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ANNUAL REPORT OF THE DIRECTOR-GENERAL OF HEALTH 1973-74

AUSTRALIAN DEPARTMENT OF HEALTH

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Annual Report Director-General of Health 1973-74

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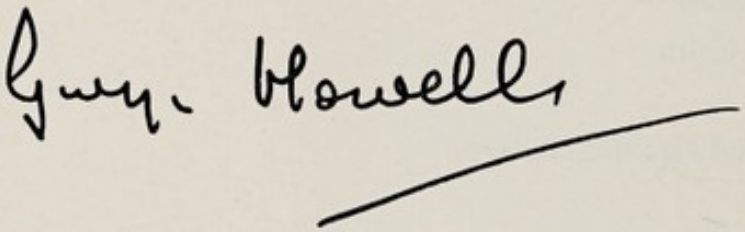
The Hon. D. N. Everingham, M.P.
Minister for Health
Parliament House
Canberra.

I present herewith my report of the activities of the Australian Department of Health for the year ended 30 June 1974.



Gwyn Howells
Director-General of Health
September 1974
Canberra, A.C.T.

Introduction

'But thou wouldst not think how ill all's here about my heart.'

—Shakespeare, *Hamlet*, Act V, Scene II

The unfortunate Hamlet, of course, died from other causes soon after he made that complaint about his heart. Not for him the acute chest pains, the breathlessness, the nausea of a 'heart attack'; the illness about his heart was psychosomatic. Nonetheless, he left behind a quotable quote which is, I believe, peculiarly apposite to a discussion on that most alarming of public health topics, the rising incidence of heart disease in Australia.

Surprisingly, for a *public* health matter, the subject appears to have made little public impact, in spite of the splendid efforts of the National Heart Foundation and other bodies to alert people to the very real dangers. Few of us bother to think about our hearts or 'how ill all's here about them' until we become personally involved in a case of heart disease.

This is doubtless explainable by the fact that there is nothing clear-cut and immediately obvious about the disease as there is about, say, smallpox or influenza. Similarly, deaths from traffic accidents or drug abuse or an excess of alcohol are, in the public mind, more understandable, more preventable, than deaths from a disease which can be triggered in a confusing variety of ways, and about which there is such a confusing array of expert opinions on cause and effect, prevention and cure.

Heart disease is not, of course, a phenomenon peculiar to the twentieth century. The mummified remains of the earliest Egyptians show evidence of diseases of the heart and blood vessels. The Aztecs of Mexico treated 'oppression of the chest' with drugs extracted from native plants long before the Spanish conquest. A famous Indian medical treatise, the *Sushruta Samhita*, believed to date back more than 2000 years, describes a 'pain felt in the region of the heart which seems as if being drawn and crushed, pierced and cracked, pricked and split'—surely a classic case of angina pectoris.

But concern about heart disease is very much a latter-day phenomenon. Not very many years ago, Australia's major worry in the public health field was the control of infectious diseases. Our successes in that area are well-known (although it should not be assumed that public health authorities, including this Department, are complacent about infectious diseases because of those past successes).

But, having managed to largely bring under control the classic diseases spread by human contact (with the notable exception of venereal diseases), public health authorities are now giving attention to those problems which were largely unknown to earlier generations of Australians, problems produced by changing technologies, by new social pressures, by the general life-style of the mid-twentieth century. The abuse of drugs, both licit and illicit, the appalling loss of life on the road, diseases resulting from cigarette smoking, the by-products of alcohol misuse and, of course, heart disease—

all these are problems of enormous magnitude which exact a heavy toll of valuable lives. The economic burden they have collectively placed on the community is virtually incalculable. The saddest comment of all is that each of the problems is, to a large degree, avoidable and the economic burden therefore largely unnecessary.

Of the several problems, heart disease is undoubtedly the one making the greatest impact on the life of the Australian community through the sheer volume of its victims. Consider the facts:

- Coronary heart disease is responsible for about one-third of total deaths each year—some 40,000 Australians can expect to die from it in the next twelve months.
- Coronary heart disease and cerebrovascular disease between them are responsible for about one-third of all *premature* deaths (that is, of people under sixty-five years).
- Australia has the world's seventh highest mortality rate for coronary heart disease.

According to estimates made by the National Heart Foundation, some 400,000 Australians have coronary heart disease, 235,000 of them under sixty-five years of age. Many of them don't know they have it and perhaps won't know until the disease manifests itself in some obviously recognisable —and possibly deadly—form. The Heart Foundation also estimates that heart disease is costing Australia some $700 million each year in medical treatment, pensions, and lost output through premature death and permanent or temporary invalidism.

This is a frightening economic burden which we can ill afford, but which most people appear to accept with complacency. There seems to be a strange fatalism abroad in the community concerning heart disease. For some, this is prompted by a sense of inevitability, a belief that death or illness occurs to everyone sooner or later and there is nothing that can be done to change it. Others cling to a head-in-the-sand definition of heart disease—that it is something unpleasant which happens to someone else. Others are only too well aware of it but are equally aware of the material pleasures they might have to forgo if they think too seriously about it. It is far easier *not* to think about heart disease than to think about it, far more comfortable to turn a blind eye to the increasing number of funeral notices which ask that donations be sent to the National Heart Foundation in lieu of flowers to the bereaved.

I suggest it is time for an attitude change, time for the fatalists and their fellows to start considering the cost in human life and personal misery and lost production. That is the simple message of this introductory chapter—a plea for a widespread community response to the enormous problem of heart disease.

Awareness of a problem is, of course, the first step towards finding a solution. An analysis of the problem's causes can indicate where the solution lies—and here, of course, appears an immediate obstacle in relation to coronary heart disease. The diversity of opinion on its causes and cures is vast. Newspaper headlines continually spell out a bewildering array of theories and counter-theories. Hypertension, incorrect diet, high cholesterol levels, obesity, lack of exercise, cigarette smoking, stress, inherent personality factors, carbohydrates—all are blamed to varying degrees, either singly or in combination, for the incidence of heart disease.

The blame, I believe, should be shared by all these factors, and perhaps by others as yet undiscovered. In the face of so many theories and so much

advice from so many experts, I feel there is little to be gained by rating factors in order of importance. No one, I believe, can say with total authority that factor A is more important than factor B or factor C.

What can be said is that the potential victims of the disease ought to be aware of *all* the risk factors, and to be conscious of symptoms to be watched for and precautions to be taken.

The medical profession is certainly more conscious today of the heart disease problem than it was only a few short years ago. One of the great advances in medical science has been the recognition that factors other than ageing are of major significance in the development of the disease, and that such factors should be amenable to the traditional principles of disease prevention and control. The very significant epidemiological studies of the past decade have also enabled the identification of people at high risk and have suggested methods of preventive treatment for them.

There has also been a major advance in understanding the natural history of the varied forms of heart disease, which has led to greatly improved management. The establishment of an increasing number of coronary care units in Australian hospitals is evidence of this new understanding. The techniques of intensive care employed in such units have already prevented many premature deaths. In order to make the most of the potential of these units, earlier recognition of heart attack in the community and early action to deal with it must be a very real objective for health services in the future. Thousands more premature deaths could certainly be prevented as a result.

Another great advance in management has arisen from an appreciation of the relatively hopeful outlook for patients who have recovered, or even partly recovered, from myocardial infarction and other forms of coronary heart disease. The benefits of active physical, social and vocational rehabilitation are now well established.

So there has been a vast improvement in outlook for victims of the disease, after the disease has manifested itself in obvious form. It is for the other victims—those who have the disease but are not yet aware of its presence, or who fail to recognise its symptoms, or who fail to seek expert advice when they do—that the community should now be most concerned.

Here again there are hopeful signs. The growing public acknowledgement of the hazards of smoking, for instance, or the continual emphasis in the press and popular magazines on sane diet and the importance of exercise, or the continuing public debate on the merits of polyunsaturated foods—all are pointers to increasing community interest in better health generally and heart disease in particular. This interest needs to be encouraged and reinforced at all levels of the community.

My Department already plays a major role in the heart disease field through the encouragement of research. The National Health and Medical Research Council has taken a number of initiatives specifically directed towards investigation of heart disease and closely associated matters.

In May 1974, for instance, the Council announced the formation of a special clinical research unit to study heart disease, which will be supported initially for a period of seven years. The unit, under the control of a Sydney cardiologist Dr Stephen Hunyor, is to conduct research into the basic problems of high blood pressure and its effects on the heart.

Another project which has been the subject of special support by the Council is the National Heart Foundation's hypertension study, which has received a grant of $100,000 to cover a three-year period. And, of course, grants for a wide variety of investigations are being made annually. In the

current triennium, the Council is expected to spend more than $1 million funding research projects relating directly or peripherally to heart disease. Grants in the 1974 calendar year alone total more than $400,000, and cover projects ranging from control of the coronary circulation in health and disease, to central autonomic mechanisms in hypertension, to a feasibility study of early discharge from hospital after a myocardial infarction.

In addition, the Council has supported the Howard Florey Institute of Experimental Physiology and Medicine at the University of Melbourne for a number of years, and in the current triennium has awarded it nearly $1 million in grants. The Institute's studies of the salt balance of the body are making an extremely valuable contribution to man's knowledge of the causes and management of hypertension and of circulatory and fluid disorders which may occur in diseases of the heart. Smaller but nonetheless important grants totalling some $67,000 have been made to post-graduate medical students in the 1974 calendar year for projects relating to heart disease. It is hoped that these awards will encourage the students to remain in the research field.

Although the Department itself has little opportunity for original research outside its specialised laboratories, officers of the A.C.T. Division are actively investigating opportunities to help those individuals whose life style and aggressive, fiercely competitive behaviour may make them vulnerable to heart disease. The Mental Health Branch of A.C.T. Health Services is looking into techniques for modifying such behaviour which, according to some authorities, is closely correlated with susceptibility to the disease. The Branch is also investigating biofeedback techniques with the aim of developing non-drug treatment of hypertension in selected patients.

As can be seen from the foregoing, Australian researchers are doing much to increase medical knowledge of the heart and its ills; it is a great pity that more notice is not taken of them by those tens of thousands of other Australians who may soon die or become crippled because they refuse to consider 'how ill all's here about my heart.'

I again express the hope that the community will take advantage of the increasing knowledge of the scientists by heeding the messages of the National Heart Foundation and other organisations, by taking greater care of their bodies and watching for those signs which warn of approaching disease. Just as the world has virtually beaten the scourge of infectious diseases, so can it, I am certain, conquer the twentieth century scourge of heart disease.

Turning now from the specific subject of heart disease, I would like to examine briefly the general pattern of health in Australia, as suggested by the health indicator tables of the statistical appendix of this report.

An Australian male child born today could expect to live for sixty-eight years if the existing pattern of mortality prevails. This is twenty-one years of life more than his counterpart born in the period 1881-1890. These added years represent a 45 per cent increase for males and a 47 per cent increase for females in life expectancy at birth.

Approximately half of this increase can be attributed to the dramatic reduction in infant mortality (deaths of children under one year of age). At the turn of the century, at least one baby in every ten died, but this has since fallen continuously until today the figure is close to one in sixty.

While the improvement in infant mortality rates has had a major impact on changing life expectancy, the infant mortality rate itself is now relatively small, so there is little scope for improvement in life expectancy from further

reductions in infant mortality. This conclusion is reflected in the levelling out of life expectancy noticeable since 1960.

The broad pattern indicated by the principal causes of death has varied little over the past ten years. As in previous years, diseases of the circulatory system were responsible for more than half the deaths in Australia in 1972. As indicated earlier, ischaemic heart disease continued to be the main killer, causing 30.2 per cent of all deaths, while cerebrovascular disease accounted for 14.4 per cent of deaths. Malignant neoplasms (cancer) comprised the second largest group, causing 17.1 per cent of all deaths, of which the most common was cancer of the digestive organs (6.2 per cent of all deaths).

Although ischaemic heart disease was the major cause of death, the proportion of deaths due to this cause in fact declined from 31.8 per cent of all deaths in 1966 to 30.2 per cent in 1972. This comparative decline has also occurred in recent years in several other developed countries, mainly Canada, England and Wales, West Germany and Italy. However, significant rises have occurred during the last ten years in Sweden and the United States, which experienced death rates of 365 and 327 per 100,000 respectively in 1971. By comparison, the rate for Australia in 1972 was 256 per 100,000, having declined from 285 per 100,000 in 1966.

A matter of growing concern is the steady increase in recent years in the death rate caused by malignant neoplasms. For Australia, cancer accounted for 145 deaths per 100,000 population in 1972, compared with 131 in 1962. Similar increases have been experienced by most other Western countries in the past decade.

There has been an increase in the Australian death rate from cerebrovascular disease from 114 per 100,000 in 1962 to 122 per 100,000 in 1972. A similar increase has occurred in several other developed countries, although Sweden and the United States experienced a notable decline from 131 to 112 and from 106 to 101 respectively.

In the 15-24 years age group in Australia, almost two-thirds of total deaths were due to accidents. While motor vehicle accidents accounted for only 3.3 per cent of all deaths in all age groups in 1972, they caused 51.5 per cent of all deaths in the 15-24 age bracket. Other accidents accounted for a further 12.2 per cent of deaths in this group. The death rate of males in the 15-24 group is in fact three times that for females in the group. For the 25-44 years age group, malignant neoplasms were the major cause of death, accounting for 19.2 per cent of deaths in 1972. This was followed by heart disease which accounted for 18.2 per cent. In the age groups 45-64 years and 65 years and over, heart disease predominated, accounting for 38.9 per cent and 41.3 per cent of all deaths respectively.

The continued rise in the estimated consumption of ready-made cigarettes for adults is a cause for concern. An estimated 2.96 kg per adult was smoked in 1973, compared with 2.76 kg in 1964. On the other hand, the consumption of hand-rolled cigarettes has declined markedly, but not enough to offset the increase in the ready-made variety. The increase in smoking in Australia contrasts markedly with the situation in the United States and the United Kingdom where estimated consumption per adult has declined steadily in recent years.

The estimated consumption of alcohol per head of population continues to increase. In 1973, 130 litres of beer were consumed per head compared with 107 litres in 1964, while per capita consumption of wine was ten litres in 1973 compared with six litres in 1964.

Turning finally to specific matters relating to my Department during the past year, perhaps the most significant event was the emergence of the Hospitals and Health Services Commission under the chairmanship of Dr Sidney Sax. The Commission, which had been preceded by an effective Interim Committee, was formally established by legislation passed in December 1973.

The Commission, of course, issues its own reports, but I would like to place on record my appreciation of the splendid spirit of collaboration and co-operation achieved by it and the Department of Health. I would also like to express my appreciation of the stimulation and excitement which the work and ideas emerging from the Commission have provided for the Department and its officers.

While the Commission's overall task is to plan and evaluate and the Department's task to execute and implement, a system has been developed whereby both bodies are involved in all aspects of any plan as it evolves. To avoid unnecessary and wasteful duplication and expenditure, an early decision was taken by Dr Sax and the Interim Committee that routine servicing would be undertaken by the Health Department. This, in retrospect, is undoubtedly the reason why such close collaboration has been achieved. Officers of the Department have been made freely welcome at Commission meetings, and the Chairman, Commissioners, and other officers of the Commission have equally had direct access to all Branches and officers of the Department. It is an excellent working relationship.

In relation to the activities of the Commission, a Community Health Branch was established within the Department during the year. The Branch not only undertakes implementation of community health projects approved by the Minister on the recommendation of the Commission, but also implements projects relating to community mental health, alcoholism and drug dependency. The Department evaluates and recommends approval of the latter projects, a role given to it under the *Mental Health and Related Services Assistance Act*, 1973. This is an extremely fast-growing area of the Department's activity.

The establishment of the Community Health Branch was one facet of a major restructuring of the Department during the year. There are now eight Central Office Divisions—Quarantine, Therapeutics, National Biological Standards Laboratory, Public Health, Medical Services, Policy and Planning, Management Services and National Health and Medical Research Council—a structure which is permitting the Department to carry out its expanding range of functions more efficiently. Several new Branches were also formed within the Divisions to cope with new or enlarged responsibilities.

One other structural change expected to take place shortly is the abolition of the A.C.T. Division of the Department and its replacement by the Capital Territory Health Commission. Pending completion of legislation which will formally establish the Commission, the Department is maintaining official responsibility for health services in the Territory. However, an Interim Committee which was established during the year under the chairmanship of Dr Ronald Wells, now has effective control of day-to-day management.

Among other comparatively new functions of the Department, two in particular have grown quickly in size and stature during the year. The Dental Health Branch made major strides in guiding the establishment of the Australian School Dental Scheme which, I firmly believe, is the most important new development in the public health field in Australia for many years. The year saw many initiatives in the expansion of training facilities for

dental therapists—the first major step towards achieving the goal of free dental treatment for all Australian school children up to fifteen years of age.

The Aboriginal Health Branch, too, became active in a number of fields following recruitment of senior staff. In close collaboration with other Departments and agencies, the Branch began work on detailed plans to implement a National Plan which aims within ten years to raise the standard of health of the Aborigines to the levels enjoyed by their fellow Australians.

In the general public health field, an increase was recorded in the 1973 calendar year in both the number and rate of new cases of tuberculosis notified in Australia—the first such increase since 1962. The number of new cases rose by 5.8 per cent, increasing the rate per 100,000 population from 11.35 to 11.86, while an increase was recorded also in the number of people requiring treatment again after receiving earlier treatment and being regarded as cured. The increases serve to re-emphasise the point made in last year's report, that there is an obvious need for continued caution in assessing the extent of tuberculosis control achieved in Australia.

In other traditional areas of the Department's work, general increases in activity were again recorded. The work of all areas is reported in detail on the following pages.

Quarantine

The Quarantine Division continued its ceaseless task of keeping Australia free of exotic disease throughout 1973-74. There was no repetition of the cholera episode reported the previous year, and all three Branches of the Division were successful in their efforts in spite of the ever-increasing movement of people, animals and plant material into the country.

General Quarantine

Many outbreaks of smallpox and cholera were reported in overseas countries during the year, but the General Quarantine Branch, by maintaining strictest regulations, prevented the introduction of these diseases into Australia. Air traffic continued to increase both in the number of aircraft arriving and in passenger loads. Wide-bodied aircraft capable of carrying increased numbers of passengers are replacing the smaller aircraft previously used to cater for overseas travel, while charter flights are growing in popularity and bringing in more and more visitors.

