-ray surveys—by States—year ended 31 December 1966

State	No. examined	No. active T.B.	Rate per 1,000	No. inactive T.B.	Rate per 1,000	Suspect active T.B. at 31.12.66	Rate per 1,000
New South Wales .. ..	742,104	164	0.22	4,203	5.66	54	0.07
Victoria .. ..	662,576	204	0.31	2,363	3.57	336	0.51
Queensland .. ..	304,128	96	0.31	1,298	4.27	n.a.	n.a.
South Australia .. ..	82,345	10	0.12	851	10.33	26	0.32
Western Australia .. ..	57,291	13	0.23	41	0.72	2	0.03
Tasmania .. ..	95,580	20	0.21	30	0.31	27	0.28
Australian Capital Territory .. ..	..	..	..	..	..	..	..
Northern Territory .. ..	3,528	27	7.65	191	54.14	9	2.55
Commonwealth .. ..	1,947,552	534	0.27	8,977	4.61	454*	0.23*

n.a.—Not available.

\* Excludes Queensland.



Table 34 **Public Health**

## Notifiable diseases in the States of Australia—1966-67†

Disease	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	A.C.T.	N.T.	Aust.
Acute Encephalitis .. .. .	..	..	..	..	..	..	..	..	..
Acute Rheumatism .. .. .	..	..	..	..	..	..	..	..	..
Amoebiasis .. .. .	..	..	..	..	..	..	..	..	..
Ancylostomiasis .. .. .	..	..	..	..	..	..	..	..	..
Anthrax .. .. .	..	..	..	..	..	..	..	..	..
Bilharziasis .. .. .	..	..	..	..	..	..	..	..	..
Breast Abscess .. .. .	..	..	..	..	..	..	..	..	..
Brucellosis .. .. .	..	..	..	..	..	..	..	..	..
Chorea (St Vitus Dance) .. .. .	..	..	..	..	..	..	..	..	..
Dengue .. .. .	..	..	..	..	..	..	..	..	..
Diarrhoea, Infantile .. .. .	..	..	..	..	..	..	..	..	..
Diphtheria .. .. .	..	..	..	..	..	..	..	..	..
Dysentery, Bacillary .. .. .	..	..	..	..	..	..	..	..	..
Erythema Nodosum .. .. .	..	..	..	..	..	..	..	..	..
Encephalitis .. .. .	..	..	..	..	..	..	..	..	..
Filariasis .. .. .	..	..	..	..	..	..	..	..	..
Homologous S. Jaundice .. .. .	..	..	..	..	..	..	..	..	..
Hydatid .. .. .	..	..	..	..	..	..	..	..	..
Infective Hepatitis .. .. .	..	..	..	..	..	..	..	..	..
Lead Poisoning .. .. .	..	..	..	..	..	..	..	..	..
Leprosy .. .. .	..	..	..	..	..	..	..	..	..
Leptospirosis .. .. .	..	..	..	..	..	..	..	..	..
Leukaemia .. .. .	..	..	..	..	..	..	..	..	..
Malaria .. .. .	..	..	..	..	..	..	..	..	..
Meningococcal Infection .. .. .	..	..	..	..	..	..	..	..	..
Neonatal Infection‡ .. .. .	..	..	..	..	..	..	..	..	..
Ophthalmia .. .. .	..	..	..	..	..	..	..	..	..
Ornithosis .. .. .	..	..	..	..	..	..	..	..	..
Paratyphoid .. .. .	..	..	..	..	..	..	..	..	..
Puerperal Fever .. .. .	..	..	..	..	..	..	..	..	..
Q. Fever .. .. .	..	..	..	..	..	..	..	..	..
Rubella .. .. .	..	..	..	..	..	..	..	..	..
Salmonella Infection .. .. .	..	..	..	..	..	..	..	..	..
Scarlet Fever .. .. .	..	..	..	..	..	..	..	..	..
Tetanus .. .. .	..	..	..	..	..	..	..	..	..
Trachoma .. .. .	..	..	..	..	..	..	..	..	..
Trichinosis .. .. .	..	..	..	..	..	..	..	..	..
Tuberculosis .. .. .	..	..	..	..	..	..	..	..	..
Typhoid Fever .. .. .	..	..	..	..	..	..	..	..	..
Typhus (flea, mite or tick borne) .. .. .	..	..	..	..	..	..	..	..	..