Smallpox

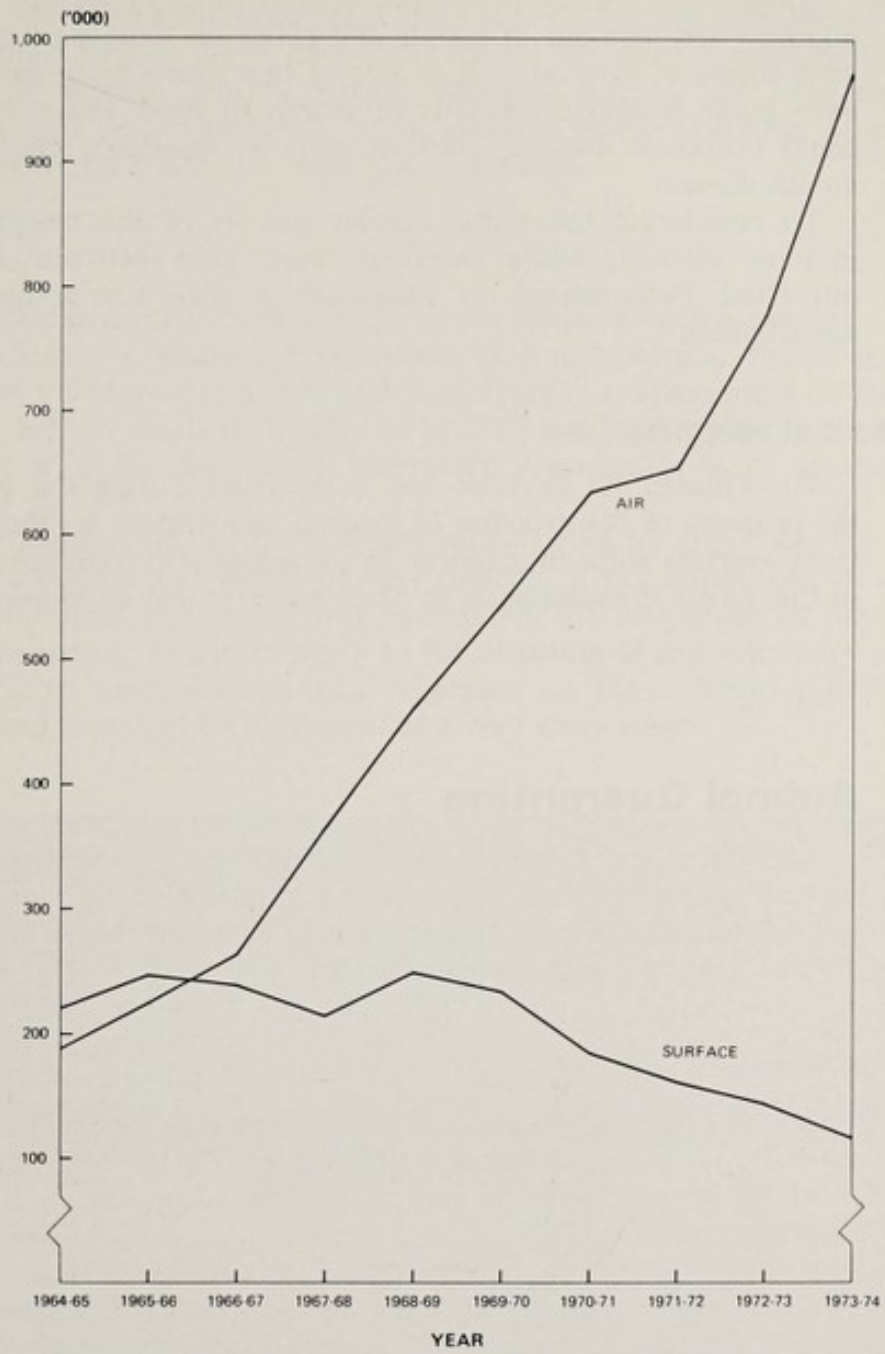
Smallpox is now endemic only in Bangladesh, Ethiopia, India and Pakistan, but nevertheless an increased number of cases was reported to the World Health Organisation. The total for 1973 was 135,288 cases compared with 65,153 cases in 1972.

Part of this increase may be attributed to the introduction of a new and more effective scheme for surveillance throughout much of India and Pakistan, and in consequence virtually complete reporting of cases. At the same time however, large and sudden epidemics developed in the Indian State of Bihar, which alone accounted for more than half the world's total of cases in 1973. India as a whole had more than 80 per cent of all cases reported throughout the world.

In spite of the increase of cases in 1973 the actual areas afflicted with smallpox in the four endemic countries have steadily diminished in size. In the period January-May 1974, more than 85 per cent of cases in India were reported from only two of its twenty-eight States and Union Territories; more than 70 per cent of cases in Bangladesh from three of the country's eighteen districts; and more than 80 per cent of cases in Pakistan from five of its fifty districts.

While smallpox is still endemic in Bangladesh, Ethiopia, India and Pakistan, precautions must be taken by Australia to prevent the importation of the disease. The population of Australia is largely unprotected by vaccination against smallpox, and if our quarantine barrier was breached an explosive outbreak could result. Imported outbreaks did occur in 1973 in

NUMBER OF PASSENGERS ON VESSELS BOARDED AND CLEARED—
1964–65 TO 1973–74



The rapid growth in air traffic to Australia in recent years is illustrated in this graph. The workload of the Quarantine Division has increased accordingly.

Japan, Kenya, Nepal, Somalia, the French Territory of the Afars and the Issas and the United Kingdom. Some of these countries have direct air connections with Australia so that vigilance at first ports of arrival has to be maintained until the danger period has elapsed.

Cholera

Outbreaks of cholera occurred in countries throughout the world during 1973, including Indonesia and Sri Lanka, both of which are within a few hours flying time of Australia. In spite of the pandemic in the latter half of the year, Australia remained free of the disease.

Unauthorised landings

Attention has been directed at various times in the last twelve months to unauthorised landings of people and goods on remote parts of the north and west coasts of Australia. It is known that crews from foreign fishing boats have made irregular landfalls in search of food and water. These visitors could introduce diseases such as malaria, smallpox, cholera and foot and mouth disease.

To counteract the visits, regular patrols of the coastline are made by military aircraft, while meetings were held between representatives of interested Departments to formulate a plan for comprehensive coastal surveillance.

Incinerators at seaports

The Quarantine Division has been active during the year in continuing the program of construction of modern incinerators for the disposal of refuse from overseas ships in seaports. In the major ports, collection and destruction of this refuse is undertaken by State Government or municipal authorities.

Animal Quarantine

Activity in the Animal Quarantine sphere continued at a high level with increasing importations of animals. A highlight of the year was a Symposium on Bluetongue Disease, held in Adelaide, to which the Department brought several leading experts from overseas.

Imports of livestock

Because of the increasing volume of imports, consideration is being given to re-siting some capital city quarantine stations and expanding others to meet future requirements for quarantine accommodation for horses, pigs, dogs and cats.

Amendments to the conditions for importation of horses from the United Kingdom were made during June 1973 to permit importation into Australia by air. To the end of May 1974, sixteen charter flights took place, and present indications are that this traffic will continue to increase.

Initially some health problems arose, and a number of horses showed obvious signs of travel stress on arrival. However, these difficulties have been overcome by careful attention to pre-medication of the animals and control of the temperature within the aircraft en route to Australia. An Australian veterinary surgeon, who is also a quarantine officer, accompanies each flight to ensure that quarantine requirements are maintained, particularly during refuelling stops.

Importations of dogs and cats continued at a high level and all quarantine accommodation was fully utilised during the year. The number of applications to import dogs and cats exceeded the available accommodation, and permits were issued strictly on the basis of the chronological order in which applications were received. Additional kennels are currently under construction and the provision of further accommodation to meet long term requirements is planned.

During May 1974, outbreaks of swine vesicular disease in the United Kingdom were brought under control and it is probable that, provided this disease has been eliminated from the United Kingdom, imports of pigs will be possible early in 1975. However, should the disease recur again imports would be further delayed. Swine vesicular disease has not occurred in Ireland, and consideration is being given to the importation of pigs from Northern Ireland and the Republic of Ireland.

Exotic diseases

The Department provided air fares for senior research scientists from the United States, Canada, the Republic of South Africa, Israel, the United Kingdom and Japan to attend and participate in a Symposium on Bluetongue Disease held in Adelaide in May 1974. The symposium was arranged in conjunction with the Australian Veterinary Association at its annual general meeting.

Bluetongue is one of the diseases which could be introduced by a variety of insect vectors and would be very difficult, if not impossible, to eradicate. The symposium went some way in defining the magnitude of the problems facing Australia, and in bringing to the attention of the veterinary profession the need to maintain continual vigilance so that, should the disease be introduced, it would be diagnosed at a very early stage.

Quarantine officers in Queensland faced a difficult task when this 2000-ton ship, Cherry Venture, *was driven ashore on an almost inaccessible beach near Maryborough. They negotiated rough bush tracks, floodwaters and high winds and seas to remove all food from the vessel and subsequently destroy it, to prevent any possible invasion of exotic animal disease.*

An unusual assignment for the Department's quarantine staff in Victoria during the year was the health testing of this fine Murray Grey bull, presented by the Prime Minister to the Chinese Government. Stringent tests were carried out to ensure that the bull complied with all regulations for import and export. The bull was then flown to Peking by the R.A.A.F. where it was welcomed by the Australian Ambassador, Dr S. A. Fitzgerald (right).

In May 1974, a senior veterinary officer from Western Australia visited Canada to attend a course in Exotic Diseases at Grosse Ile, Quebec. This course is organised by the Canadian Department of Agriculture, and Australians had been invited to participate on a number of occasions. Following the course, the Australian representative visited the United States Department of Agriculture Research Laboratory at Plum Island, New York.

High security animal quarantine station

The proposal for an off-shore high security animal quarantine station has progressed to the point where the Parliamentary Standing Committee on Public Works has recommended to the Parliament that the station be established on Cocos Island.

The estimated cost of the quarantine station, when referred to the Committee on Public Works, was $2.1 million. The total cost per head of cattle imported from mainland Europe was estimated at $2300, including pre-embarkation quarantine and testing but excluding transport costs. Comparable costs for smaller species of livestock are proportionally less, and costs of imports from the United Kingdom will be substantially less for each species.

Plant Quarantine

There was no diminution in the activities of the Plant Quarantine Branch during the year, with a number of special projects adding to the normal workload. The State Departments of Agriculture continued to provide full co-operation in the nation-wide task of preventing the introduction of plant pests and diseases into Australia.

Plant Quarantine Research Station

The major achievement during the year was the establishment of the Plant Quarantine Research Station in the Canberra suburb of Weston.

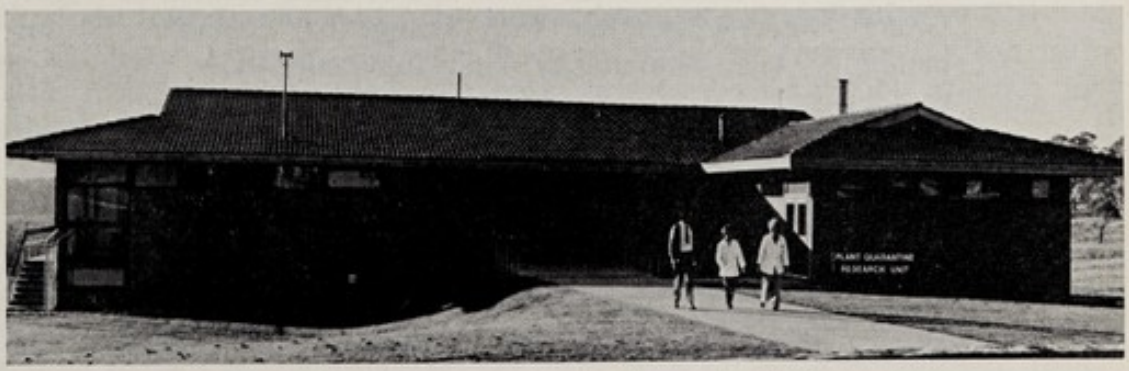
The station, built on 3.6 acres of land, contains 4,695 square feet of office, laboratory and service area, together with 5,400 square feet of quarantine plant houses. It includes laboratory space, a conference and training area, treatment facilities, special purpose glasshouses, plant houses specifically designed for plant quarantine, a shaded area for holding plants in containers, and plots for experimental purposes.

The station is expected to assume a significant role in plant quarantine operations throughout Australia, providing a practical link between the central administration in Canberra and the major plant quarantine operations at the principal ports of entry scattered around Australia.

Review conference

In February 1974, a Plant Quarantine Review Conference was held in Canberra. These meetings are held about every fourth year to review developments in the quarantine field and are attended by the Chief Quarantine Officers (Plants) and Senior Inspectors from each State, together with officers from Government Departments and agencies with an interest in plant quarantine.

Since the last review conference in 1969 there have been several developments in transport and communications. These include the introduction of container transport, transportation in bulk of restricted seed for processing, aircraft disinsection, the return of large quantities of armed services equipment from Vietnam and Malaysia/Singapore, commercial pelletting of seed, introduction of biological control agents for weed and insect control, and the establishment of a National Wheat Collection at Tamworth.



The Plant Quarantine Research Station in the Canberra suburb of Weston, which opened in April 1974—the first in Australia to be established solely for studies in plant quarantine techniques and treatments.

Radio communication

In an attempt to overcome the communication and transport problem of large urban areas, it has been decided after full investigation to install a UHF 'Talk-through' communication network in Sydney. The remote control unit for the network has several unusual features, including a voice-operated taperecorder, with play back, to record both incoming and outgoing messages, and a direct phone link between the Senior Inspector and all outstations. The unit can operate at any time without an operator.

Similar networks are planned in other areas, following a period of trial of the system in Sydney.

FAO Plant Protection Convention

The first international review of the Plant Protection Convention took place at FAO headquarters in Rome in July 1973, twenty-two years after the original Convention came into being. A Departmental officer was chairman at the initial ad hoc consultation which was attended by 50 participants from 26 countries.

Delegates reviewed the Articles of the Convention while a draft revised model phytosanitary certificate and re-export certificate were produced for circulation by FAO to member countries.

Publications

Several publications were printed and distributed during the year including *An Outline of Plant Quarantine*, *Post-Entry Quarantine for Imported Plants*, *Design of Plant Houses for Australian Quarantine Purposes*, and *Insect Pests Not Known to Occur in Australia.*

Aid to Indonesia

Aid to the Indonesian Plant Quarantine Service was provided under the Colombo Plan by the assignment of Mr. A. Catley, Scientific Officer, NSW Department of Agriculture, as an advisor to the Service for several weeks during 1973.

He supervised the installation of plant quarantine equipment given under the aid program, and instructed staff of the Indonesian Service in its use and maintenance. Equipment presently being supplied under Phase II of the aid program includes three plant houses being erected at Bogor, Medan and Ujung Pandang together with fumigation chambers, steam generators, pathology kits, entomology kits, fumigation kits, fogging and spraying equipment.

Potato Imports from New Zealand

Arrangements were made for Mr. J. Meagher, a leading nematologist with the Victorian Plant Research Institute, Burnley, to visit New Zealand from 16-27 July 1973 to investigate and report on the potato disease situation in New Zealand. In particular, Mr. Meagher was requested to investigate the potato cyst nematode outbreak and the black wart disease situation.

He found that the outbreak area of potato cyst nematode was confined to a relatively small area in the Pukekohe district in the North Island. The

New Zealand authorities believe they have contained the problem. Black wart in the Invercargill/Dunedin area appeared to be under control with infestation being found only on fourteen small properties.

Mr. Meagher recommended that imports of potatoes from New Zealand be allowed under quarantine supervision, for processing purposes provided the potatoes were certified by the New Zealand Department of Agriculture as having been grown in an area free of potato cyst nematode and black wart, and on land where a long crop rotation (in excess of four years) had been practised. As a result of a shortage of potatoes in Australia during the latter part of 1973, approval was granted for a small import from New Zealand for processing at approved premises in the Sydney metropolitan area under quarantine supervision.

International course

The fourth international course given by the Plant Quarantine Branch was held during February/April 1974 for 20 students from 16 overseas countries, including four from Papua New Guinea. Participants were sponsored by the Australian Government under the Colombo Plan, the Special Commonwealth African Assistance Plan and the South Pacific Aid Program. Lectures and practical demonstrations were given by Department officers in Canberra, while visits were made to CSIRO, the Forest Research Institute and the Botanic Gardens. The course also included a visit to Sydney to see the practical operation of plant quarantine in relation to container operations, quarantine of seed imports at an importer's premises, and post-entry of plants. In addition, the student group toured Queensland to see some of the agricultural industries which are protected by plant quarantine.

Repository for virus-tested fruit varieties

In 1971, the Australian Agricultural Council agreed that national repositories should be set up with the States for the collection, maintenance and distribution of virus-tested propagating material of commercial fruit varieties. The scheme, which aims to provide the fruit industry with a source of selected fruit varieties with a high degree of virus freedom and a potential for production, operates separate repositories for each of the major fruits.

During 1973, grape vines and stone fruit repositories were initiated at Burnley and Irymple (near Mildura) respectively. A second repository for stone fruit is planned at Rydalmere, a repository for citrus at Dareton on the lower Darling, and one for pome fruit in Tasmania. When fully established, the repositories will have virus-free planting material for the industry concerned.

Publicity

The publicity campaign, administered by the Department of Health for the Australian Agricultural Council, continued during the year. A new version of the *Travellers Guide to Plant Quarantine,* a publication listing the restrictions applying to the movement of plant materials from State to State, was printed and distributed together with a coloured pamphlet outlining the requirements of both State and Australian Plant Quarantine.

A group of overseas students at an international training course in plant quarantine, held at the new Plant Quarantine Research Station in Canberra.

A Serbo-Croat version of the animated film *The Travelling Garden* was distributed overseas, and arrangements have been made to produce versions in Greek, Italian, Turkish and Lebanese. Displays depicting the work of plant quarantine were mounted at agricultural shows in Sydney, Melbourne, Brisbane, Adelaide, Perth, Hobart and Launceston. A completely new display was prepared for the 1974 Royal Easter Show in Sydney.

Quarantine fees

On 1 September 1973, revised fees for the performance of plant quarantine inspection, treatment and supervision were introduced—the first significant review of the fees since 1951. The increases reflected the current labour and material costs for this work.

Brisbane Plant Quarantine Centre

At the end of 1973, a new quarantine and export centre was opened at Hamilton in Brisbane, placing quarantine activities in the main port area of the city. The centre offers service to the public in a busy and rapidly developing port area where larger and better equipped container depots are being built adjacent to container wharves. The buildings comprise offices and a bulk store, together with fumigation and steam-cleaning facilities. The increasing quantity and variety of artifacts being collected by tourists from Papua New Guinea and intercepted at the International Airport are dealt with at the quarantine centre.

Pharmaceutical Benefits

The year saw a further marked increase in the cost of the Pharmaceutical Benefits Scheme.

A major factor contributing to this was the increased dispensing fee granted to chemists on 1 August 1973. The rise, of eight cents, was payable for benefit prescriptions dispensed on or after 1 January 1973. In addition, the 1973-74 costs reflected the first full year's experience of major changes made to the benefits list during the previous financial year. The most significant of these changes were the listing of certain oral contraceptives as benefits from 1 February 1973, and the removal of restrictions on the minor tranquilliser diazepam on 1 December 1972.

The cost of the scheme

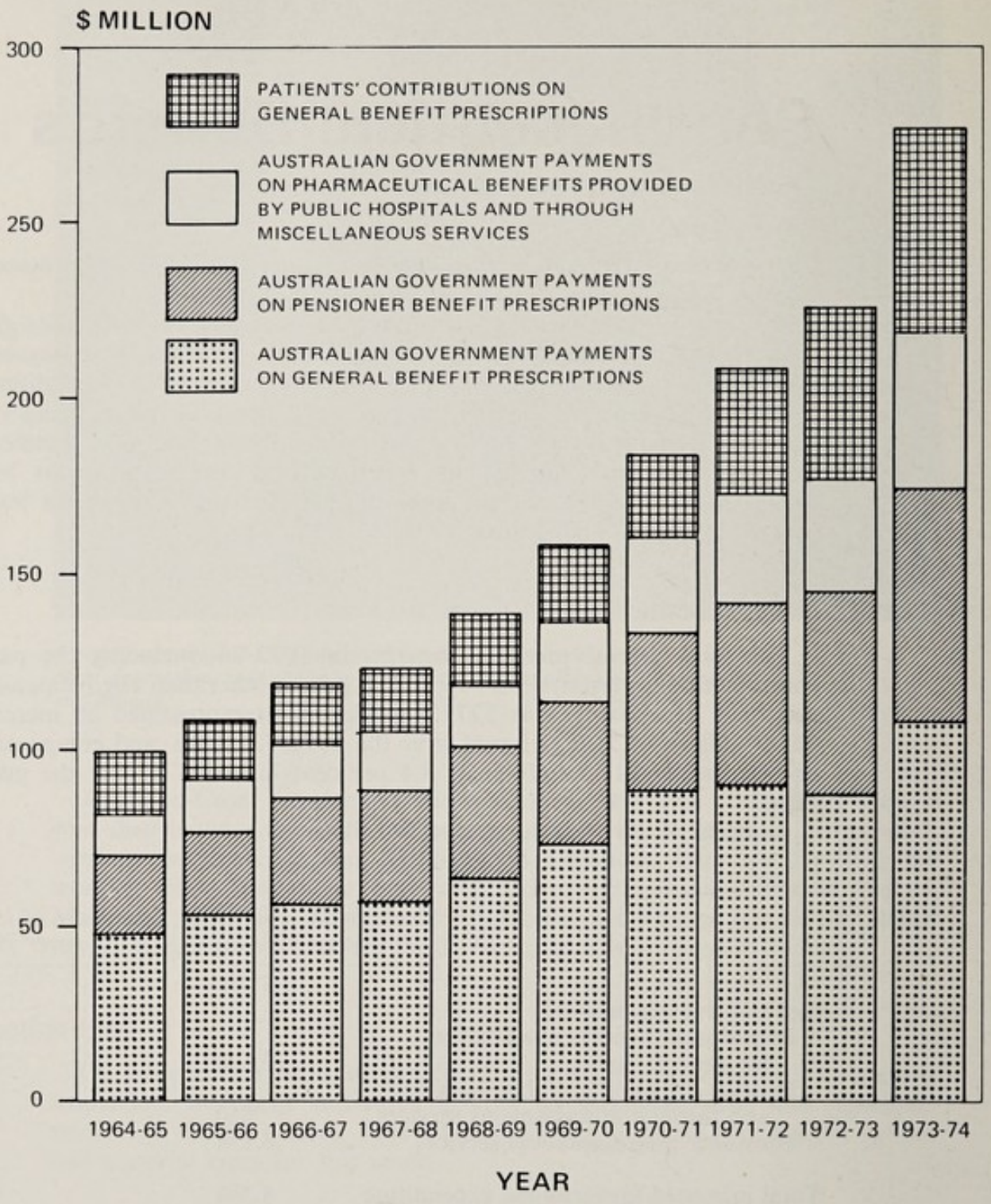
The total cost of providing benefits in 1973-74, including the patients' contribution on prescriptions supplied to people other than eligible pensioners and their dependants, was $277.3 million. This represented an increase of $51.0 million or 22.6 per cent over the 1972-73 figure, and compared with an increase of $17.5 million or 8.4 per cent in 1972-73 over the previous year.

Increased costs were distributed as follows:

	Increase in 1972-73 over 1971-72	*Increase in 1973-74 over 1972-73*
	$'000	*$'000*
Government expenditure		
Prescription benefits available to the general public	—2,630	20,635
Benefits provided in public hospitals and through miscellaneous services	860	11,365
Pensioner pharmaceutical services	6,134	8,664
Total increased Government expenditure	4,364	40,663
Increased patient contribution on prescriptions supplied to the general public	13,174	10,375
Total increased costs	17,538	51,038

It should be noted that 1972-73 was the first full year of the $1.00 patient contribution—hence the fall in Government expenditure on general benefits and the increase in patient contribution between 1971-72 and 1972-73 shown in the above table.

COST OF PHARMACEUTICAL BENEFITS—1964–65 TO 1973–74



General benefits

The cost of providing pharmaceutical benefits to people other than pensioners and their dependants was $167.1 million, including patient contribution. This was an increase of $31.0 million or 22.8 per cent over 1972-73—the largest annual increase in absolute terms since the broadening of the scheme to its present form in 1960-61.

Details of the main movements in the prescribing and cost of general benefits within the main therapeutic drug groups are shown in the following table:

GENERAL PHARMACEUTICAL PRESCRIPTION BENEFITS

Table of Drug Usage—Selected Groups, Ready-Prepared Items

Drug Group	*1973-74*		*Variation from 1972-73*			
	Cost	*Prescription Volume*	*Cost*	*%*	*Prescription Volume*	*%*
	$'000	*'000*	*$'000*		*'000*	
Analgesics	11,317	3,937	+1,970	21.1	+575	17.1
Pencillins	15,963	5,385	+1,488	10.3	+366	7.3
Drugs acting on blood vessels	10,919	2,271	+768	7.6	+70	3.2
Diuretics (non-mercurial)	9,384	2,749	+982	11.7	+356	14.9
Tranquillisers	8,466	3,857	+3,150	59.3	+1,842	91.4
Preparations for broncho-spasms	10,548	2,471	+2,451	23.4	+468	23.3
Anovulants	11,488	5,137	+10,084	—	+4,259	—
Tetracyclines	9,139	3,326	−519	−5.4	−175	−5.0
Anti-histamines	7,589	3,655	+488	6.9	+107	3.0
Erythromycin	6,920	2,075	−1,462	−17.4	−319	−13.3
Anti-depressants	5,275	2,216	+515	10.8	+362	19.5
Drugs acting on heart	4,352	908	+1,546	55.0	+214	30.8
Sulphonamides	4,096	1,418	+1,461	55.4	+384	37·1

Three major factors were responsible for the overall cost increase. The first was the increase of eight cents in the dispensing fee paid to approved suppliers of pharmaceutical benefits from 1 August 1973, with retrospective effect to 1 January of that year. In addition there were minor adjustments to the special purpose dispensing fee payable on ready-prepared prescriptions dispensed between 1 October 1972 and 31 December 1972. These increases are estimated to have cost $4.6 million in respect of prescriptions dispensed in 1973-74, and a further $1.7 million for prescriptions dispensed between 1 October 1972 and 30 June 1973.

A second major factor in the overall increase was the easing of restrictions on the minor tranquilliser diazepam, and the addition of oral contraceptives to the schedule of benefits during 1972-73. These measures are estimated to have cost an additional $2.6 million in respect of diazepam and $10.1 million for oral contraceptives during 1973-74.

The third major factor was increased prescribing associated with normal population growth and increased utilisation of certain groups of drugs, which are estimated to have cost an additional $12.5 million. Marked increases occurred in prescribing of analgesics, penicillins, diuretics, sulphonamides, and drugs acting on the heart. However, these increases were partially offset by decreases in tetracyclines, erythromycin and anti-depressants.

The average price of general benefit prescriptions in 1973-74 was $2.78 compared with $2.81 in 1972-73, despite the increase in the dispensing fee. This reflected the 'watering down' effect of increased prescribing of diazepam and anovulants, both costing less than the overall ruling average price. These increases, coupled with price reductions achieved through negotiations, obscured the effect of the eight cent per prescription increase in the dispensing fee.

Pensioner benefits

The cost of providing benefits to pensioners and their dependants reached $66.8 million in 1973-74, an increase of $8.7 million or 14.9 per cent over the previous year. As was the case with general benefits, this increase was the largest recorded since 1960-61. On the other hand, the volume of prescriptions written was only 2.2 million, or 8.7 per cent, above the level of the previous year, reflecting the extent to which costs were affected by increased dispensing fees.

The table below shows movements in prescribing and cost of pensioner benefits within the main therapeutic drug groups:

PENSIONER PHARMACEUTICAL PRESCRIPTION BENEFITS

Table of Drug Usage—Selected Groups, Ready-Prepared Items

	1973-74		*Variation from 1972-73*			
Drug Group	*Cost*	*Prescription Volume*	*Cost*	*%*	*Prescription Volume*	*%*
	$'000	*'000*	*$'000*		*'000*	
Analgesics	8,388	3,840	+1,117	15.3	+237	6.6
Drugs acting on blood vessels	6,080	1,637	+619	11.3	+90	5.8
Diuretics (non-mercurial)	7,323	1,990	+895	13.9	+277	16.2
Tranquillisers	4,752	2,058	+157	3.4	+504	32.4
Hypnotics and sedatives	3,236	2,637	+252	8.4	+6	0.02
Drugs acting on heart	2,896	954	+823	39.7	+107	12.6
Anti-depressants	2,452	1,092	+271	12.4	+187	20.6
Preparations for broncho-spasms	2,269	750	+523	30.0	+120	19.0
Antacids	2,107	1,234	+235	12.5	+84	7.3
Water and electrolyte replacement	1,837	956	+340	22.7	+126	15.2
Anti-diabetics	1,581	394	+188	13.5	+17	4.6
Skin sedative applications	902	510	+154	20.6	+68	15.3
Sulphonamides	693	245	+205	42.0	+49	25.2

Factors contributing to the overall cost increase are assessed as follows:

	Cost increase in 1973-74
	$'000
Increase of eight cents in dispensing fee	
(a) on prescriptions processed in 1972-73	900
(b) on prescriptions processed in 1973-74	2,200
Population increase	1,300
Increased utilisation	3,700

Public hospitals and miscellaneous services

The cost of benefit drugs supplied in public hospitals and through miscellaneous services continued to increase during the year. Total Government expenditure in this area was $43.4 million, an increase of $11.4 million or 35.4 per cent over 1972-73. This was due to a general increase in benefit drug usage, particularly in the area of new and more expensive items.

In addition, public hospital payments were inflated by a claim from the Victorian Hospitals and Charities Commission for their 1971-72 expenditure which was not received in time for payment in 1972-73.

Details of related statistics on benefits are shown in Appendix 1.

Changes in listing

The Pharmaceutical Benefits Advisory Committee recommended the listing of twenty-three new items during the year. In addition, twenty-six new forms and strengths of existing benefits were included in the list, while sixty-three items were deleted from the list of ready-prepared items.

Among the more important additional items were chlortetracycline and oxytetracycline topical and antibacterial ointments for use by pensioners, gammabenzene hexachloride cream and lotions used in the treatment of scabies and pediculosis, and the bronchodilator salbutamol which was previously listed only as the aerosol spray.

In December 1973, 10 mg capsules of sodium cromoglycate (Rynacrom) for use as a nasal insufflation in the treatment of allergic rhinitis were added to the list of benefits. At the same time, the restrictions were removed from the 20 mg capsules for oral inhalation (Intal) used by asthma sufferers.

This policy of progressively easing restrictions resulted in a number of other changes, including the removal of the authority requirement from the oral beta-blockers which are used in the treatment of heart conditions and high blood pressure. In addition, goats' milk, Nutramigen and soya formula used in cases of cows' milk allergy were made available for children up to six years of age (formerly four years), and the maximum quantity available for patient contribution was doubled.

Price negotiations

Despite continued rising costs within the pharmaceutical industry during 1973-74, negotiations for price reductions conducted by the Department were largely successful.

Negotiations concerning items already available as benefits achieved savings which are expected to result in a reduction in annual expenditure of

$4,293,000 at present prescription volumes. Other negotiations concerning items recommended for listing during the year by the Pharmaceutical Benefits Advisory Committee, or for a change of listing of items already available as benefits, achieved price reductions which are expected to save additional annual expenditure of $3,677,000.

The *Costs Information* forms introduced last year are now being used by more manufacturers, and this has enabled the Department to obtain more accurate information on the viability of particular benefit items. It is envisaged that this form will become even more widely used by pharmaceutical manufacturers in submitting information to the Department, following a recommendation by the Parliamentary Joint Committee on Prices. The Committee recommended that the National Health Act be amended to allow the Department to obtain cost and other financial information in respect of products in the Pharmaceutical Benefits Scheme.

Implementation of this recommendation (which is under consideration by the Government) would enable the Department to obtain relevant cost information if it were required. The Department would then be better equipped to carry out its assessments of the prices of items available as pharmaceutical benefits, to ensure that they are reasonably priced and that the Australian taxpayer is not unnecessarily burdened with excessive costs.

Offences

The Pharmaceutical Services State Committees of Inquiry considered fifty-eight references during the year concerning the service or conduct of pharmacists approved to supply pharmaceutical benefits. Although the references related mainly to the alleged supply of benefits which failed to meet the required standards of dispensing, some concerned alleged breaches of the National Health Act and the relevant Regulations.

As a result of the Committees' recommendations, thirty-two chemists were warned to exercise more care in dispensing and sixteen were given Ministerial reprimands, eight of which were published in the Government Gazette. In the remaining four cases finalised during the year, no further action was taken. Seventeen cases remained unresolved at 30 June 1974, compared with eleven cases carried over from 1972-73.

The Medical Services State Committees of Inquiry did not initiate any action for alleged offences by doctors relating to pharmaceutical benefits during the year. However, three of the four cases unresolved in 1972-73 were finalised. Following the Committees' recommendations, three doctors received Ministerial reprimands which were published in the Government Gazette. One case remained unfinalised at 30 June 1974.

Court proceedings were finalised in connection with two chemists and four doctors. One chemist was fined for submitting false statements and the other chemist was placed on a good behaviour bond for one year. The charges against three of the four doctors were proven, but the Court dismissed the charges under Section 19B of the Crimes Act. In relation to the charges against the fourth doctor, the prosecution tendered no evidence and the case was dismissed.

Therapeutic Goods

An examination of the Department's growing involvement in therapeutic matters led to the creation of a new Therapeutics Division during the year. It has three main arms—the existing Pharmaceutical Benefits Branch, a restructured Therapeutic Goods Branch, and an entirely new area, the Drug Evaluation Section.

The Therapeutic Goods Branch continues the work formerly undertaken by the Therapeutic Substances Branch with the exception of the evaluation of submissions supporting applications for clinical trials and marketing of drugs. The new Drug Evaluation Section will undertake this latter role in the coming year.

The Therapeutic Goods Branch has been restructured to provide administrative cells which perform specialised functions and which permit a rationalised approach to Branch activities. The work of these cells is described below.

Australian Drug Evaluation Committee

The activities of the Australian Drug Evaluation Committee continued at a high level, and an increase of 26 per cent was recorded in the number of resolutions made during the year, compared with 1972-73.

A total of 180 applications for general marketing of therapeutic substances and forty-two for approval of clinical trials was received. Sixty-two of the marketing applications were considered of which forty-one were approved, twenty-one of them on first presentation and twenty after further consideration. Approval to conduct clinical trials with forty-two new drugs was granted.

In addition to their work involving new therapeutic substances, Departmental evaluators and the Committee reviewed the safety and efficacy of several substances and groups of substances which have been on the Australian market for a number of years. As a result, six products were removed from sale because of lack of safety or efficacy, while several amendments were made to claims or warnings on specific products. Statements for publication or for distribution to the medical profession were prepared concerning such matters as the toxicity of bismuth subgallate, the potential hazards of excessive or long-term use of halogenated hydroxyquinolines, and hepatotoxicity associated with the use of erythromycin estolate.

The Committee made several important resolutions on policy matters. The first of these recommended that all pharmaceutical companies marketing spermicides should be required to include on the labels a statement indicating the expiry date and the efficiency of the formulation when used alone, with a condom or with a diaphragm.

Another resolution concerned future approvals to conduct clinical trials with new drugs. The Committee recommended that permission to conduct a clinical trial in a hospital or institution should be dependent on the existence

within the hospital or institution of an ethics review committee, which would also be required to consider and approve the protocol of the trial. The Committee asked the Department to determine the best way to implement this recommendation, and the matter is currently under consideration.

The provision of drug information to medical practitioners and pharmacists was also considered. Very few package inserts, produced specifically for the information of doctors and pharmacists and distributed in the container of formulated products, actually go to the doctors, whereas some have reached the patient. Patients who receive this physician-oriented information can react in unfortunate ways. Some develop a fear of the prescribed medication, others discontinue using it or draw incorrect conclusions about the condition for which it was prescribed, while others become over-concerned about minor side-effects which might not otherwise have been noticed.

It was proposed that a more reliable means of disseminating information should be investigated, with the aim of discontinuing package inserts other than those produced specifically for the patient. The Committee recommended that a system be developed by which drug-prescribing information would be printed in a standard format, on a uniform-sized card or loose-leaf sheet, for distribution direct to medical practitioners and pharmacists. When this system has been evolved, the use of package inserts for the doctor and pharmacist will be required only in the containers of formulations for parenteral use, or where there is a special need for information to be included in the package.

Adverse drug reactions and congenital abnormalities

The reorganisation of the therapeutics area has meant that the three major functions of the Adverse Drug Reactions Section are now carried out by three separate sub-sections—the Adverse Drug Reactions Advisory Committee Secretariat, the Congenital Abnormalities Sub-committee Secretariat, and the Information Retrieval Sub-section. This rationalisation of the workload has made possible further rapid expansion in activities of the area.

The Congenital Abnormalities Sub-committee, which was established in July 1972 following the imipramine episode in March of that year, met five times in the past year and examined matters such as the possible teratogenicity of clomiphenecitrate, the role of folate and vitamin B12 in causing abnormalities, and the possible effects of ultrasound diagnostic procedures on the foetus. The Sub-committee comprises a physician, a pharmacologist, a paediatrician, an obstetrician, a teratologist, an epidemiologist and a member of the Australian Drug Evaluation Committee—all eminent in their respective fields. Experts in other areas are co-opted as required.

The safety of clomiphene in regard to its teratogenic potential was brought into question following a ruling by a United States court which ordered a manufacturer to pay damages for a child born with an abnormality after the mother had taken the substance. Because the drug was also available in Australia, although under rigidly-controlled conditions of use, the Sub-committee investigated it as a matter of urgency. It was subsequently considered that there was as yet no substantive medical evidence to implicate the drug as the cause of the malformation.

Priority was again given throughout the year to the development of a system for monitoring congenital abnormalities in Australia and identifying possible causative agents. A feasibility study is currently under way, although the results will not be known for some time because of the size of the task. In the meantime, discussions with local research workers and appropriate

medical organisations are being held to build up a basis on which to institute a suitable system, and to increase awareness within the medical community for the need to contribute information on malformations detected at birth.

The Adverse Drug Reactions Advisory Committee was similarly active during 1973-74. Significant developments included the adaptation of the Department's computer facilities for preparation of the publication *Report of Suspected Adverse Drug Reactions*, previously a laborious and time-consuming task, and for the preparation of summaries for use by medical practitioners who contribute to the Committee's surveillance system. Further use of the A.D.P. system is planned to facilitate the work of the Committee.

Investigations into the neurotoxicity of bismuth subgallate were finalised, culminating in a recommendation for removal of this agent from use. The results of the investigation were published in the *Medical Journal of Australia*. An investigation of the safety of local anaesthetics containing more than 20 μg/ml of catecholamine was also completed, resulting in a recommendation that these formulations should be removed from the market because of possible severe cardiovascular reactions following their use.

Following recent moves to limit the use of adult-strength antibiotic preparations containing erythromycin estolate because of hepatotoxicity, the Committee has been investigating the incidence of liver dysfunction in children being treated with paediatric strengths of the antibiotic. This study is almost complete and a recommendation will be made in the near future.

The Committee's investigations into the feasibility of monitoring drug intake and morbidity due to suspected adverse reactions within a representative Australian community are nearing the final stages, and it is expected that the program will be implemented in the coming year. The number of reports received by the Australian Registry of Suspected Adverse Reactions to Drugs is expected to treble as a result. At present, the Committee operates an Australia-wide surveillance scheme based on spontaneous reporting of reactions. Analysis of data from the planned scheme, in conjunction with the present scheme, should provide invaluable information on drug prescribing and the incidence of reactions within the community.

Feedback to the local medical profession is to be intensified by preparation of an annual report of suspected adverse reactions received by the Committee, and by upgrading the *Adverse Drug Reactions Bulletin* to a monthly publication for distribution to all medical practitioners. This Bulletin was previously distributed at irregular intervals as a pilot trial to practitioners based in hospitals. Increased computer capability has allowed the Committee to expand feedback to the medical profession, and further services will become available as the Department's A.D.P. facility is developed.

National Therapeutic Goods Committee

The National Therapeutic Goods Committee, which comprises representatives of the State and Australian Health Departments, met regularly during the year. Its functions are to make recommendations to those Departments on action necessary to bring about co-ordination of legislation and administration of controls on therapeutic goods.

As reported last year, the Committee has formulated draft proposals covering all aspects of advertising of prescription and non-prescription drugs and therapeutic appliances. The Australian Health Ministers approved the

proposals in principle at their 1973 conference, and recommended that the Committee discuss the draft with the medical and allied professions, the pharmaceutical industry and other interested bodies.