\* Not notifiable. .. No cases.

† The figures shown in this table are the number of cases notified by individual medical practitioners to State Health Departments.

‡ In Victoria notified as acute infection in the newborn, and in Queensland as Neonatal Infections.

Details of the one case of poliomyelitis confirmed are given on page 105.

No case of cholera, plague, smallpox, epidemic typhus or yellow fever.

Table 35 **Public Health**

## Poliomyelitis—number of confirmed cases—by States—1957-58 to 1966-67

Year ended 30 June	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	A.C.T.	N.T.	Cwlth
1958.. .. .	21	3	3	5	2	3	..	..	37
1959.. .. .	18	78	3	1	1	1	..	..	102
1960.. .. .	17	10	4	7	6	2	..	14	60
1961.. .. .	8	80	19	22	..	46	..	3	178
1962.. .. .	367	21	157	19	6	..	..	2	572
1963.. .. .	5	11	..	17	2	..	..	..	35
1964.. .. .	2	19	..	2	2	..	..	..	25
1965.. .. .	4	..	..	..	..	..	..	..	4
1966.. .. .	..	..	1	..	..	1	..	..	2
1967.. .. .	..	1	..	..	..	..	..	..	1



Table 36 **Public Health**

## Infectious Hepatitis—cases notified—by States—1961 to 1966

State	1961	1962	1963	1964	1965	1966*
New South Wales	6,025	3,358	2,822	2,667	3,299	4,417
Victoria	3,515	3,533	3,840	2,705	1,988	2,638
Queensland	1,022	885	1,433	1,148	511	1,234
South Australia	1,406	504	293	277	413	1,232
Western Australia	262	117	145	101	86	92
Tasmania	304	630	856	638	199	275
Australian Capital Territory	281	88	20	12	51	141
Northern Territory	61	100	104	57	128	110
Commonwealth	12,876	9,215	9,513	7,605	6,675	10,139

\* Figures in this column are subject to confirmation.

Table 37 **Public Health**

## Radio and television scripts on medical matters examined—1966-67

Type of script	Number examined	Approved		Approved as amended		Rejected	
		Number	Per cent	Number	Per cent	Number	Per cent
Radio	1,448	940	65.0	461	31.8	47	3.2
Television	308	173	56.2	118	38.3	17	5.5
Total	1,756	1,113	63.4	579	33.0	64	3.6

Table 38 **Quarantine**

## Vessels boarded and cleared—by States—1966-67

State	Surface			Air		
	Vessels	Crew	Passengers	Vessels	Crew	Passengers
New South Wales	1,136	64,048	44,579	2,031	22,164	145,076
Victoria	411	29,887	42,352	20	145	168
Queensland	923	46,912	14,256	372	3,596	15,653
South Australia	338	17,123	4,895	3	31	189
Western Australia	1,014	74,160	130,636	613	6,242	42,322
Tasmania	121	5,437	1,818	..	..	..
Northern Territory	97	3,266	110	879	7,138	59,553
Commonwealth	4,040	240,833	238,646	3,918	39,316	262,961



Table 39 **Quarantine**

Infectious diseases on overseas vessels arriving in Australia—1966-67

Disease					No. of cases	Disease					No. of cases
Chickenpox	..	..	..	..	174	Scarlet Fever	..	..	..	..	2
Dysentery	..	..	..	..	1	Tuberculosis	..	..	..	..	1
Infectious Hepatitis	..	..	..	..	5	Venereal Disease	..	..	..	..	158
Measles	..	..	..	..	320						
Mumps	..	..	..	..	32	Total	..	..	..	..	695
Rubella	..	..	..	..	2						

Table 40 **Quarantine**

Animal importations subject to quarantine—1966 to 1967

Type										Number
Horses—from United Kingdom	..	..	..	..	..	..	..	..	..	141
from New Zealand	..	..	..	..	..	..	..	..	..	631
Dogs and cats—from United Kingdom	..	..	..	..	..	..	..	..	..	738
from New Zealand	..	..	..	..	..	..	..	..	..	460
Small laboratory animals for scientific institutions	..	..	..	..	..	..	..	..	..	680
Monkeys from Malaysia and U.S.A. for Commonwealth Serum Laboratories	..	..	..	..	..	..	..	..	..	30
Animals for permanent quarantine in registered zoological gardens and circuses.	..	..	..	..	..	..	..	..	..	117
Total	..	..	..	..	..	..	..	..	..	2,797

Table 41 **Northern Territory Health**

Aerial Medical Service—1966-67

										Darwin	Alice Springs
Emergency flights	..	..	..	..	..	..	..	..	..	191	..
Routine flights	..	..	..	..	..	..	..	..	..	222	176
Hours flown	..	..	..	..	..	..	..	..	..	1,509	614
Miles flown	..	..	..	..	..	..	..	..	..	208,600	85,730
Patients carried	..	..	..	..	..	..	..	..	..	788	280
Patients carried by charter and commercial services	..	..	..	..	..	..	..	..	..	1,699	276
Radio medical consultations	..	..	..	..	..	..	..	..	..	1,740	2,821



Table 42

## Northern Territory Health

Health services provided at main Northern Territory hospitals—1966-67

	Darwin	Alice Springs	Tennant Creek	Katherine	Batchelor
Total No. of daily occupied beds .. ..	88,421	34,959	5,093	13,151	..
Total No. of admissions .. .. .	7,161	2,815	881	1,238	..
Average daily No. of patients .. ..	242.3	95.7	14.0	36.0	..
Total No. of births .. .. .	851	261	53	126	..
Total No. of deaths in hospital .. ..	106	81	19	27	..
Total No. of post mortem examinations ..	84	68	26	31	..
Total No. of major operations .. ..	645	210	..	32	..
Total No. of minor operations .. ..	2,168	770	283	250	..
Total No. of outpatients treated .. ..	70,681	28,620	12,412	10,431	{ 1,508* 4,732†
Dispensaries—					
Prescriptions dispensed .. .. .	78,691	36,845	3,780	6,510	..
Average No. of prescriptions dispensed per working day .. .. .	261.4	148.0	15.1	26.1	..
X-ray Department—‡					
No. of exposures .. .. .	38,939	7,955	1,301	2,261	..
Ambulance Services—					
No. of trips .. .. .	3,447	440	102	203	..
No. of patients carried .. .. .	4,641	573	131	234	..
No. of miles travelled .. .. .	38,964	22,099	14,818	13,132	..
Physiotherapy Department—‡					
No. of patients .. .. .	1,322	634	..	..	..
No. of treatments .. .. .	6,314	3,874	..	..	..

\* Doctor's clinic.

† Daily clinic.

‡ Inpatients and outpatients.

Table 43

## Northern Territory Health

Dental services provided in the Northern Territory—1966-67

	Darwin Dental Clinic	Aerial Mobile (operating from Darwin)	Overland Mobile (operating from Darwin)	Darwin Schools	Alice Springs (including Mobiles and Schools)	Nightcliff Clinic
Examinations .. .. .	5,350	821	1,996	618	1,864	790
Extractions .. .. .	3,196	454	515	75	1,946	1,167
Porcelain restoration .. .. .	398	227	175	144	280	326
Amalgam restoration .. .. .	2,349	..	1,241	712	3,006	1,897
Inlays .. .. .	105	..	22	..	64	21
Crowns .. .. .	50	..	7	..	28	6
Bridges .. .. .	9	..	4	..	4	5
Dressings .. .. .	1,393	2	27	21	282	357
X-rays .. .. .	589	..	90	85	767	153
G.A.'s hospital .. .. .	59	..	1	..	31	1
Root treatment .. .. .	23	..	12	..	18	21
Scale and clean .. .. .	44	..	36	..	103	45
Infective Gingivitis .. .. .	10	..	..	..	..	..
Orthodontist .. .. .	848	..	2	..	119	6
Oral surgery .. .. .	64	..	17	..	34	14
Jaw fracture .. .. .	17	..	2	..	8	1
Other treatment .. .. .	2,262	15	595	80	1,583	1,007
Dentures—Full .. .. .	276	..	48	..	97	61
Partial .. .. .	104	..	28	..	79	58
Repair .. .. .	562	..	41	..	331	81
Remodel .. .. .	55	..	8	..	91	22