As a result, the Sub-committee on Advertising met twice during the year with representatives of the Australian Medical Association, the Pharmaceutical Association of Australia and New Zealand, the Pharmacy Guild of Australia, the Society of Hospital Pharmacists of Australia, and the National Council of Chemical and Pharmaceutical Industries. Two other groups, the National Medical Media Council and the Joint Committee, Voluntary Proprietory Medicine Advertising Code, were consulted and further meetings have been arranged with them and the National Council of Chemical and Pharmaceutical Industries.

A special meeting of the Therapeutic Goods Committee was held on 9 April 1974 to discuss the advertising proposals further. The report of the Advertising Sub-committee on its discussions was considered, together with written submissions received from various interested groups. The Committee concluded that some need to modify its proposals had been demonstrated, and members agreed to certain amendments proposed by the Sub-committee. However, the Committee reiterated its previous opinion and recommendation that it was necessary for legislative controls over all forms of advertising of therapeutic goods to be introduced on a uniform basis by the Australian and State Governments, as appropriate to their constitutional powers. It also recommended that the Sub-committee on Advertising be directed to finalise its negotiations with interested parties by the end of July 1974.

Other major matters considered by the Committee included the general labelling standard for therapeutic goods, which will now be referred to the Therapeutic Goods Advisory Committee; uniform labelling of dispensed medicines; the General Agreement on Tariffs and Trade Code of Conduct for Preventing Technical Barriers to Trade; and problems associated with the use of electronic therapeutic goods.

Standard of therapeutic goods

A number of therapeutic goods from regular commercial shipments continued to be examined throughout the year for packaging, labelling, and conformity to standard on importation into Australia. The analysis of samples was again conducted by the Analytical Laboratories of the Department of Science.

The following table shows the number of samples examined and tested for the year ended 30 June 1974 (examination of other categories of therapeutic goods is made by the National Biological Standards Laboratory):

State	*Number of samples*	
	Passed	*Failed*
New South Wales	44	1
Victoria	46	2
Queensland	—	—
South Australia	9	—
Western Australia	—	—
Tasmania	—	—

Therapeutic Goods Advisory Committee

The Therapeutic Goods Advisory Committee held its first meeting on 5 February 1974. The Committee was established under the provisions of the Therapeutic Goods Regulations to advise the Minister on matters relating to the administration of the *Therapeutic Goods Act* (Section 29 excepted), the standards applicable to any goods for therapeutic use, and the requirements for labelling and packaging applicable to any such goods, insofar as those standards or requirements relate to the manufacture, distribution or use of the goods.

The Committee comprises representatives from the medical, veterinary and pharmaceutical professions, and from the pharmaceutical and veterinary manufacturing industries.

In practice, the Committee's main function is to advise the Minister on standards recommended by the Therapeutic Goods Standards Committee. Whereas the Standards Committee comprises scientific and medical experts who are expected to furnish impartial advice on scientific matters, in the public interest and independent of sectional interests, the Advisory Committee consists of representatives of all main groups using and trading in therapeutic goods. It will provide an opportunity for all parties and sectional interests affected in their professional and commercial activities by standards to be proclaimed by Ministerial Order, to put their views before the Minister regarding the implications to their group.

The Standards Committee has met regularly since August 1972, and a large number of standards is approaching finality. In future there should be a continuous flow of approved draft standards recommended by the Committee. As a result, it is anticipated that the Advisory Committee will now meet regularly to consider them.

The first meeting of the Advisory Committee was concerned primarily with matters of policy and procedure. Particular attention was given to the proposed methods and timing of advice of the intention to submit a draft standard to the Standards Committee, and of the manner in which interested individuals or groups would be given the opportunity to comment on the drafts during their preparation and subsequent consideration.

It was agreed that consultations should be comprehensive in scope but not unduly delayed. Thus all interested parties would be provided with the opportunity to comment on proposed standards. The preparation of a standard would progress through a number of sequential steps with appropriate consultations at each step.

The initial consultations are to be informal or non-representative, with an individual expert or individuals able to reflect the likely views of a group. Later consultations in the sequence are to be formal, with representatives of particular groups or organisations. This concept permits reasonable progress to be made in the early stages of formulating a standard, without having to refer tentative proposals to large diffuse bodies before fairly definite proposals are worked out. The later, formal consultations are expected to be fully representative of the views of the organisations or groups involved.

In order to achieve the widest public consideration of approved draft standards, it was decided to insert notices in appropriate publications stating that a standard was under consideration by the Standards Committee; that copies were available on request; and that comments were requested from interested individuals and representative bodies. It was agreed that announcements should be limited to journals published at intervals of no longer than one month and, on that basis, the Committee selected the *Australian Govern-*

ment Gazette (all standards), the *Medical Journal of Australia* (therapeutic goods for human use), the *Australian Journal of Pharmacy* and the *New Zealand Journal of Pharmacy* (therapeutic goods which are pharmaceuticals), the *Australian Veterinary Journal* and the *Council Newsletter of the Australian Institute of Agricultural Science* (therapeutic goods for veterinary use) and the *Proceedings of the Royal Australian Chemical Institute* (when the standard involves chemical analysis).

Drug Evaluation Section

The new Drug Evaluation Section created in the reorganisation of the Therapeutics Division has been established as a purely technical group, with administrative servicing to be provided by the Therapeutic Goods Branch.

As stated earlier, the Section will undertake evaluations of drug submissions for clinical trial or marketing. An early priority will be to make decisions on clinical trial applications so that related research work in Australian institutions is not delayed longer than necessary. Other areas of high priority are those concerned with the educational efforts of the Department, particularly the publication of a drug information journal, *The Australian Prescriber*.

In order to achieve these aims, the Department will be recruiting pharmacologists, medical officers and advisors in clinical pharmacology, both from within and without the Public Service.

Drugs of Dependence

The National Drug Education Program completed its third full year of operation during 1973-74, a year which saw an expansion of the program to cover projects involving people who are not easy to reach through organised community groups—for example, apprentices and suburban housewives. The program also increased its contacts with overseas bodies involved in drug education.

To facilitate the widening of the program's scope, the Drug Education Sub-committee was reconstituted during the year to include non-governmental education and management experts as well as State health representatives. The new Sub-committee has stressed the importance of evaluating drug education activities within the national program, and has set up an assessment team to implement a full-scale nation-wide evaluation.

During the year, two films were completed for the National Drug Information Service and introduced into the program. One, entitled *Maybe Tomorrow*, depicts the case history of a middle-aged woman with a drug-taking problem, while *The Road To Charlie* is an animated film dealing with the problems of growing up and the pressures brought to bear on a teenager by his parents and his peers. Copies of both films were made available to the library of the United Nations Division of Narcotic Drugs in Geneva, following expressions of interest from several countries in films produced for the Australian program.

The National Drug Information Service also continued publication of the *Technical Information Bulletin* which covers current local and overseas developments in the field of drug dependence, and the circulation was raised from 4,000 to 6,000. The U.N. Division of Narcotic Drugs also expressed interest in publishing articles from the Bulletin in its *Information Letter* and in maintaining liaison with the service.

Scenes from two new films completed during the year for the National Drug Information Service. Above, actress Carole Skinner as a middle-aged woman with a drug-taking problem in Maybe Tomorrow*; at right, the cartoon hero of* The Road to Charlie*, an animated film dealing with the problems of growing up.*

In February 1974, an officer from the Drugs of Dependence Section, together with officers from the Departments of Customs and Excise and Foreign Affairs, represented Australia at the third special session of the U.N. Commission on Narcotic Drugs, held in Geneva.

The Drugs of Dependence Monitoring System, which utilises the Department's computer facilities, is now in its fifth year of operation. Information on imports, exports, manufacture, formulation and sales down to the ingoing retail level of narcotics, amphetamine and similar central nervous system stimulants, is provided to State Health Departments and the Department of Customs and Excise. The system has proved effective in minimising the risks of lawfully produced drugs being diverted to illicit use.

A procedure which will allow an accurate analysis of production by firms engaged in manufacture and formulation was incorporated into the system on 1 January 1974. Wastage factors are now accurately determined.

Medical and surgical aids and appliances

During 1973, a working party was established to examine the existing situation concerning the provision of medical and surgical aids and appliances to those who need them and, where appropriate, to make recommendations on alternative forms of assistance which might be more satisfactory. The working party comprises senior officers of the Department, together with representatives from the Departments of Social Security and Repatriation.

Proposals made by the working party to provide artificial limbs free of charge to those who need them, and to abolish the $10 hiring charge and provide free batteries for pensioners supplied with hearing aids by the National Acoustic Laboratories, were implemented by the Government during the year.

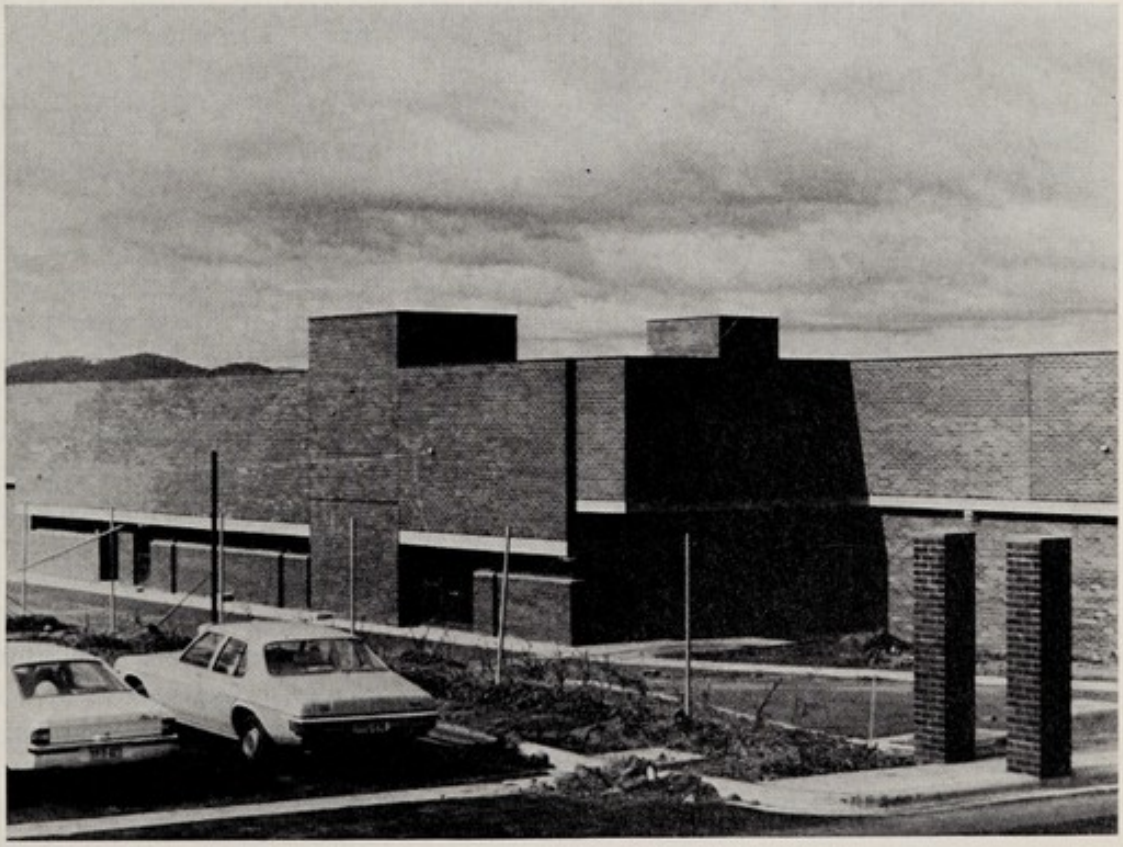
Reports have also been prepared on the provision of hearing aids, spectacles, ostomy appliances and home dialysis equipment, while investigations are under way into the provision of a number of other aids and appliances, including insulin syringes, oxygen equipment, medical wigs and electronic larynxes. The provision of most other aids and appliances will be investigated as resources permit.

National Biological Standards Laboratory

The development of Australian standards for therapeutic goods was again the most important component in the work of the National Biological Standards Laboratory during 1973-74. The deployment of the Laboratory's resources in this work slightly reduced the volume of product-testing completed during the year.

A procedure for achieving a consensus about standards was developed. This is intended to provide an opportunity for all interests—public, professional and industrial—to scrutinise proposed standards and, if possible, suggest improvements.

A program of priorities was drawn up by the Laboratory and approved by the two relevant statutory committees. The early development of standards is undertaken by N.B.S.L., assisted by external, individual experts if these are available. The draft standard and supporting documentation are



The Brucella Vaccine Testing Laboratory, now nearing completion in Canberra. The Laboratory, to be used primarily to check the quality and potency of vaccines used against the stock disease brucellosis, will be one of the most sophisticated high security laboratories in Australia. It is due to open in 1974-75.

then considered and, if necessary, modified by the Therapeutic Goods Standards Committee. This Committee may (and frequently does) appoint sub-committees and working parties serviced by N.B.S.L. officers to examine the more complex problems.

Ultimately the full committee approves the draft standard so prepared for notification and circulation. Notification that copies of a standard under consideration are available to interested parties for comment appear in the *Australian Government Gazette* and appropriate scientific journals. The essence of comments received by the nominated closing date is presented to the Therapeutic Goods Standards Committee for consideration.

Subsequently, the National Therapeutic Goods Committee (composed of State and Federal officers) examines the standard with a view to its incorporation in State legislation. At this stage, the standard is prepared in legal format for presentation to the Therapeutic Goods Advisory Committee—a body representing industrial and professional interests affected by standards.

A Draft Ministerial Order and recommendations are then forwarded to the Minister for Health for approval. Copies are distributed to National Therapeutic Goods Committee members and State Health or Agriculture Departments, as appropriate. Concurring State Departments are formally requested to implement the Order. Orders made by the Minister for Health become effective on the date of notification in the *Australian Government Gazette*, or a subsequent specified date. Copies of Orders will be available from the Australian Government Publishing Service.

In other highlights of the year's work, the Brucella Vaccine Testing Laboratory being built in the Canberra suburb of Narrabundah neared completion, and was to be ready for acceptance testing early in the new financial year. A revised design brief for a permanent N.B.S.L. building to be constructed on the same site was completed, and sketch plans and preliminary estimates are being prepared by the Department of Housing and Construction.

Inspection unit

Joint inspections of pharmaceutical companies by Federal and State officers continued in all States. The Health Commission of New South Wales has begun to issue licences to manufacturers under the provisions of the N.S.W. *Therapeutic Goods and Cosmetics Act* 1972, and consequently most inspections were made in that State. Of 215 inspections to assess compliance with the Australian Code of Good Manufacturing Practice, 180 were carried out in New South Wales.

As in previous years, the inspection team continued to advise companies regarding the acceptability of new buildings or alterations to premises from the viewpoint of good manufacturing practice. Ten companies consulted with the inspection unit during the year. The Chief Inspector assisted a committee of the Standards Association of Australia to prepare specifications for clean rooms, clean work stations and controlled environments.

There is increased compliance by manufacturers with the Code of Good Manufacturing Practice, particularly in relation to the manufacture of sterile goods. However, manufacturers will be required in the future to prepare more precise and detailed instructions for staff carrying out manufacturing processes. There is also a need for better raw materials control and more complete testing of products prior to release.

Inspectors took part in several meetings with industrial and hospital personnel to discuss manufacturing practices. Assistance was given to representatives of the cosmetic industry who prepared a voluntary code of practices applicable to the industry.

Antibiotics Section

The testing of antibiotic products continued at a much lower level because of staff shortages and other problems. However, the provision of a projects and investigation unit within the Antibiotics Section enabled work to begin on many technical assay problems which had been held in abeyance for some time. The recruitment from overseas of an officer with expertise in the assay of antibiotics was of considerable advantage to the unit.

Work continued on the development of standards for antibiotic products and the first Australian antibiotic standard for preparations of tetracycline capsules is being finalised. Sterility testing on behalf of other sections of the Laboratory also continued and work was begun on updating and modernising the whole of the sterility testing unit.

Bacterial Products Section

As noted in last year's report, many of the official test methods specified for bacterial vaccines and antigens are in need of revision. A program of research into alternative methods is now under way, and occupies approximately one half of the effort of the Laboratory.

A major problem associated with the biological assays of vaccines is the inherent variability of responses of individual animals to a given treatment. Such variation contributes to lack of precision in the estimation of vaccine potencies. In one approach to the improvement of assays, strains of inbred mice, and hybrids derived from these by cross-breeding, are being investigated in an attempt to reduce the variability of assays involving the use of mice.

The upward trend in the quality of clostridial vaccines which was noted last year has continued, and follows the restrictions imposed by the Department on the importation and release of vaccines for sale. This was made contingent on the provision of proper records of manufacture and the compliance of batches of vaccine with minimum standards for potency and safety.

Work directed towards the improvement of testing methods for clostridial and swine erysipelothrix vaccines continued. An essential corollary to the improvement of testing methods is the provision of reference vaccines or toxoids. Work on the development of a reference tetanus toxoid is proceeding, and a batch of 1200 vials of a freeze-dried vaccine has been set aside for this purpose. Collaborative assays with the Commonwealth Serum Laboratories will begin shortly to assign a potency to this reference preparation.

Pharmaceuticals for topical application and oral ingestion are generally not required to be sterile. However, experience has shown that there should be some limits on the number and type of micro-organisms permissible. A survey to detect microbial contamination in non-sterile pharmaceuticals began in 1973 and continued throughout the year. So far results have been encouraging, but another six months will be needed to complete the work on a sufficiently large and representative sample of such goods.

Animal Breeding Section

The provision of disease-free animals for use in bio-assays has been of major concern for some time and the appointment of a veterinary officer during the year to head the Animal Breeding Section was a major step forward. Animals bred under conventional conditions frequently have sub-clinical infections. Such infections not only upset sampling programs but can lead to increased assay errors. Consequently, much of the work of the new Officer-in-Charge has been directed towards the development of control methods to ensure that animals bred under conventional conditions are as healthy as possible.

Development of methods for the breeding and maintenance of SPF guinea pigs in isolators is well advanced, in preparation for their full-scale production in isolators in the new Brucella Vaccine Testing Laboratory. The Duncan Hartley/Olac strain of guinea pig is now used exclusively.

Considerable difficulty has been experienced over the years in obtaining staff trained in animal care. Through the co-operation of the Canberra Technical College in maintaining the animal care course, and the inclusion in the biological research technicians' course of one full term on animal care, it should be possible in future to have a reasonable supply of well-trained animal care technicians.

A limited program of developmental work was carried out, and a vaccine to control the pneumonia which is produced in guinea pigs by *Bordetalla bronchiseptica* was developed. A suitable ration for guinea pigs with special nutritional requirements was also developed. The provision of new and larger temporary accommodation for the Section in the forthcoming year will permit other problems to be tackled.

Pharmacology Section

The Pharmacology Section is divided into two sub-sections, one of them concerned with the quality control of new and marketed drugs which require pharmacological testing, and the other with evaluation of new drugs in respect of their pharmacological properties and safety.

Much of the work carried out in the quality control sub-section is of a routine nature and is performed as a service to other sections of the Laboratory. In the past year, this involved the testing of many preparations of antibiotics and intravenous fluids for acute toxicity, pyrogens and histamine-like substances. In addition, a sampling program was maintained so that marketed products of biological origin such as hormones and enzymes were tested regularly for compliance to pharmacopoeial or other standards in respect of potency, purity and safety under the Therapeutic Goods Act.

Another function of this expanding sub-section is the review of manufacture and quality control on those drugs to be imported which would normally require biological testing in the Section. The increase in the numbers of such submissions (as reported last year) was again maintained, to the extent that the issuing of reports within an acceptable time proved to be impossible in many cases owing to the pressure of other work.

During the year, considerable effort was devoted to the development of new testing techniques and the improvement of existing ones, particularly those applied to non-official drugs. The need for such testing has generally arisen from the review of quality control data carried out prior to importation. It is anticipated that much of this work will contribute to the preparation of Australian standards, and thus will continue into the future.

Useful advances were made in some of the techniques developed and employed by the Section. For example, new methods are now in routine use for the *in vivo* assay of heparin and protamine. These procedures are considered to have considerable advantages in overcoming the theoretical and practical problems of presently used pharmacopoeial *in vitro* systems, and are being prepared for publication. Radioimmunoassay is also being incorporated into the routine functioning of the Laboratory. This technique is currently being used to study the bio-availability of digoxin tablets available on the Australian market, in collaboration with the Therapeutic Goods Branch of the Department.

The work of drug evaluation is considered to be the most important function of the Section. The evaluation of animal data supplied by companies wishing to import new drugs for clinical trial or marketing is complementary to the work carried out by clinical evaluators in the Therapeutic Goods Branch, and close liaison with the Branch is maintained to ensure that, as far as possible, the two types of evaluation are carried out concurrently.

The number of new drug submissions received for evaluation by the Section during the past year was comparable with the previous one. The work load in this area is such that prolonged delays are experienced by drug companies in the approval of their submissions. Steps to alleviate the problem have been instigated but no improvement can be anticipated in the near future.

Pharmaceutical Chemistry Section

Research directed towards the preparation of standards again represented an important part of the work of the Pharmaceutical Chemistry Section. The study last year of uniformity of tablet weights was followed during the current year by a detailed statistical survey of capsule weights. A new standard has been proposed as a result of this survey.

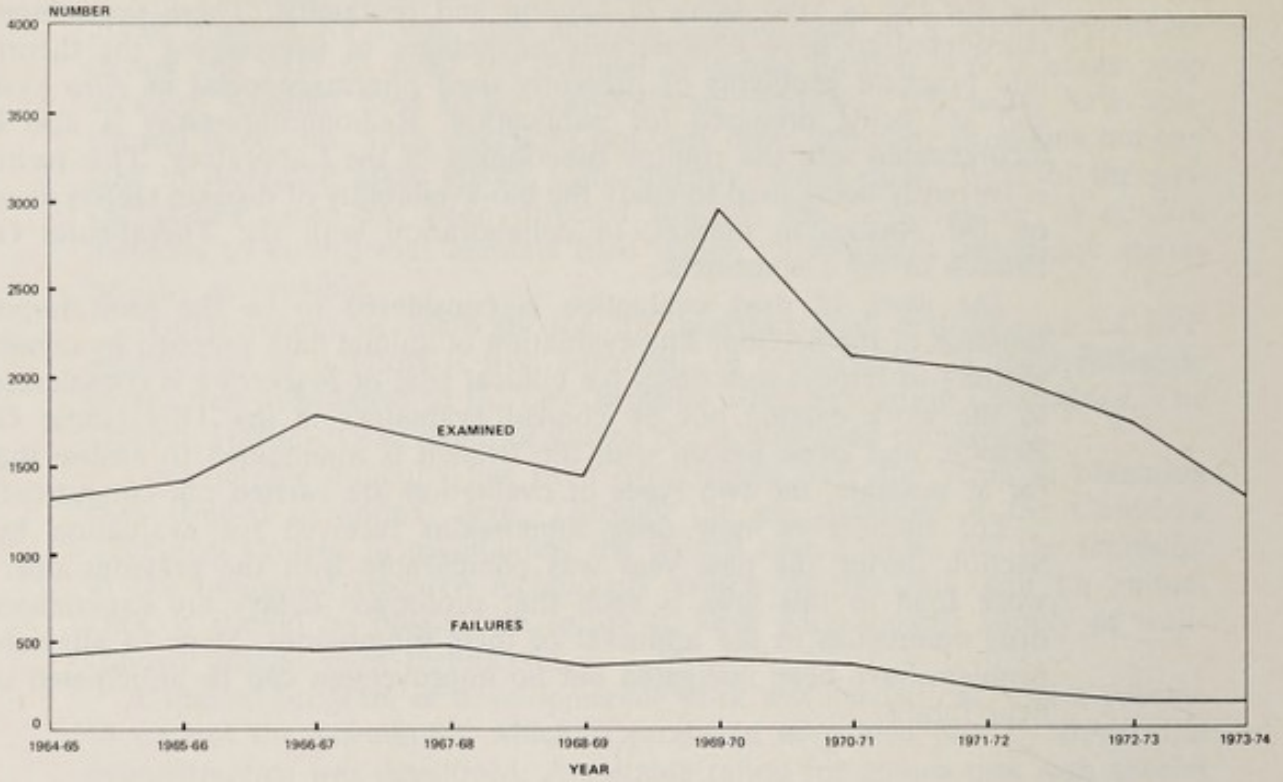
For a number of years, the study of particulate matter in injections has been a special interest of the Laboratory. The Section has been using an automatic particle counter based on the light blockage principle, but because of deficiencies in the commercial equipment, a new form of particle sensor head has been designed and is now being evaluated. A survey has been made of the particulate matter contributed to injections by hypodermic syringes.

Mention was made last year of the compilation of a file of official or generic names of drugs. This has now reached a point where it is almost ready for issue as a schedule of Australian Approved Names, to accompany the proposed Standard for Labelling of Therapeutic Goods. The list will be updated at regular intervals, with a computer being used for editing. The computer file will also facilitate the preparation of other schedules for use in standards, such as lists of drugs subject to expiry dating.

A study of analytical and other problems associated with metered aerosols has led to the preparation of a draft standard. As with many other standards, the preparation and progressive refinement of the standard has involved the staff in a considerable amount of consultation with industry, especially through working parties set up for the purpose.

The most important project during the year, however, was a survey of content uniformity and dissolution of digoxin tablets. It has been found recently that in several overseas countries, especially the United Kingdom and U.S.A., some brands of digoxin tablets have been seriously deficient in bio-availability. One published survey indicated that some products on

SUMMARY OF ALL SAMPLES—EXAMINATIONS AND FAILURES—
1964–65 TO 1973–74



The volume of product testing by the National Biological Standards Laboratory declined slightly during the year because of the heavy workload in developing standards for therapeutic goods. The percentage of failures increased slightly.

the Australian market were inadequate, but a comprehensive study of all the products available in Australia was clearly needed to indicate the magnitude of the problem.

The N.B.S.L. study involved the determination of digoxin content in each of 100 tablets of all the brands available, together with a study of the dissolution behaviour. Approximately 2500 assays were carried out as well as investigations into methods of assay. It was found that the best Australian products were comparable to the best available overseas, but that some of the products were inadequate in uniformity of dose between tablets, or gave rise to dissolution rates slow enough to suggest that only a fraction of the digoxin present would be readily available to a patient. New standards were proposed to cover both content uniformity and dissolution behaviour, and these will be issued in the first instance as amendments to the B.P. monograph for digoxin tablets.

Work on high pressure liquid chromatography, a relatively new and powerful analytical tool, was directed mainly to developing methods for analysis, on a single-tablet basis, of oral contraceptives. Satisfactory methods have already been worked out for many of the available products, and it is hoped to provide rapid and reliable methods for content uniformity of all products on the market in the near future.

The techniques of high pressure liquid chromatography were also applied to the problem of determining specifically the amount of digoxin present in individual digoxin tablets. Digoxin is an extremely difficult substance to determine, particularly in the very small amounts in which it is present in

digoxin tablet preparations. A successful high pressure liquid chromatographic method of analysis could be superior to present analytical methods. This work is still in progress.

The number of complaints received decreased from the previous year. Thirty-seven required detailed evaluation of official samples. For the most part, the complaints were due to deterioration and improper storage of the particular preparations.

Evaluation of the chemistry and quality control aspects of new drug applications and pharmaceutical products for listing as pharmaceutical benefits continued to be a major function of the work of the Section.

Viral Products Section

The testing of vaccines and the examination of protocols continued during the year at an increased level, reflecting the advent of new vaccines and new techniques for their testing, notably in the field of veterinary vaccines. Seventeen vaccines are regularly checked in the Viral Products Section and a number of new products for the control of virus infections are evaluated every year.

Work on the development of new methods and techniques for testing avian virus vaccines increased considerably, forming a major part of the Section's activities. This arose from the expanded program of development of draft standards for vaccines for which no official standards exist, or for which existing standards are unsatisfactory. New systems of testing also had to be devised to solve problems which arise with the appearance of new, or of previously unrecognised, pathogens such as some adenoviruses and bursal agents. Changing patterns of disease increase the importance of ensuring that vaccines are free of all microbial contaminants.

It is possible to detect certain viral contaminants of avian vaccines, most notably the avian leucosis, Marek's Disease, avian encephalomyelitis viruses, and adenoviruses, only if a flock which is free of these agents is available as a source of susceptible birds, eggs and tissues for use in testing. The Section therefore undertook to develop a specific pathogen-free (SPF) flock by screening local flocks and selecting suitable birds for breeding in specially constructed isolators. This has now been accomplished, and two small flocks which are free of detectable leucosis viruses and of some other agents have been established. Birds which are susceptible to the strains of avian leucosis virus present in Australia are now being selected from the progeny of one of these flocks as a further stage in development.

A further use for SPF eggs is in the freezing of vaccines and reference virus suspensions from a variety of contaminant viruses, such as those of the leucosis group. Eggs produced by the two SPF flocks are being used for this purpose.

Progress was also made towards the production of Australian reference preparations of some viruses, a number of which are required to meet proposed Australian standards. One such preparation, a vaccine strain of measles virus, is being cultured in SPF chicken embryo cells.

Influenza vaccines have come under more intense study as a result of the initial steps being taken to prepare an Australian standard for inactivated vaccines. Some of the problems associated with the control of these vaccines, especially in relation to the process of dissociation of the virus which gives rise to antigenic sub-units, are being studied. New methods for assaying

the amounts of antigens present in a vaccine, and methods for controlling bacterial contamination during vaccine manufacture, are also being studied.

A new method for the assay of potency of Yellow Fever vaccine by plaque counting was developed and applied to a number of samples. It is quicker, cheaper and more accurate than the mouse infectivity determination currently required, and is part of the Laboratory's contribution to an international study of improved methods for the potency assay of Yellow Fever vaccine, which is currently in progress. A similar method of assaying live measles vaccine, previously assayed by a quantal method, is now under study.

Pharmacy Earnings and Projects Branch

The Pharmacy Earnings and Projects Branch is a new branch formed during the year within the Management Services Division. It has brought together under the one administrative cover functions previously performed in separate areas of the Division. These functions are assigned to three Sections within the Branch—Pharmacy Enquiry, Projects and Commissions Secretariat.

Pharmacy Enquiry Section

The Pharmacy Enquiry Section is responsible for the planning and implementation of the enquiry into pharmacy earnings, costs and profits being conducted under the auspices of the Joint Committee on Pharmaceutical Benefits Pricing Arrangements. This enquiry, covering the 1972-73 year, is designed to provide factual information which will assist the Joint Committee in making its recommendation on dispensing fees to the Minister. The Section provides the Secretariat to the Joint Committee for the purposes of the enquiry.

More than 200 pharmacies throughout Australia are participating in the enquiry. The Central Statistical Unit of the Department selected the pharmacies by statistical method to ensure the validity of the results from a sampling viewpoint. A feature of the design is an 'activity sample' providing for measurements of the times spent by different types of pharmacy staff on each of a number of activities which, between them, encompass the range of activities encountered in pharmacy.

A team of two observers, one representing the Pharmacy Guild and the other a Departmental pharmacist, visited each pharmacy selected in the activity sample for the whole of one trading day to record their observations. These records, supplemented by other information collected in the enquiry, will permit calculation of the division of labour costs between the dispensing and retail sectors of pharmacy. When all the data sought by the enquiry is received, final processing will be performed by the Department's computer.

Under the agreement between the Government and the Pharmacy Guild, similar enquiries can be called for by either party at intervals of not less than three years. Pending completion of the present enquiry, the Government agreed to provide an interim updating of fees for dispensing pharmaceutical benefits, and another function of the Pharmacy Enquiry Section has been to perform the calculations associated with this updating.

Projects Section

The Projects Section is responsible for carrying out projects of a non-routine nature relating to subjects which either fall outside the specific

areas of responsibility of functional branches at the Central Office of the Department, or where the resources of particular branches require special augmentation. The range of subjects falling within this category is very wide, and the provision of facilities for dealing with this type of project without disturbing the normal workflow of functional branches will contribute to the smooth working of Central Office.

An example of the type of work undertaken has been participation with the National Acoustic Laboratories in negotiations for a licensing arrangement covering an ultrasonic echoscope developed by the Laboratories, and over which the Australian Government holds patent rights.

Commissions Secretariat Section

The Commissions Secretariat Section provides liaison facilities for the Minister and the Commonwealth Serum Laboratories Commission in all aspects of the Commission's operations within the provisions of the *Commonwealth Serum Laboratories Act* 1961-73. In addition, the Section assists in assessing and programming the ordering of the Government's requirements for rubella, measles and poliomyelitis vaccines presently being used in the nation-wide immunisation campaigns.

Other activities

The Pharmacy Earnings and Projects Branch has also provided administrative services in connection with activities associated with the proposed establishment of an Australian Pharmaceutical Corporation to acquire one or more pharmaceutical firms. In October 1973, the Minister announced the establishment of an Interim Committee for Production of Pharmaceutical Products to carry out preliminary planning for the Corporation. The Branch has been assisting the full-time member of the Interim Committee in this work.

During the year, the Australian Industry Development Corporation was active in investigating companies which may be suitable for acquisition for the Pharmaceutical Corporation or the Interim Committee. Liaison is being maintained with A.I.D.C., but no decision has yet been made on acquisition of any firms.

Aboriginal Health

The appointment of a number of senior officers during the year enabled the Aboriginal Health Branch to develop an embryo administrative structure and to expand its operations within the Department's Public Health Division.

The Branch's principal function is to advise on and co-ordinate activities and new initiatives taken by Government health authorities and voluntary organisations throughout Australia for the improvement of Aboriginal health. The Branch also provides a central point for the collection and dissemination of information relating to the health of Aborigines.

Present responsibility

As explained in last year's Report, present responsibility for Aboriginal health care belongs to a variety of bodies—Departments of Health, Aboriginal Affairs and Welfare in both Federal and State spheres, statutory commissions, and a variety of smaller non-profit organisations, some of which are associated with academic institutions.

The Australian Government is directly responsible, through this Department, for the provision of health services in the Northern Territory, including health matters on Government Aboriginal settlements and pastoral property communities, as well as in the Australian Capital Territory and Norfolk Island. In recent years the Government and the Northern Territory Legislative Council have been active in progressively removing all discriminatory legislation from the relevant Acts and Ordinances (for this reason it should be noted that existing forms of health and welfare benefits and assistance received by the Aborigines are no longer readily identifiable).

Present policy

The Australian Government is deeply committed to helping the Aborigines to achieve equal rights and opportunities with all other Australians and to share fully in Australian community life, while at the same time preserving and developing their distinctive culture, language, traditions and arts. Government policies are based broadly on the view that it is neither necessary nor desirable to seek the disappearance of indigenous traditions or to bring pressure on indigenous groups to abandon their culture, but that discrimination should be eliminated, barriers to communication between ethnic groups should be removed, and special programs of assistance should be undertaken.

Positive steps have already been taken to encourage a degree of autonomy, greater responsibility and self-determination in Aboriginal groups and communities. High priority is being given to the development of new initiatives to alleviate the problems of Aboriginal health throughout Australia. The Government has also emphasised its concern about the urgent need to improve permanently the standard of health of all Aboriginal people, and not just those in the Federal Territories.

The National Plan

In March 1973, the Minister for Health approved a National Plan which required this Department to launch an immediate campaign to raise the standard of health of the Aborigines to the levels enjoyed by their fellow Australians.

The campaign is being planned and co-ordinated in stages with the Government aiming to achieve its goal at the end of ten years. In particular, it is intended to lower the infant and child mortality and morbidity rates; improve the state of infant and child nutrition; eliminate growth retardation; and eradicate infectious and chronic diseases including leprosy, trachoma, tuberculosis, gastro-enteritis, and respiratory and ear conditions.

The implementation of the National Plan is now being worked out in close liaison with other interested departments, authorities and organisations. These include the Australian Government Departments of Aboriginal Affairs, Social Security and Education, State authorities, expert advisory bodies, the National Aboriginal Consultative Congress and other interested parties.

The expansion of existing health services in Aboriginal communities and the development of proposed new ones is being affected at present by the

An Aboriginal nursing sister attends to a patient at the Aboriginal Medical Service in Redfern, Sydney. The Department arranged a national meeting of representatives of Aboriginal medical services during the year to discuss common problems and their solutions.

Aboriginal girls from the Kimberley district of Western Australia training as nursing aides and nursing assistants at the Derby District Hospital. The Department evaluates proposals from the States for grants for training programs like these, and for other health services for Aborigines. The grants are then made through the Department of Aboriginal Affairs.

acute shortage of health workers, particularly community health nurses and Aboriginal health workers, throughout Australia. Training and recruitment activities to overcome this problem are being encouraged.

Study Group on Aboriginal health

The Council for Aboriginal Affairs sponsored the formation of a Federal/State Study Group which consists of doctors responsible for Aboriginal health care in the States and Territories, together with expert advisers from the Australian Departments of Aboriginal Affairs and Health. Included in the membership are two Aborigines with experience in health work.

The Study Group has met twice, and has made a number of long-term policy recommendations on ways and means of improving Aboriginal health to serve as guidelines for future action in provision of health services. A special working party on health manpower has been established by the Study Group to launch an intensive recruitment campaign for trained health personnel to serve in Aboriginal communities.

Aboriginal health services

Aboriginal community health services are established in Brisbane, Sydney, Melbourne and Perth. Financial assistance is provided by the Australian Department of Aboriginal Affairs after consultation with the Aboriginal Health Branch of this Department.

Proposed Aboriginal health services in Townsville and Mareeba in Queensland and Bairnsdale, Victoria, are likely to be established during 1974. The

growth and expansion of these services will largely depend on the initiatives taken by Aboriginal community groups in putting forward submissions for the establishment of their own health services to meet the special needs of the local community.

At a meeting of representatives from Aboriginal medical services held in August 1973, it was recommended that a Workshop on Aboriginal Medical Services be planned. The objectives of the Workshop are to gain a better understanding of the views of Aboriginal people on the operation of existing Aboriginal medical services and to provide for discussion on the desirability of the development of similar services in other areas of Aboriginal population. It is also proposed to discuss the development of programs for training Aboriginal health workers and the role which Aborigines can play in training programs.

N.H. & M.R.C. Committee

The National Health and Medical Research Council has established a Health of Aborigines Standing Committee as a national advisory body to assist the Australian and State Governments in the task of improving Aboriginal health. The committee has nineteen members, including five from the Aboriginal community. The committee has a small expert sub-committee which advises on research into aspects of Aboriginal health. During the year, a number of research projects on malnutrition, immune response, and infection in Aborigines were approved.

Aboriginal Health Research Workshop

A workshop was held on 9-10 November 1973 in Canberra with the objective of carrying out a general review of health research involving studies of Aborigines, and an examination of the means by which such research could be better co-ordinated. Methods were proposed for defining research problems still awaiting solution, and a list of priorities was determined on major areas requiring urgent attention. Indications were given on ways and means by which research resources of Australia could be mobilised more effectively for improvement of health in Aboriginal communities.

Assistance to State health authorities

Financial grants, recommended by the Branch and made through the Department of Aboriginal Affairs, were greatly increased in 1973-74. These grants enable the States to improve the quality, range and distribution of health care available to Aboriginal people. Details of financial assistance to the States and voluntary organisations are shown in the annual report of the Department of Aboriginal Affairs.