Table 44 **Australian Capital Territory Health**

Licences issued under the Public Health Ordinance—1966

Barber shops .. .. .	61	Meat vendors .. .. .	54
Eating houses .. .. .	73	Milk distributors .. .. .	71
Boarding houses .. .. .	63	Milk vendors .. .. .	169
Ice cream vendors .. .. .	13	Prepared meat vendors .. .. .	212

Table 45 **Australian Capital Territory Health**

Samples collected by Health Inspection Section—1966-67

	For bacteriological examination	For chemical examination
Milk .. .. .	1,266	471
Cream .. .. .	89	97
Ice cream .. .. .	2	5
Meat .. .. .	9	12
Other foods .. .. .	30	2
Water—City supply .. .. .	795	1,397
Swimming pools .. .. .	135	5
Picnic resorts and other supplies .. .. .	175	38
Sewerage .. .. .	18	88
Lake Burley Griffin and Molongo River .. .. .	632	199

Table 46 **Australian Capital Territory Health**

School medical service examinations—1966-67

	School	Pre-School
No. of children examined .. .. .	6,832	183
Defects notified—		
Eye .. .. .	326	5
Ear, nose and throat .. .. .	71	1
Hearing loss .. .. .	210	5
Speech .. .. .	107	5
Cardiac abnormality .. .. .	26	..
Hernia .. .. .	8	..
Orthopaedic .. .. .	54	3
Miscellaneous .. .. .	180	2

Table 47 **Australian Capital Territory Health**

Registrations granted—1966-67

Type	Number	Type	Number
Medical Practitioners .. .. .	41	Pharmacists .. .. .	15
Dental Practitioners .. .. .	5	Optometrists .. .. .	..
Nurses .. .. .	192	Veterinary Surgeons .. .. .	3
Nursing Aides .. .. .	43		



Table 48

**National Fitness**

## Allocation of annual grant to State National Fitness Councils—1966-67

Item	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Cwlth
	\$	\$	\$	\$	\$	\$	\$
Wages, salaries, allowances, overtime and services not otherwise provided for ..	10,646	10,646	9,124	9,124	9,124	9,124	57,788
Services to associated groups, including leader training .. .. .	12,178	12,178	9,124	9,124	9,124	9,124	60,852
Grants to voluntary youth organisations ..	3,034	3,034	2,680	2,680	2,680	1,564	15,672
Subsidies to local national fitness committees .. .. .	4,572	4,572	3,986	3,986	3,986	2,356	23,458
Services to sports organisations .. ..	1,476	1,476	908	908	908	610	6,286
Development of camps and hostels ..	12,178	12,178	9,124	9,124	9,124	9,124	60,852
Total .. .. .	44,084	44,084	34,946	34,946	34,946	31,902	224,908

Table 49

**National Fitness**

## Allocation of annual grants to State Education Departments—1966-67

Item	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Cwlth
	\$	\$	\$	\$	\$	\$	\$
Training of general teachers in physical education—							
(a) Short courses .. .. .	1,000	1,000	1,000	600	600	600	4,800
(b) Residential courses .. .. .	1,000	1,000	1,000	1,000	1,000	1,000	6,000
Provision of bursaries to enable selected teachers to undertake university courses ..	..	..	..	1,200	1,200	1,200	3,600
Development of health and physical education in practising schools and teachers colleges—							
(a) Equipment .. .. .	600	600	600	400	400	400	3,000
(b) Camps for teachers college students .. .. .	500	500	500	300	300	300	2,400
Publications, films, records, etc. .. ..	968	968	966	966	966	966	5,800
Development of school camping and hostelling—							
(a) Equipment of camps and schools ..	1,000	1,000	1,000	800	800	800	5,400
(b) School camping and hostelling ..	600	600	600	400	400	400	3,000
Total .. .. .	5,668	5,668	5,666	5,666	5,666	5,666	34,000



Table 50

**Commonwealth Medical Officers**

Number of clinical examinations by Commonwealth Medical Officers—by States—1966-67