Northern Territory program

In the Northern Territory, the Department has developed a flexible two-tier health care delivery system to meet the health needs of the Aboriginal people. The first tier is based on rural health centres which provide primary clinical care and public health services. These are linked to the second tier, the regional and district hospitals, by the Aerial Medical Service which

provides a visiting service of skilled medical staff. These services will continue to be developed to meet the emerging health needs of the Aboriginal people. The Northern Territory Medical Service is covered in detail in another section.

A program for the training of Aboriginal health workers has been developed to enable traditional healers to be employed as members of health teams in several Aboriginal communities in the Territory.

Survey of the present situation

The Aboriginal Health Branch is preparing a booklet on the current health situation of Aborigines, and an outline of the approved guidelines for the development and implementation of the National Plan for the improvement of Aboriginal health.

Environmental Health

As part of the Department's re-organisation during the year, an Environmental Health Branch was established within the Public Health Division. The Branch has the responsibility for advising on a number of aspects of public health, including the effects of environmental pollution on man.

Its officers undertake research into the medical aspects of environmental, air, water and noise pollution and waste disposal; advise on water quality criteria, sanitation, dietary and nutritional matters and food standards; and evaluate the toxicity of poisons and pesticides. Preventive medicine is another area of the Branch's responsibility, particularly in relation to communicable diseases, their epidemiology, prevention and treatment, and the use of vaccines and antisera in prophylaxis. In addition, the Branch controls the export of blood and blood products, administers the smoking education campaign, and provides advice on traffic injury matters.

Environmental hygiene

The Environmental Hygiene Section (formerly the Environmental Health Section) expanded its activities to cover all areas of the environment which have health implications. The principal concerns of the Section are water, air and noise pollution, metallic contamination of the environment, and waste disposal.

A major function has been the provision of the secretariat for N.H. & M.R.C. committees, sub-committees and working parties concerned with environmental matters. There has been a marked increase in the number of such bodies over the past year, reflecting the increasing concern and involvement of the N.H. & M.R.C. in environmental hygiene. Council has established committees and working parties on environmental health, noise pollution, water pollution, air pollution, water quality, lead levels in air, metals in seafoods, and synthetic detergents. All are being serviced by the Section.

On the basis of investigations by officers of the Section, Council has made recommendations to appropriate authorities on a wide range of subjects including levels of motor vehicle emissions, the lead content of children's toys, levels of zinc and cadmium in seafoods, and the disposal of so-called disposable napkins. Council also published documents on lead glazes used by workshop and studio potters, and contamination of seafoods by cadmium and zinc.

The Section provided liaison for both the N.H. & M.R.C. and the Department with Federal and State departments, ministerial councils, interdepartmental committees and Standards Association of Australia committees concerned with the environment. Officers participated in the activities of the Committee on Motor Vehicle Emissions of the Australian Transport Advisory Council, the Committee of Advice on Ocean Dumping, Standards Association committees on air and water quality, the Technical Committee on Water

Quality and related working parties of the Australian Water Resources Council, and the co-ordinating Committee on Metals in Fish and Fish Products of the Australian Fisheries Council.

One Section officer is the medical director on the executive of the Australian national committee for the International Association on Water Pollution Research. This committee is organising the eighth international conference of the Association to be held in Sydney in 1976.

A further important function of the Section has been the provision of data for international organisations and briefs for Australian representatives attending meetings of bodies such as the World Health Organisation, the Organisation for Economic Co-operation and Development, and the United Nations Environment Program.

Communicable diseases

The Branch acts as an agency for the collection and dissemination of statistics on notifiable diseases in Australia.

Among diseases which showed an increase in incidence in 1973 were gonorrhoea and syphilis. Notifications of gonorrhoea increased from 11,037 cases the previous year to 11,337, while syphilis rose from 1,217 to 1,430 cases. The National Health and Medical Research Council (N.H. & M.R.C.) ad hoc Sub-committee on Venereal Diseases met for the first time in October 1973. It considered the question of uniform legislation, the preparation of publications for distribution to the public and to special groups, and the preparation of a handbook for general practitioners in the management and diagnosis of venereal diseases. The Sub-committee considered that emphasis should be laid on education, including information on the whereabouts of clinics, and also discussed the installation of mechanical dispensers of certain contraceptives. Other subjects considered were diagnostic and treatment facilities, Australian research on venereal diseases, microbiology of the diseases, and social aspects. These topics are to be studied at a further meeting.

Notifications of infective hepatitis showed a significant decline in 1973 with 4,358 cases compared with 6,118 in 1972. The incidence of serum hepatitis remained virtually unchanged with ninety-six notifications compared with ninety the previous year, but it is too soon to say whether the previous rising incidence has been halted.

Eighty-two cases of diphtheria were notified during the year, emphasising again the need for maintaining a high level of immunisation for infants and children. There were no cases of poliomyelitis.

Export of blood and blood products

The Customs (Prohibited Exports) Regulations, Sixth Schedule, give the Australian Government power to control the exportation of human blood, blood products, human organs and tissues—a role carried out by the Environmental Health Branch. The legislation also covers the export of pancreas glands of cattle and pigs, and serum produced from the blood of bovine animals.

Approaches for export approval are classified into categories such as requests by individuals, organisations or neighbouring countries, and aid to disaster areas. Where possible, annual or period export permits are granted, mainly to Divisional Red Cross Services, university medical research schools

and commercial firms dealing in animal by-products. Close contact is maintained with Customs officers and delegated authority has been granted to Directors of Health in the Department's Divisional Offices to expedite the release of rare blood donations. During the last twelve months, twenty-seven period permits and eighty-three individual approvals were granted by the Branch.

Officers are in constant touch with the Australian Red Cross Society and the Commonwealth Serum Laboratories, and represent the Department on the Executive and National Blood Transfusion Committees of the Red Cross Transfusion Service.

Family planning

Grants to the Family Planning Association of Australia and to a national body representing the Catholic Family Planning Centres were approved, following the Government's decision to extend financial support to family planning services. An additional grant was also approved for other voluntary organisations which are actively involved in the provision of family planning services but are unable to affiliate with either of the two major organisations.

Food standards

During the year, senior officers of the Branch attended international meetings of the joint FAO/WHO Food Standards Program as members of the Australian delegations to the Codex Alimentarius Commission's committees on food additives, food hygiene, food labelling, general principles and pesticide residues. They also attended the third joint FAO/WHO conference on food additives and contaminants.

The N.H. & M.R.C. approved the Food Standards Committee's recommendations for twenty-two amendments to Council-approved model food standards.

The Food Microbiology Sub-committee of the N.H. & M.R.C. conducted a pilot survey on the microbiological status of ready-to-eat 'take-away' foods. This will be used as a guide to an extensive three-year survey to be undertaken by the State Health Department laboratories of New South Wales, Queensland and Western Australia, and the microbiology laboratory at the School of Public Health and Tropical Medicine. The survey will examine the microbiological status of take-away foods which are suspected to be a public health risk. The results will be used to elaborate microbiological standards and/or codes of hygienic practice, where they are shown to be necessary.

Health advertising

The Director-General of Health has the responsibility, under the *Broadcasting and Television Act* 1942-71, for approving advertisements on radio and television for proprietary medicines, and for approving the text of talks on medical subjects. To assist the media in the preparation of scripts, a *Guide to Advertising of Proprietary Medicines and Therapeutic Appliances* is available.

The total number of scripts submitted for approval during the year again fell in comparison with the previous twelve-month period. Details of approvals for the past five years are given in the statistical appendix.

National Poisons Service

The National Poisons Service continued to develop guidelines for the prevention and treatment of poisoning.

The Service is responsible for the publication of the *National Poisons Register Manual*, which has become a major reference publication for doctors and hospitals. The manual, which includes monographs on toxic substances and the toxic aspects of commonly-used chemical preparations, is distributed to State and Territory health authorities for further distribution at their discretion.

The number of entries being made in the Manual is increasing and alternative formats and methods of handling data are being examined.

The Service receives reports of poisoning cases in Australia and analyses them to determine poisoning trends. New techniques of analysis are currently under consideration. For the calendar year 1973, 5,761 poisoning cases were reported to the Service, compared with 8,153 in 1972 and 7,995 in 1971. The reason for the decrease is currently being investigated.

Nutrition

The Nutrition Section again provided secretarial services and documentation for meetings of the Nutrition Committee of the N.H. & M.R.C. A working party of the Committee was established to enquire into the thiamine status of the Australian people and, if a problem is found to exist, to recommend remedial measures.

The Section has been closely connected with the 1973 interim pesticides residues survey and the further market basket survey of pesticide residues in the total diet which began in February 1974.

In the publications field, the Section completely revised the long-standing and popular brochure *Eat Better for Less*. It is now being reprinted. Two new brochures, *Guidelines for Meals-on-Wheels* and *Welcome to Meals-on-Wheels*, were prepared and have been approved for publication. During the year, the Section's bi-monthly publication *Food and Nutrition Notes and Reviews* completed its thirtieth year of continuous publication. At the present time, 4,500 copies are distributed throughout Australia, and a further 465 copies are sent to most countries of the world.

Pesticides and agricultural chemicals

Close liaison was maintained throughout the year with Government departments and industry concerned with pesticides and agricultural chemicals. In addition, the Branch was represented at meetings of various committees including the Technical Committee on Agricultural Chemicals, the Technical Committee on Veterinary Drugs, the Pesticides Sub-committee, and the Co-ordinating Committee on Pesticides convened by the Department of Agriculture. The Branch also serviced relevant committees of the N.H. & M.R.C.

During the year, the index record of pesticides and their synonyms was maintained on cards and machine tape, and the tape was used to print and publish the second edition of *Pesticides: Synonyms and Chemical Names*, containing over 4,000 names. Two issues of *Pesticides Review*, a journal containing abstracts of health aspects of pesticides, were prepared and published.

Pesticides Residue Survey

In May 1973, the N.H. & M.R.C. adopted a recommendation that a complete market basket survey should be planned for 1974. It was considered that sampling in the survey should be typical of average dietary habits to assess average intakes. Following discussions between officers of the Nutrition and Scientific Advisory Sections of the Branch, the Australian Government Analyst, and an officer of the Department of Agriculture, shopping lists were drawn up which were considered, on the best available information, to reflect the dietary habits of the Australian population.

The Australian Government Analyst has agreed to carry out analyses for dieldrin, hexachlorobenzene (HCB), mercury, lead, cadmium, zinc and copper, depending on the food groups involved. In addition, analyses will be carried out for dichlorvos in grains and cereals, together with a general screening for organo-chlorine residues. The survey began on 27 February 1974 and the period taken to be representative of the summer season was completed on 27 March 1974. All items are cooked at the Home Science Section of the East Sydney Technical College. As in previous surveys, sampling is being conducted in each State capital city.

A small-scale interim survey was completed on 1 November 1973. The full details of the levels of residues of HCB, dieldrin and mercury in selected foods, together with the results of the statistical analysis prepared by the Central Statistical Unit of the Department, are expected to be available soon.

Smoking and health

The National Warning Against Smoking Campaign, funded by an annual budget of $500,000, is now in its third year of operation. All State health authorities except Victoria continued to participate in the campaign throughout the past year, as well as the Anti-Cancer Council of Victoria and the Australian Council on Smoking and Health.

Extensive use was made of the media, with the publication of anti-smoking advertisements in national daily and Sunday newspapers and a number of national magazines. The program was aimed at the late thirties to early fifties age group, consisting of 'active parents' with young dependent families, and carried the message 'The life you ruin may not be your own'. Three anti-smoking posters are being printed for the Department as a back-up to this campaign for wide distribution throughout Australia.

The Department purchased and distributed to the States a variety of material for use in schools, including booklets on smoking, a reference book for children accompanied by a set of teachers' notes, and a tar extraction kit. Anti-smoking desk cards and stickers and T-shirt transfers for children are also being distributed as part of the campaign.

As co-ordinator of the campaign, the Department has distributed on request many thousands of anti-smoking booklets and leaflets, including *Why Don't Elephants Smoke?*, *Is It Worth the Risk?*, and a number of leaflets aimed at specific target groups. Throughout the year, the Department continued to receive a flood of letters and requests for literature from all parts of Australia and abroad. In addition to this encouraging indication of widespread public interest, it appears from the results of a survey recently commissioned by the Department that an increasing number of Australians regard smoking as a health hazard and are giving up the habit.

The co-ordinated approach to education adopted in the National Warning

Above are two of the posters, and below a selection of booklets, produced by the Department for the National Warning Against Smoking campaign. More than a million copies of the booklets have already been distributed throughout Australia, and there is still a heavy demand for them. The posters are part of a new set of educational materials which also includes stickers for children and desk cards, all with anti-smoking messages.

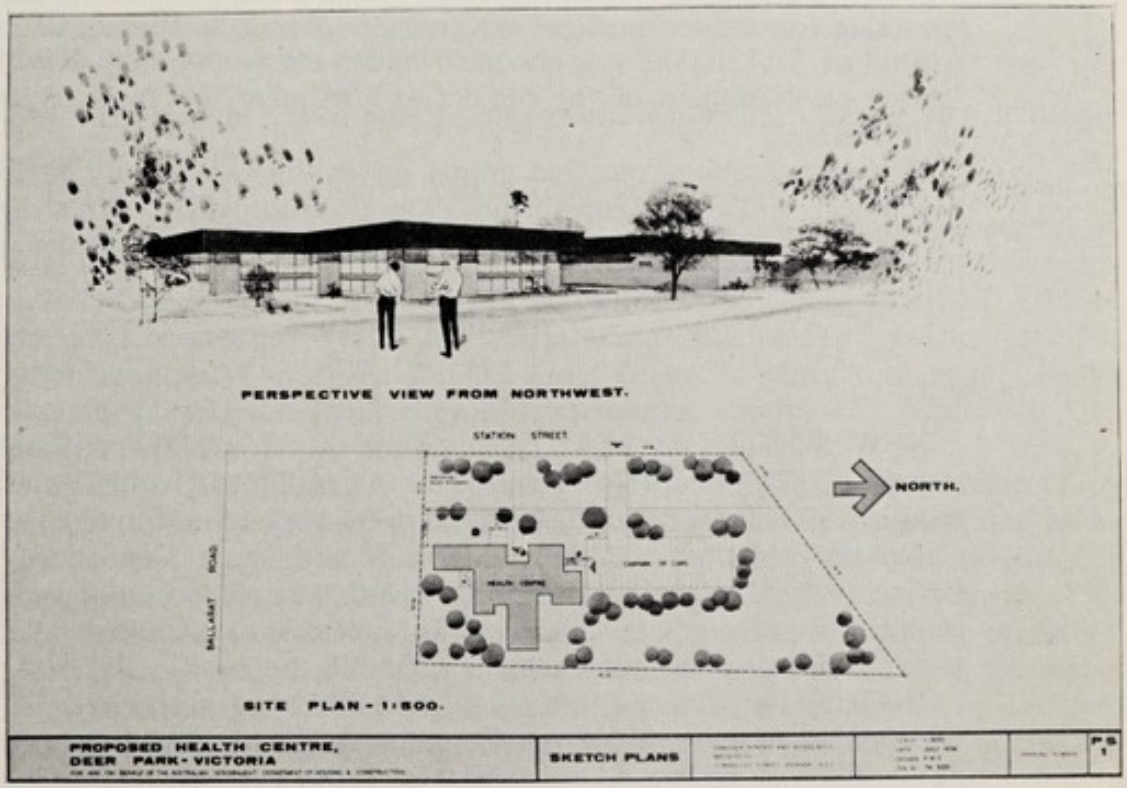
Against Smoking is considered to have successfully integrated smoking education programs throughout Australia. It is expected that this uniform national health education policy will continue in the coming year through further co-operation between the Australian Government and the States.

Community Health

The Community Health Branch was established during the year to undertake the implementation and administration of community health projects approved by the Minister on the recommendation of the Hospitals and Health Services Commission. The Branch also assessed community mental health, alcoholism and drug dependency proposals, and implemented and administered those approved by the Minister with the advice of the Director-General of Health.

Both the Community Health and the Community Mental Health, Alcoholism and Drug Dependency Programs were introduced by the Government to foster the development of a high standard of community-based health care services in co-operation with States, local government bodies, voluntary agencies and community groups.

The Branch maintained close and regular liaison with the Hospitals and Health Services Commission. It also liaised with State Health authorities, with voluntary agencies and with community groups operating in the community health field.



Sketch plans of the community health centre now under construction in the Melbourne suburb of Deer Park. The Australian Government is building the centre on its own land, a short distance from the suburb's shopping centre. When completed, the building will be leased to a local community body, the Deer Park Community Health Services Society.

During 1973-74, the Branch was concerned with over 100 projects funded under the Community Health Program and approximately 200 funded under the Community Mental Health, Alcoholism and Dependency Program. The projects covered a wide range of community-orientated health care services, including not only general community health centres but also day hospitals; mental health, alcoholism and drug dependency 'shop-front' or 'drop-in' centres; and health-related hostels. Other projects included surveys of health needs, community health planning, and training programs.

With regard to projects relating to mental health, alcoholism and drug dependency, the *Mental Health and Related Services Assistance Act* 1973, which came into effect in November 1973, provided for $7.5 million to be allocated to such projects in each of the years 1973-74 and 1974-75. Starting in 1975-76, all such projects will be encompassed by the more broadly-based Community Health Program.

The Branch is developing administrative procedures designed to monitor the progress of each project, to identify implementation problems as they arise, and to contribute to the provision of solutions to such problems.

Some details of projects for which the Branch had administrative responsibility in 1973-74 are set out below.

National projects

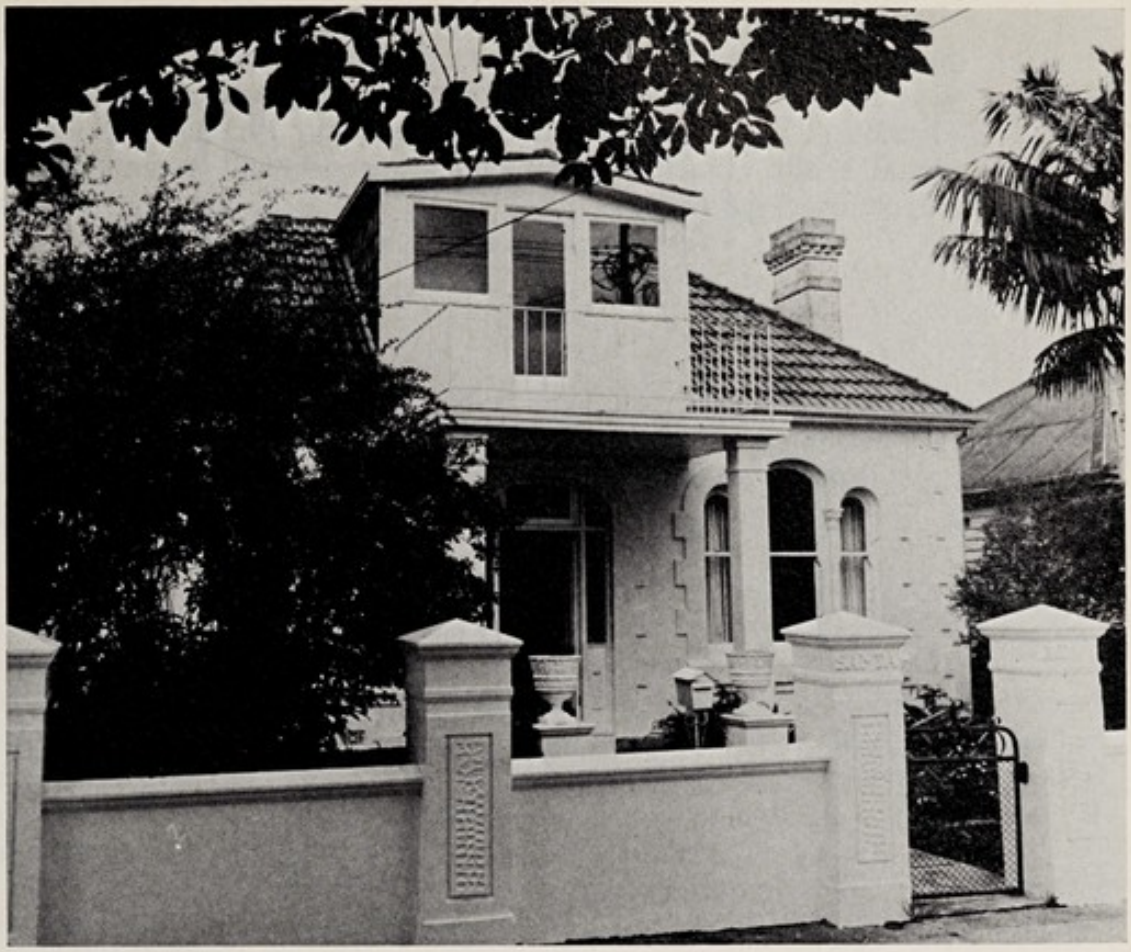
Among projects funded on a national scale was the Family Medicine Program conducted by the Royal Australian College of General Practitioners. The program stimulates an interest in general practice by medical undergraduates, and provides training in family medicine for recently-graduated practitioners who are 'posted' to accredited general practices. It also provides retraining for women medical graduates returning to active general practice. A total of $1,136,000 was allocated under the Community Health Program for the establishment of the project and to meet the costs of its first year of operation.

Two organisations received grants under the Community Mental Health, Alcoholism and Drug Dependency Program to provide national headquarters for their operations. The Austrailan Foundation on Alcoholism and Drug Dependency received $55,000 and Recovery received $20,000.

State projects

NEW SOUTH WALES: Expenditure of $2,700,000 was authorised in respect of fifty-one projects under the Community Health Program, and a total of $2,682,000 was authorised in respect of 120 projects under the Community Mental Health, Alcoholism and Drug Dependency Program. Projects included main community health centres, 'drop-in' mental health centres, community geriatric services, specialist consultative teams, a rural aerial health service, and a regional diabetic service.

VICTORIA: Expenditure of $3,115,000 was authorised in respect of twenty-four projects under the Community Health Program, and a total of $850,500 was authorised in respect of thirty-two projects under the Community Mental Health, Alcoholism and Drug Dependency Program. A highlight of activity in relation to Victoria was the decision to provide land and construct an Australian Government building for a main community health centre at Deer Park, in Melbourne. Other Victorian projects included community health centres at Kensington, Eaglehawk and Lakes Entrance; day



This attractive old home in the Sydney suburb of Leichhardt now houses the Leichhardt Women's Community Health Centre—one of more than 100 projects funded during the year under the Government's Community Health Program.

hospitals; mental health hostels; and alcoholism and drug dependence 'detoxification' centres.

QUEENSLAND: Under the Community Health Program a total of $1,024,000 was authorised in respect of seven projects, and expenditure of $1,178,000 was authorised in respect of twenty-five projects under the Community Mental Health, Alcoholism and Drug Dependency Program. Projects included community health services at Inala (Brisbane), Ipswich, Redcliffe, Rockhampton, Townsville and the Gold Coast, together with mental health assessment and treatment clinics, drug referral centres and psychiatric outpatient facilities.

SOUTH AUSTRALIA: Expenditure of $1,155,000 was authorised in respect of fourteen projects under the Community Health Program, and under the Community Mental Health, Alcoholism and Drug Dependency Program expenditure of $637,000 was authorised in respect of fourteen projects. Projects included community health centres at Ingle Farm, Ceduna, St Agnes, Port Lincoln and Coober Pedy; mental health visitors' courses; a regional referral centre for alcoholics; and an industrial therapy mental health unit.

WESTERN AUSTRALIA: Under the Community Health Program, expenditure of $704,000 was authorised in respect of ten projects, and a total of $940,000 was authorised in respect of fourteen projects under the Community Mental Health, Alcoholism and Drug Dependency Program. Projects included community psychiatric services, mental health services for retarded children, community health centres, mental health diagnostic and assessment services, and nursing training facilities.

TASMANIA: Expenditure totalling $42,000 was authorised in respect of three projects under the Community Health Program, and a total of $363,000 was authorised in respect of ten projects under the Community Mental Health, Alcoholism and Drug Dependency Program. Projects included community mental health clinics, training courses, youth and adolescent services, and consultative assistance.

Occupational Health

In March 1973, the Government gave approval for the Department to establish an Occupational Health Branch to develop policies for a comprehensive occupational health service for all Australian Government employees. The Branch was established in October 1973 within the Public Health Division.

Officers of the Branch have studied measures for the co-ordination of existing health services in Australian Government establishments and their integration into an effective occupational health service, in line with the developed concepts for such a service recommended by the World Health Organisation. The research has embraced such aspects as coverage, objectives, functions and standards for a comprehensive service, and the practical aspects of manpower, accommodation and equipment requirements to introduce the initial stages of such a large project.

The Branch is in the final stages of compiling a report for the Minister for Health which incorporates the concept of regionalisation and deals with the appropriate administrative structure and manpower training programs for the initial pilot phases of an occupational health service for Australian Government employees.

In recognition of the shortage of trained manpower in occupational health disciplines within Australia, and to help satisfy the initial manpower needs of an Australian Government service, the training of Departmental medical officers and nurses has begun. Eight medical officers are studying for the new Diploma in Occupational Health at the School of Public Health and Tropical Medicine, while eleven nurses are attending the NSW College of Paramedical Studies. The setting up of other training programs for occupational health nurses, occupational hygienists and ergonomists has been investigated.

The Occupational Health Branch has also contributed to the health provisions of the draft Mandatory Code on Occupational Safety and Health, the development of which was endorsed by the Government in May 1973. In this regard the Branch has continued and expanded the long standing contribution of the Department to the function of the National Health and Medical Research Council (N.H. & M.R.C.) in the setting of recommended standards applicable to the Australian work environment.

The factors taken into account in the development of such standards relate to two basic aspects, the state of health of the worker and the physical environment of the workplace. The state of health of the worker must have regard to the special needs of particular groups, while the physical environment of the workplace is obviously conditioned by such factors as heat, noise, dust, toxic contamination, special hazards such as ionising radiation and the availability of recreational, first aid and sanitary facilities of the desirable standard.

Over 60 standards relevant to the occupational health field have been recommended to the N.H. & M.R.C. This work will be particularly valuable

in facilitating the introduction of the Safety Code and indicates the basic functions of the Director-General of Health in providing guidance and leadership in the Occupational Health field.

Dental Health

Throughout the year, the Dental Health Branch was actively involved in the implementation of the Australian School Dental Scheme, with the development of dental therapy training programs as its major concern. The Branch also became involved in an increasing range of general dental matters.

Under the school dental scheme, the Australian Government is providing substantial grants to the States to develop a school dental service, in accordance with agreed principles, so as to ensure a unified service throughout Australia. When fully developed, the scheme will offer free dental care to all children under fifteen years of age. Treatment will be provided in school dental clinics which will be staffed by dental therapists working under the general direction and control of dentists.

The Dental Health Branch has responsibility for the overall development and co-ordination of the scheme throughout Australia.

Financial arrangements

The Australian Government meets all approved capital and operational costs of training facilities for dental therapists, all approved capital costs of school dental clinics, and three-quarters of approved operational costs of the field service. Grants to the States totalling $15,592,475, of which $10,410,730 was for the construction of dental therapy training schools, have been approved. The total expenditure in the financial year was $7,537,042, detail of which is shown below:

	Capital Expenditure	*Operational Expenditure*
New South Wales	685,051	657,800
Victoria	794,000	549,797
Queensland	192,800	277,811
South Australia	894,601	1,066,058
Western Australia	660,913	390,915
Tasmania	549,386	817,910
TOTAL	3,776,751	3,760,291

Building projects

Considerable progress was made in the development of the scheme in its first year. The Branch examined detailed proposals for the development of dental therapy training facilities in all States, while the number of students who started training increased from fifty in 1973 to 200 in 1974. It is expected that this will increase to approximately 300 in 1975. The building program is outlined on the following page.

A.C.T. dental therapist Linda Kearney shows a young patient the correct method of brushing teeth. Health education is an important part of the therapist's role.

New South Wales: A training school was established at Newcastle, while schools were begun at Westmead and Sylvania. It is expected that these latter schools will be completed in October 1974 and February 1975 respectively.

Victoria: A training school was started at South Melbourne and is scheduled to begin operation in February 1975. The building will also provide office space for the School Dental Service in Victoria.

Queensland: A temporary training school was established at Kangaroo Point in Brisbane and regional training schools were begun in the suburbs of Holland Park and Stafford. These will be completed in January 1975. The Kangaroo Point school will cease operation when the main training establishment is opened in Brisbane in 1976. Five mobile surgeries were approved.

South Australia: The existing school in Adelaide was extended and a school was started at Somerton Park which will be completed by February 1975. Approval was obtained for thirteen school dental clinics and three mobile surgeries.

Western Australia: A temporary training school was opened in West Perth in February 1974, providing for first year students only. The main school at Mt Henry is expected to be completed in February 1975. Six school dental clinics and three mobile surgeries were approved.

Tasmania: Major extensions to the school in Hobart were completed in January 1974. Approval was obtained for four school dental clinics.

Evaluation

In order to provide a continuing assessment of the effectiveness of the School Dental Service, an evaluation study is being developed in close collaboration with the States and Territories and the Department's Automatic Data Processing Branch. This study is in accordance with the recommendations of the World Health Organisation, and will be based on the routine dental examinations which are carried out as part of the normal dental treatment program.

Equipment

In view of the extensive quantity of equipment which will be required in the early years of the School Dental Service, it is realised that there could be substantial savings if arrangements were made for agreed standard items of equipment to be supplied and/or manufactured en masse. This could also help to overcome the present problem of shortages in supply, and facilitate the provision of spare parts.

Specifications for certain items of equipment which are acceptable to States and Territories are now being finalised. Negotiations concerning prices and other administrative arrangements for the supply of equipment will be made by the Department of Health in consultation with the Department of Supply. It is intended that States will place orders in accordance with these negotiated prices.

Australian Dental Services Advisory Council

In order to facilitate the most effective development and co-ordination of the School Dental Service, an advisory body, the Australian Dental Services Advisory Council, has been established with representation from the Australian Government, the States and Territories, and the Australian Dental Association. The Council advises the Australian Minister for Health on all aspects of the school scheme and related matters.

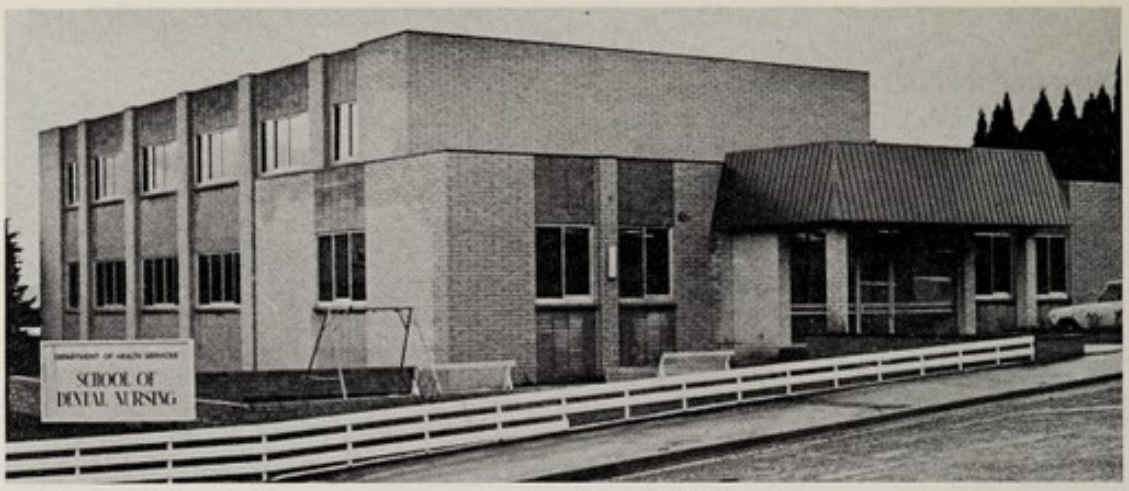
There are four specialist committees—the Equipment, Materials and Building Committee; Auxiliary Dental Personnel Training Committee; Field Operations Committee; and the Evaluation and Review Committee, all of which met during the year. The Council met in Hobart in February 1974 and made recommendations on a wide range of matters concerning the School Dental Service.

The Council and its committees provide a valuable forum for discussion which undoubtedly has contributed to the harmonious and rapid development of a unified service. The Australian Dental Association is actively involved in the work of the Council and the Department acknowledges the valuable co-operation and assistance which the Association has given since the inception of the School Dental Scheme.

The Dental Health Branch provides full secretarial support for the Council and its committees.

New Zealand training scheme

Early in 1973, agreement was reached with the New Zealand Government for the training in New Zealand of 100 Australian dental therapy students. This is an interim measure pending the development of training facilities in



The exterior (above) and an interior view of the new training school in Hobart, where therapists are being trained for the Australian School Dental Scheme. The Australian Government is meeting all approved capital and operating costs of training facilities like these. The Hobart School was the first of a number of similar new schools to be completed.

Australia. Following an intake of twenty-six students in March 1973, further groups of Australian students were sent to New Zealand in September 1973 and March 1974, bringing the total number of Australian students training in New Zealand to sixty-nine. A final group of students will be sent to New Zealand in March 1975. It is expected that the first group will graduate in February 1975.

The total expenditure on the training of dental therapists in New Zealand during the financial year was $197,623.

Other activities

The Branch began the investigation of preventive programs applicable to the School Dental Service with a view to establishing clinical trials. In addition, a national schedule of dental therapists is now being compiled from data supplied by all States and Territorial health authorities.

Other activities of the Branch during the year included the provision of advice to Australian Government Departments and instrumentalities on such matters as dental fees, claims and compensation, and community dental care programs. The Branch was also involved in developing proposals for the establishment of an Advisory Dental Council of Australia to play a major role in the investigation and assessment of dental qualifications granted overseas, and in making recommendations on their acceptability in Australia.

A further concern has been investigations and recommendations concerning the shortage of dental manpower in Australia.

Tuberculosis and Health Standards

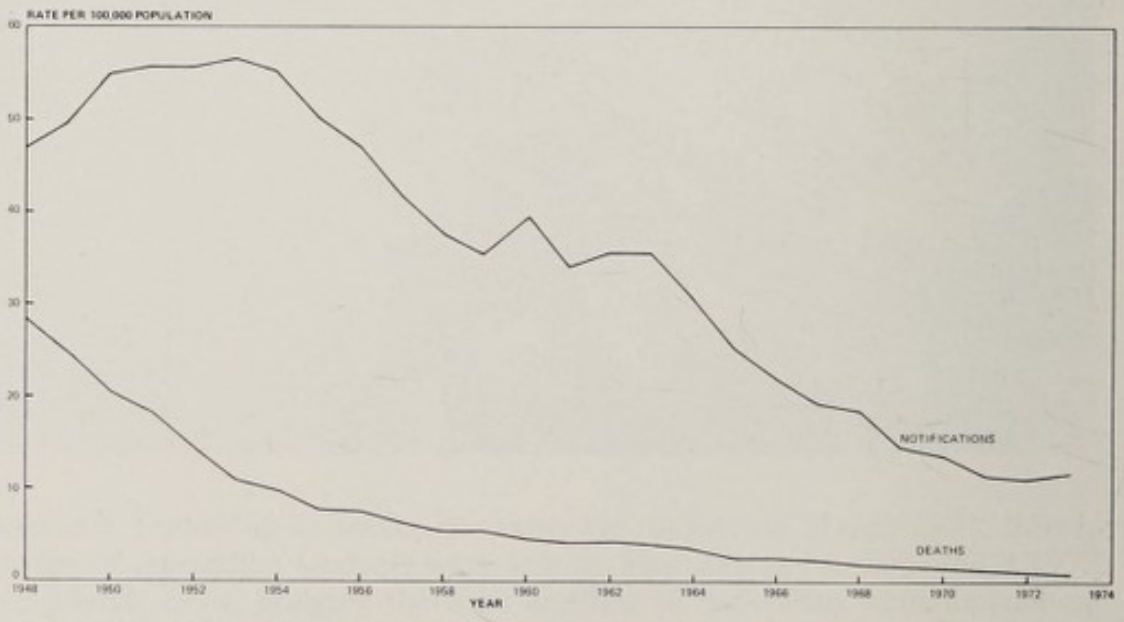
The continuing danger of tuberculosis in the Australian community was highlighted by a dramatic and unexpected increase in new cases of the disease in New South Wales in 1973. Notifications rose by 23.1 per cent, causing an increase in the overall Australian notification figure.

No particular reason is evident for the New South Wales increase. Fewer people were examined than in 1972 and less disease was discovered in mass X-ray surveys. There were no significant changes in other case finding activities and no epidemics were reported anywhere.

Although no explanation is readily available, several interesting facts emerge from an analysis of the overall notification figures. Small increases in numbers occurred in the notifications of pulmonary tuberculosis in the Australian Capital Territory and the Northern Territory, but New South Wales was the only one of the six States which recorded an increase in this category of 12.4 per cent. However, five States recorded increases in non-pulmonary

NOTIFICATIONS (EXCLUDING REACTIVATIONS) PER 100,000 POPULATION—ALL FORMS—1948 TO 1973

DEATHS PER 100,000 POPULATION—ALL FORMS—1948 TO 1972



As the graph shows, notifications of tuberculosis in Australia rose in 1973—the first increase recorded in eleven years.The reversal of the downward trend emphasised the obvious need for continued caution in assessing the extent of tuberculosis control achieved in Australia.

tuberculosis. In four of them the increases were small, but in New South Wales the number of cases rose from fifty-one to 109, an increase of 113.7 per cent. The percentage of non-pulmonary to pulmonary cases increased from a regular 17.0 to 18.0 in earlier years to 22.4 in 1973.

As with new cases of tuberculosis, no ready explanation is available for the increase of 16.2 per cent recorded in reactivations or breakdowns of previously treated cases. Almost invariably breakdown occurs in the older age groups treated prior to modern chemotherapy, and seldom in adequately treated cases.

Future of anti-tuberculosis campaign

At its twenty-fourth meeting on 26-27 June 1973, the National Tuberculosis Advisory Council reviewed the Australian anti-tuberculosis campaign and considered the future role of the tuberculosis service. Council expressed the view that Australian Government financial aid and direction had resulted in a co-ordinated and efficient anti-tuberculosis campaign suited to Australian conditions. From a relatively obscure and unsatisfactory position in 1948, Australia had reached a leading world position in tuberculosis control although it had not yet defeated the disease. The campaign, Council said, had given value financially as well as in quality of life. It was flexible and was continually being changed in accordance with modern methods and needs.