State	Departments	Seamen	Pensioners	Others	Total
New South Wales .. .. .	28,197	1,226	6,148	8	35,579
Victoria .. .. .	14,751	205	3,742	16	18,714
Queensland .. .. .	6,212	145	2,202	..	8,559
South Australia .. .. .	4,478	89	2,330	..	6,897
Western Australia .. .. .	2,814	241	1,631	..	4,686
Tasmania .. .. .	1,337	2	369	101	1,809
Australian Capital Territory .. .. .	5,654	..	91	1,664	7,409
Northern Territory .. .. .	1,441	4	59	348	1,852
Commonwealth .. .. .	64,884	1,912	16,572	2,137	85,505

Table 51

**Commonwealth Medical Officers**

Number of vaccinations by Commonwealth Medical Officers—by States—1966-67

State	Smallpox	Yellow Fever	Cholera	T.A.B.	Tetanus	Plague	Total
New South Wales .. .. .	25,830	1,069	32,009	992	361	72	60,333
Victoria .. .. .	2,607	622	3,715	1,286	199	5	8,434
Queensland .. .. .	4,694	184	5,457	316	105	2	10,758
South Australia .. .. .	3,231	211	2,546	12	..	2	6,002
Western Australia .. .. .	2,591	176	2,979	215	260	2	6,223
Tasmania .. .. .	1,590	34	2,067	509	72	5	4,277
Australian Capital Territory .. .. .	2,776	69	4,708	4,312	123	91	12,079
Northern Territory .. .. .	2,531	24	2,536	838	733	6	6,668
Commonwealth .. .. .	45,850	2,389	56,017	8,480	1,853	185	114,774

Table 52

**Commonwealth Health Laboratories**

Number of pathological examinations and laboratory tests performed and number of patients—1966-67

Health laboratory	Examinations and tests*	No. of patients
Albury .. .. .	118,688	20,824
Alice Springs .. .. .	43,124	8,780
Bendigo .. .. .	163,767	26,131
Cairns .. .. .	378,161	52,294
Canberra .. .. .	567,116	112,435
Darwin .. .. .	172,327	40,265
Hobart .. .. .	169,689	18,526
Kalgoorlie .. .. .	45,761	9,352
Launceston .. .. .	66,982	13,527
Lismore .. .. .	264,218	36,268
Port Pirie .. .. .	70,010	14,235
Rockhampton .. .. .	409,398	60,904
Tamworth .. .. .	225,267	34,604
Toowoomba .. .. .	257,596	39,574
Townsville .. .. .	386,738	57,309
Total .. .. .	3,338,842	545,028

\* Nuffield points score.



Table 53 **National Biological Standards Laboratory**

Summary of all samples examined—1966-67

Type	No. examined	Failures	Percentage of failures
Therapeutic Substances Act—Official samples ..	1,111	265	23.9
National Health Scheme—Pharmaceutical benefits samples .. .. .	380	86	22.6
Other Departments and authorities .. .. .	287	70	24.4
Item 28A—Customs (Prohibited Imports) Regulations and miscellaneous samples .. .. .	13	..	..
Total .. .. .	1,791	421	23.5

Table 54 **National Biological Standards Laboratory**

Safety tests performed—1966-67

Type	No. examined	Passed	Failed	Suspected failures— not confirmed
Sterility—				
Standard test technique .. ..	553	528	18	7
Millipore technique .. ..	120	119	1	..
Histamine-like substances .. ..	64	64	..	..
Toxicity .. .. .	163	160	..	3
Pyrogens .. .. .	148	148	..	..

Table 55 **Commonwealth Acoustic Laboratories**

Cases examined—1966-67

New cases attending laboratories	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Cwlth
Repatriation .. .. .	2,354	695	532	438	262	80	4,361
Children .. .. .	2,135	1,128	1,603	874	594	488	6,822
Social Services .. .. .	4	..	1	..	2	1	8
Army .. .. .	246	137	102	74	1	1	561
R.A.A.F. .. .. .	9	31	6	30	42	142	260
Navy .. .. .	55	12	1	..	11	..	79
Directors of Health .. .. .	114	210	8	40	15	4	391
Commonwealth compensation .. .. .	64	51	23	21	9	..	168
State compensation .. .. .	..	..	139	..	..	..	139
Miscellaneous .. .. .	76	128	304	103	96	65	772
Total .. .. .	5,057	2,392	2,719	1,580	1,032	781	13,561
Civil Aviation referrals .. .. .	577	755	207	259	129	15	1,942



Table 56 **Commonwealth Acoustic Laboratories**

## Calaid hearing aids fitted—1966-67

<i>Calaid fitted</i>	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Cwlth
Repatriation .. .. .	759	737	425	297	220	136	2,574
Children .. .. .	325	280	173	114	57	21	970
Health .. .. .	29	58	41	12	9	11	160
Adolescents .. .. .	6	22	10	1	8	..	47
Social Services .. .. .	..	..	..	..	..	1	1
Army .. .. .	..	2	..	..	1	1	4
R.A.A.F. .. .. .	..	..	1	..	..	..	1
Navy .. .. .	1	..	..	..	..	..	1
Commonwealth compensation .. .. .	2	9	..	4	..	..	15
<b>Total .. .. .</b>	<b>1,122</b>	<b>1,108</b>	<b>650</b>	<b>428</b>	<b>295</b>	<b>170</b>	<b>3,773</b>

Table 57 **Commonwealth Acoustic Laboratories**

## Calaid hearing aids maintained—1966-67

<i>Calaid Maintained</i>	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Cwlth
Repatriation .. .. .	4,647	4,572	1,853	1,687	1,447	507	14,713
Health .. .. .	1,161	656	527	354	249	88	3,035
Children .. .. .	1,969	1,889	901	828	445	239	6,271
Social Services .. .. .	11	12	2	1	4	5	35
Army .. .. .	27	14	7	7	2	1	58
R.A.A.F. .. .. .	3	7	2	3	..	..	15
Navy .. .. .	3	2	..	..	..	..	5
Commonwealth compensation .. .. .	13	9	..	4	1	..	27
<b>Total .. .. .</b>	<b>7,834</b>	<b>7,161</b>	<b>3,292</b>	<b>2,884</b>	<b>2,148</b>	<b>840</b>	<b>24,159</b>

Table 58 **Commonwealth X-ray and Radium Laboratory**

## Expenditure under the National Welfare Fund on Radio-isotopes for medical purposes—1955-56 to 1966-67

<i>Year ended 30 June</i>	<i>Expenditure</i>	<i>Year ended 30 June</i>	<i>Expenditure</i>
	\$		\$
1956 .. .. .	6,172	1962 .. .. .	28,988
1957 .. .. .	13,900	1963 .. .. .	35,936
1958 .. .. .	15,954	1964 .. .. .	55,874
1959 .. .. .	21,382	1965 .. .. .	67,942
1960 .. .. .	19,368	1966 .. .. .	81,755
1961 .. .. .	27,736	1967 .. .. .	132,201



Table 59

## National Health and Medical Research Council

Grants made from the Medical Research Endowment Fund—1966-67\*

Universities, institutions and hospitals				Research workers	Scholarships	Technical assistance	Maintenance and equipment	Total
				\$	\$	\$	\$	\$
<b>Universities</b>								
University of Adelaide	..	..	..	22,810	14,140	26,050	23,320	86,320
Flinders University	..	..	..	..	..	..	8,500	8,500
University of Melbourne	..	..	..	91,828	9,880	72,115	38,736	212,559
Monash University	..	..	..	22,350	8,340	20,400	11,500	62,590
University of New South Wales	..	..	..	16,367	2,336	15,900	..	34,603
University of Queensland	..	..	..	14,760	3,820	12,638	21,500	52,718
University of Sydney	..	..	..	52,724	3,300	28,042	19,764	103,830
University of Tasmania	..	..	..	..	..	..	2,000	2,000
University of Western Australia	..	..	..	11,079	990	35,341	9,210	56,620
<b>Institutions and hospitals</b>								
New South Wales	..	..	..	68,910	..	7,000	9,890	85,800
Victoria	..	..	..	118,250	8,980	89,965	7,900	225,095
Queensland	..	..	..	1,750	..	..	7,700	9,450
South Australia	..	..	..	..	..	3,915	4,881	8,796
<b>Travelling Fellowships</b>				16,367	22,500	..	..	22,500
<b>Total</b>				420,828	74,286	311,366	164,901	971,381

\* The above figures are not strictly comparable with those in Table 59 in the 1965-66 Annual Report as the method of allocation of grants has been revised.

Table 60

## Commonwealth Grants

Red Cross Blood Transfusion Service—1953-54 to 1966-67

Year ended 30 June							Commonwealth grant	Year ended 30 June							Commonwealth grant
							\$'000								\$'000
1954	..	..	..	..	..	..	88	1961	..	..	..	..	..	..	315
1955	..	..	..	..	..	..	138	1962	..	..	..	..	..	..	349
1956	..	..	..	..	..	..	172	1963	..	..	..	..	..	..	369
1957	..	..	..	..	..	..	214	1964	..	..	..	..	..	..	402
1958	..	..	..	..	..	..	251	1965	..	..	..	..	..	..	435
1959	..	..	..	..	..	..	263	1966	..	..	..	..	..	..	490
1960	..	..	..	..	..	..	282	1967*	..	..	..	..	..	..	974

\* The figure for this year reflects an alteration in accounting procedures during 1966-67, when annual payments were replaced by quarterly payments. The grant relates to expenditure incurred by the Society during the period 1 July 1965 to 31 March 1967.

Table 61

## Commonwealth Grants

Red Cross Blood Transfusion Service—by States—1966-67

State							*Payments 1966-67	State							*Payments 1966-67
							\$'000								\$'000
New South Wales	..	..	..	..	..	..	231	Tasmania	..	..	..	..	..	..	24
Victoria	..	..	..	..	..	..	276	Australian Capital Territory	..	..	..	..	..	..	11
Queensland	..	..	..	..	..	..	215	Northern Territory	..	..	..	..	..	..	2
South Australia	..	..	..	..	..	..	123								
Western Australia	..	..	..	..	..	..	92	Commonwealth	..	..	..	..	..	..	974

\* These payments relate to expenditure incurred by the Society during the period 1 July 1965 to 31 March 1967.



Table 62 **Commonwealth Grants**

## Home Nursing Subsidy Scheme—1956-57 to 1966-67

Year ended 30 June						Annual subsidy	Year ended 30 June						Annual subsidy
						\$'000							\$'000
1957	..	..	..	..	..	4	1963	..	..	..	..	..	289
1958	..	..	..	..	..	36	1964	..	..	..	..	..	372
1959	..	..	..	..	..	69	1965	..	..	..	..	..	465
1960	..	..	..	..	..	107	1966	..	..	..	..	..	546
1961	..	..	..	..	..	156	1967	..	..	..	..	..	664
1962	..	..	..	..	..	215							

Table 63 **Commonwealth Grants**

## Home Nursing Subsidy Scheme—by States—1966-67

State						Payments 1966-67	State						Payments 1966-67
						\$'000							\$'000
New South Wales	..	..	..	..	..	175	Western Australia	..	..	..	..	..	128
Victoria	..	..	..	..	..	237	Tasmania	..	..	..	..	..	10
Queensland	..	..	..	..	..	86							
South Australia	..	..	..	..	..	29	Commonwealth	..	..	..	..	..	664

The apparent minor error in the total is due to "rounding off".

Table 64 **Commonwealth Grants**

## Free Milk for School Children—1950-51 to 1966-67

Year ended 30 June						Commonwealth Grant	Year ended 30 June						Commonwealth Grant
						\$'000							\$'000
1951	..	..	..	..	..	72	1960	..	..	..	..	..	6,719
1952	..	..	..	..	..	1,630	1961	..	..	..	..	..	7,120
1953	..	..	..	..	..	3,043	1962	..	..	..	..	..	7,483
1954	..	..	..	..	..	3,999	1963	..	..	..	..	..	7,454
1955	..	..	..	..	..	4,475	1964	..	..	..	..	..	7,775
1956	..	..	..	..	..	4,811	1965	..	..	..	..	..	8,059
1957	..	..	..	..	..	5,214	1966	..	..	..	..	..	8,493
1958	..	..	..	..	..	5,511	1967	..	..	..	..	..	9,021
1959	..	..	..	..	..	6,137							

Table 65 **Commonwealth Grants**

## Free Milk for School Children—by States—1966-67

State										No. of children*	Payments
										As at 30 June 1967	1966-67
										000's	\$'000
New South Wales	..	..	..	..	..	..	..	..	..	620	3,067
Victoria	..	..	..	..	..	..	..	..	..	475	2,391
Queensland	..	..	..	..	..	..	..	..	..	260	1,396
South Australia	..	..	..	..	..	..	..	..	..	191	857
Western Australia	..	..	..	..	..	..	..	..	..	137	698
Tasmania	..	..	..	..	..	..	..	..	..	63	442
Australian Capital Territory	..	..	..	..	..	..	..	..	..	17	93
Northern Territory	..	..	..	..	..	..	..	..	..	11	77
Commonwealth	..	..	..	..	..	..	..	..	..	1,774	9,021

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



Table 66

## Commonwealth Grants

Mental health institutions—by States—1955-56 to 1966-67

				N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	Cwlth
				\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1955-56										
Commonwealth grant	..	..	..	418	892	133	24	20	59	1,546
Net State expenditure	..	..	..	835	1,783	266	49	40	119	3,093
Total expenditure..	..	..	..	1,253	2,674	400	73	60	179	4,639
1956-57										
Commonwealth grant	..	..	..	767	1,054	176	257	104	138	2,496
Net State expenditure	..	..	..	1,534	2,109	352	514	207	276	4,993
Total expenditure..	..	..	..	2,301	3,163	528	771	311	414	7,489
1957-58										
Commonwealth grant	..	..	..	648	1,091	228	304	58	183	2,513
Net State expenditure	..	..	..	1,297	2,181	456	609	117	366	5,026
Total expenditure..	..	..	..	1,945	3,272	685	913	175	548	7,538
1958-59										
Commonwealth grant	..	..	..	394	1,239	237	245	34	92	2,241
Net State expenditure	..	..	..	787	2,478	474	489	69	184	4,482
Total expenditure..	..	..	..	1,181	3,718	711	734	103	275	6,722
1959-60										
Commonwealth grant	..	..	..	718	1,036	149	184	74	134	2,295
Net State expenditure	..	..	..	1,436	2,073	298	367	147	268	4,590
Total expenditure..	..	..	..	2,154	3,109	448	551	221	402	6,885
1960-61										
Commonwealth grant	..	..	..	866	168	195	91	31	104	1,454
Net State expenditure	..	..	..	1,732	335	391	183	61	208	2,909
Total expenditure..	..	..	..	2,597	503	586	274	92	312	4,363
1961-62										
Commonwealth grant	..	..	..	1,297	..	141	56	154	..	1,648
Net State expenditure	..	..	..	2,595	..	283	111	308	..	3,297
Total expenditure..	..	..	..	3,892	..	424	167	462	..	4,945
1962-63										
Commonwealth grant	..	..	..	1,295	..	75	104	116	..	1,590
Net State expenditure	..	..	..	2,590	..	150	208	232	..	3,181
Total expenditure..	..	..	..	3,885	..	226	313	347	..	4,771
1963-64										
Commonwealth grant	..	..	..	982	..	108	173	332	..	1,595
Net State expenditure	..	..	..	1,964	..	216	345	663	..	3,189
Total expenditure..	..	..	..	2,947	..	324	518	995	..	4,784
1964-65										
Commonwealth grant	..	..	..	659	711	225	265	447	197	2,504
Net State expenditure	..	..	..	1,319	1,423	449	530	893	394	5,007
Total expenditure..	..	..	..	1,978	2,134	674	794	1,340	591	7,511
1965-66										
Commonwealth grant	..	..	..	1,717	1,567	146	242	338	529	4,539
Net State expenditure	..	..	..	3,434	3,134	293	484	675	1,058	9,078
Total expenditure..	..	..	..	5,151	4,700	439	726	1,013	1,586	13,617
1966-67										
Commonwealth grant	..	..	..	2,217	1,192	288	193	260	823	4,973
Net State expenditure	..	..	..	4,434	2,385	576	385	521	1,646	9,947
Total expenditure..	..	..	..	6,652	3,577	863	578	781	2,469	14,920
<b>Total</b>										
Commonwealth grant	..	..	..	11,979	8,951	2,103	2,137	1,967	2,259	29,395
Net State expenditure	..	..	..	23,957	17,901	4,205	4,275	3,933	4,518	58,790
Total expenditure..	..	..	..	35,936	26,852	6,308	6,412	5,900	6,776	88,184

Apparent minor errors in totals are due to "rounding off".



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