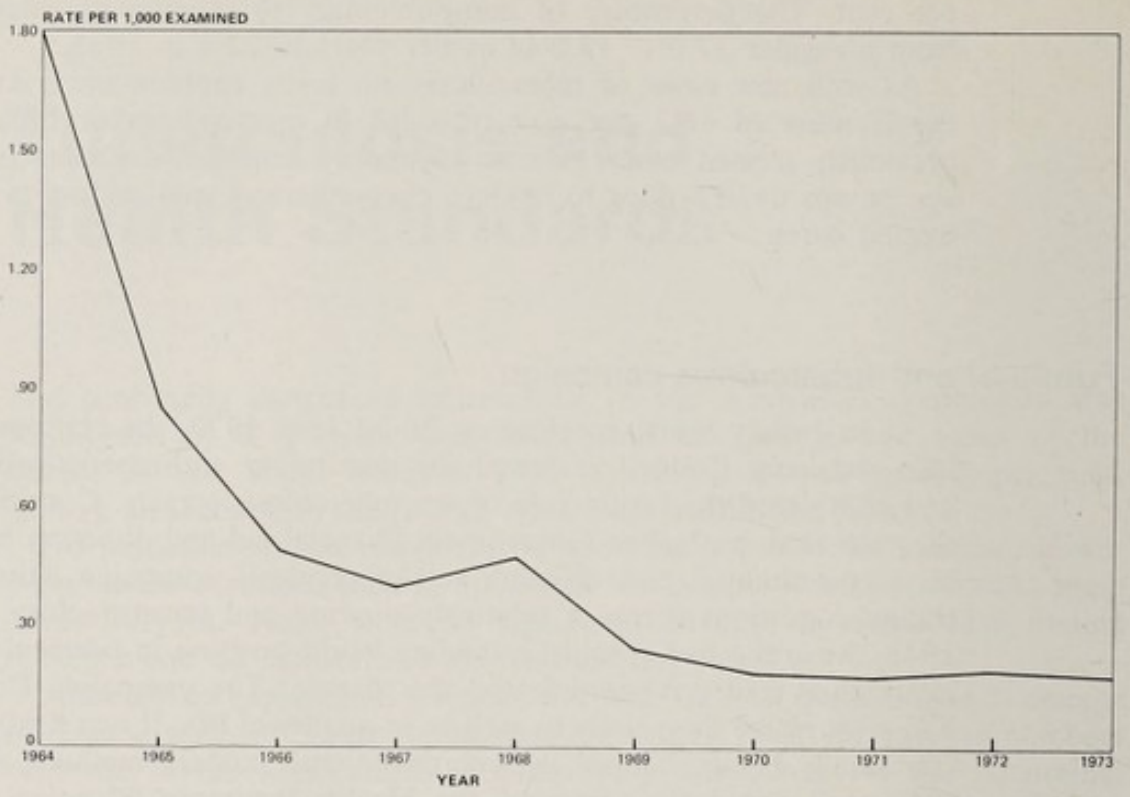
Council noted the views of the Health Insurance Planning Committee concerning financial arrangements for hospital inpatients. If these are implemented for tuberculosis patients, some changes will be necessary in the scheme of tuberculosis reimbursements to the States.

Recommendations on community health programs by the then Interim Committee of the Hospitals and Health Services Commission were also studied. Council considered that the tuberculosis services should not continue their separate existences indefinitely, but should be incorporated in schemes for total health care. However, before this could be done, an effective re-education program in tuberculosis control would have to be implemented for all people in the general medical and public health fields (including private medical practitioners) who would have responsibility for future control. In addition, efficient administrative arrangements would have to be ensured for such activities as case-finding, protective measures, follow-up of contacts, supervision of domiciliary treatment and tuberculosis allowance, medical eligibility, surveillance of high-risk groups and maintenance of case registers, if adequate control was to be maintained and recrudescence avoided.

Arising from its study the Council passed a resolution recommending:

(1) That the public health aspects of tuberculosis control be retained as a specialised activity within the general structure of the public health authorities in the States and Territories.
(2) That consideration be given to integrating the investigation and treatment of tuberculosis with the other aspects of thoracic medicine, bearing in mind that the present standards achieved throughout Australia in tuberculosis control must be retained.
(3) That a special meeting of Council be arranged to discuss the medical services in respect of tuberculosis in Australia with the Interim Committee of the National Hospitals and Health Services Commission.
(4) That until a plan emerges from such discussions and in order not to prejudice any future national comprehensive and integrated health

RESULTS OF MASS X-RAY SURVEYS—RATE OF ACTIVE AND PROBABLY ACTIVE TUBERCULOSIS CASES PER 1,000 EXAMINED—1964 TO 1973



A total of 1.45 million people was examined throughout Australia in compulsory mass X-ray surveys in 1973, producing a discovery rate of active and probably active cases of 0.18 per 1,000 examined.

service, the Commonwealth/States tuberculosis arrangements should remain in their present continuing form with no further fixed term being set.

(5) That any change in the provision of medical services in respect of tuberculosis will need to be carefully arranged to suit conditions in each State and will not necessarily be uniform.

(6) That Council should keep this matter under review and report progress.

The recommendation was accepted by the Minister for Health and transmitted to the State Ministers for Health for consideration. It was discussed between departmental officers and the Interim Committee of the National Hospitals and Health Services Commission, and a discussion paper was compiled for circulation to the State Health authorities. The paper will assist the special meeting called for by Council when it can be arranged.

Source of discovery

Chest clinics discovered 27.1 per cent of the new and reactivated cases of pulmonary tuberculosis notified in Australia in 1973 and were the most productive form of case discovery. This change was not unexpected as the chest clinics are beginning to take over the case-finding role of the compulsory mass X-ray surveys. They are doing this mainly by following up people with pulmonary abnormalities noted during the X-ray surveys, who are known to be at high risk of breaking down with tuberculosis. The next most productive sources of case discovery in 1973 were the X-ray surveys (22.4 per cent),

followed by general and chest hospitals (20.5 per cent), and private medical practitioners (17.2 per cent).

In Western Australia, where compulsory X-ray surveys were suspended in 1972, the chest clinics discovered 42.1 per cent of the new cases.

Mass X-ray surveys

Compulsory X-ray surveys remained suspended in Western Australia in 1973, and the modifications reported last year were gradually being put into effect in the other States. Throughout Australia 1.45 million people were examined in compulsory surveys. A total of 264 active and probably active cases of tuberculosis was discovered, at a rate of 0.18 cases per 1,000 persons examined.

The surveys contributed 59.0 per cent of the new pulmonary cases of tuberculosis notified in the Australian Capital Territory and 47.3 per cent in the Northern Territory. The surveys also contributed significantly in Queensland with the discovery of 32.7 per cent of pulmonary cases notified, and in Victoria with 27.2 per cent.

Conferences

Two important tuberculosis conferences involving Australia were held during 1973. Four delegates from the Australian and State Health Departments, together with many non-governmental delegates, attended the twenty-second conference of the International Union against Tuberculosis in Tokyo in September. Australian delegates made several contributions to the scientific program. An invitation was issued for Australia to hold the twenty-fourth conference in 1977. The Australian Tuberculosis and Chest Association—a voluntary body affiliated with the International Union Against Tuberculosis—is exploring the prospect of doing this with Government financial assistance.

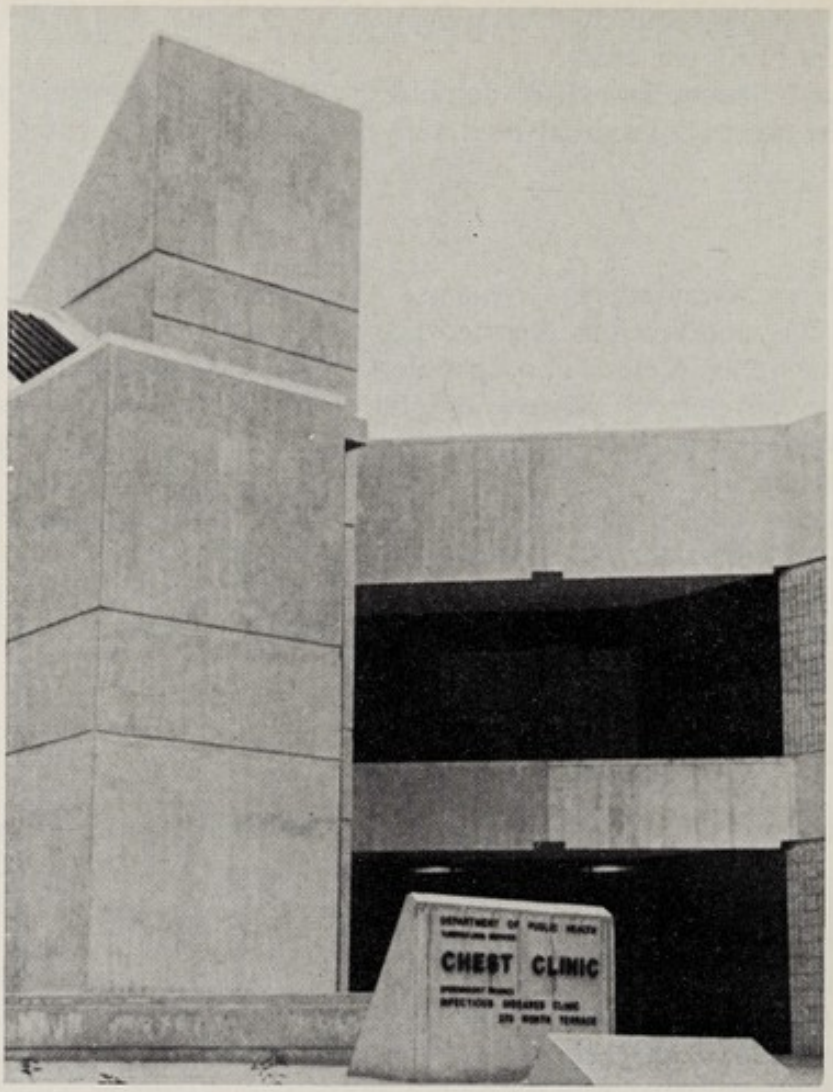
The seventh Australian Annual Tuberculosis Clinical Conference was held in Adelaide in April. Delegates from all States and Territories and one from New Zealand contributed to the scientific sessions.

Tuberculosis allowances

The rates at which allowances are paid to infectious sufferers and their dependants were increased on two occasions during the year. Important improvements made in the conditions under which allowances are paid included the introduction of a liberal tapered means test enabling payment of a higher rate of allowance to certain persons who have income from sources other than the allowance; abolition of the means test for allowances paid to people 75 years of age and over; conversion of the married person rate of allowance to separate rates for husband and wife to ease income tax payable as a result of the abolition of the means test; and removal of the twenty-one years of age barrier so that an additional allowance is payable for each dependent child undergoing full-time education.

Tuberculosis in migrants

The incidence of tuberculosis in people born outside Australia was again much higher than among the Australian-born. Although they made up only



The modern exterior (left) and the waiting area of Australia's newest tuberculosis chest clinic, opened in Adelaide in March 1974. The Australian Government contributed $558,000 towards the cost of the clinic.

20.2 per cent of the total population, people born elsewhere were responsible for 35.9 per cent of the new cases of tuberculosis discovered. They produced 43.1 per cent of the new cases of non-pulmonary tuberculosis discovered and 67.54 per cent of the new cases of genito-urinary tuberculosis.

Project works

The new Divisional Headquarters and Chest Clinic in Adelaide was the only major tuberculosis capital project during the financial year. It was officially opened in March 1974 by the Premier of South Australia in the presence of the Australian Minister for Health.

Hospital beds

For the first time the number of hospital beds available for tuberculosis throughout Australia was unchanged from the previous year. Although it was considered expedient to retain the 1,170 beds for tuberculosis use, many were used for treating non-tuberculosis patients.

Medical standards and medical examination of migrants

The Tuberculosis and Medical Standards Branch checks medical documents and chest X-rays of people from South-East Asia who apply to migrate to Australia. Temporary residents and students attending courses in Australia are also checked. During 1973, 13,709 applications were reviewed and the rejections for active pulmonary tuberculosis alone were 167, a rate of rejection of 1.2 per cent. In addition to this, many thousands of applicants are medically cleared by Australian medical officers stationed at Migration Centres at overseas posts.

There are twenty-three full-time salaried medical officers attached to thirteen overseas posts in the United Kingdom, Europe and the Middle East. Except for those in the United Kingdom, these officers are on the staff of the Department of Immigration, but carry out their medical duties under the surveillance of the Department of Health. Their work forms part of the migrant selection procedure which is important both for the migrant himself and for Australia. It is vital to ensure that the migrant is without physical or mental handicaps which could make it difficult for him to settle and work happily in a new land and cope with the stresses and strains of migration. The procedures must ensure also that public health in Australia is safeguarded against the introduction of serious ailments such as tuberculosis and hereditary diseases which could pass on to future generations.

This Section also liaises with the Public Service Board in the application of medical standards for entry to and retirement from the Public Service. It also advises the Defence Forces Retirement Board on pensions for disabled regular servicemen and women and commutation of pension entitlements. It further advises on the evaluation of medical conditions where candidates have applied for second assistance under the War Service Home Loan Scheme.

Nursing

The Nursing Section maintained liaison with international, national and State authorities and with professional nursing organisations throughout the year, and continued to assemble information regarding all aspects of nursing.

Assistance and advice was provided to this and other Federal departments including the Department of Aboriginal Affairs, and to the Hospitals and Health Services Commission on nursing matters.

In conjunction with the Departments of Foreign Affairs and Education, and with the assistance of hospitals and health and welfare organisations in all States, the Section continued to organise and supervise nursing programs for sponsored students from foreign countries.

The total number of nominations received during the year was fifty-six and at the end of May 1974 there were thirty-five students undertaking programs in Australia. Some were doing basic nursing courses, others were undertaking individually organised ad hoc programs, and others were studying for post-graduate qualifications at the College of Nursing and the N.S.W. Paramedical College.

The Section continued to act as a secretariat to the Nursing Committee of the National Health and Medical Research Council.

In the publications field, the Section is arranging publication of the recommendations of an ad hoc sub-committee of the Nursing Committee, which was established to study the future role of the nurse in Australia. The book will be circulated to those institutions which received an annotated bibliography and report on the same subject, prepared by Miss Ruth White.

The Section is also updating the *Post-Basic Nursing Courses in Australia* manual which received wide circulation in 1973. There has been a large demand for the manual.

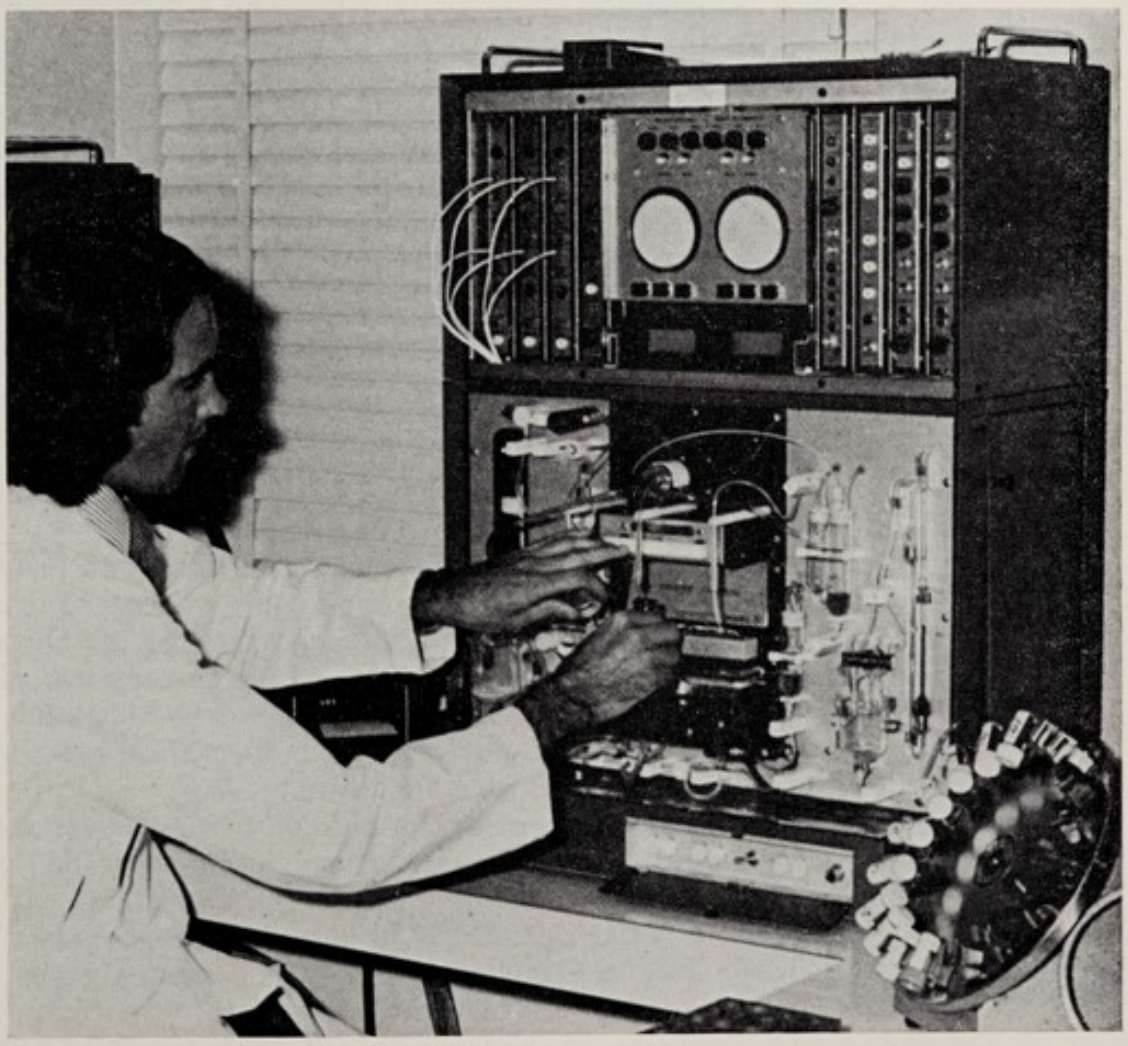
The Principal of the Nursing Section acted as Australian advisor at a WHO meeting in Manila in December 1973 of the Technical Advisory Committee on Nursing, Miss Ingrid Hamelin, a WHO temporary adviser, visited the Department prior to the meeting.

In the latter part of the year, the Principal began studies on the categories of nurses throughout Australia on behalf of the Public Service Board.

Pathology Laboratories

The Department's Health Laboratories were officially renamed 'Pathology Laboratories' during the year. The new name is considered more appropriate as the present major activity of the laboratories is the provision of a pathology laboratory service to medical practitioners and hospitals. The laboratories have other functions, but the growth in demand for clinical pathology services in recent years has been such that this is now the laboratories' primary activity.

During 1973-74, the fifteen laboratories carried out a total of four million diagnostic and other laboratory tests and investigations—an increase of 8.4 per cent over the previous year's workload. A similar annual workload growth has been recorded consistently over the past several years, reflecting the increasing emphasis placed by modern medicine on laboratory investigations.



Medical laboratory technologist Denis Woolaston of the Department's pathology laboratory in Tamworth, N.S.W., analysing a specimen of blood on an automated haematology machine.

Services provided by the laboratories are free and are made available to hospitals and private medical practitioners in each regional area concerned. Currently, laboratories are located at Canberra, Cairns, Townsville, Rockhampton, Toowoomba, Lismore, Tamworth, Albury, Bendigo, Port Pirie, Kalgoorlie, Hobart, Launceston, Alice Springs and Darwin.

Establishment of Central Office branch

In September 1973, a Medical Laboratories Branch was created within the Medical Services Division at Central Office. Functions of the Branch include responsibility for the overall co-ordination of the operations of the Department's Pathology Laboratories, and the administration of departmental policy in relation to the laboratory services provided.

The Branch also provides consultative and advisory services to the Minister for Health and the Director-General on matters relating to the specialisation of pathology and associated laboratory activities in Australia generally.

Laboratory accommodation

Further progress was made during the year in the provision of adequate accommodation to meet the needs of each laboratory. As workload, staffing and the range of equipment increase, a continuing review of space requirements is necessary.

A new laboratory building at Albury was completed to replace the one destroyed by fire in December 1971. Additions were made to existing accommodation at Rockhampton, Toowoomba, Alice Springs and Darwin, while approval was given for the construction of new laboratory buildings at Townsville and Bendigo in 1974-75.

Planning of a proposed central laboratory in Canberra and a laboratory at Casuarina, Darwin, has been completed.

Proposed laboratory at Hobart

Negotiations took place between the Departments of Health and Repatriation on a proposal to construct a laboratory at Hobart, to meet the pathology work requirements of both departments in that city.

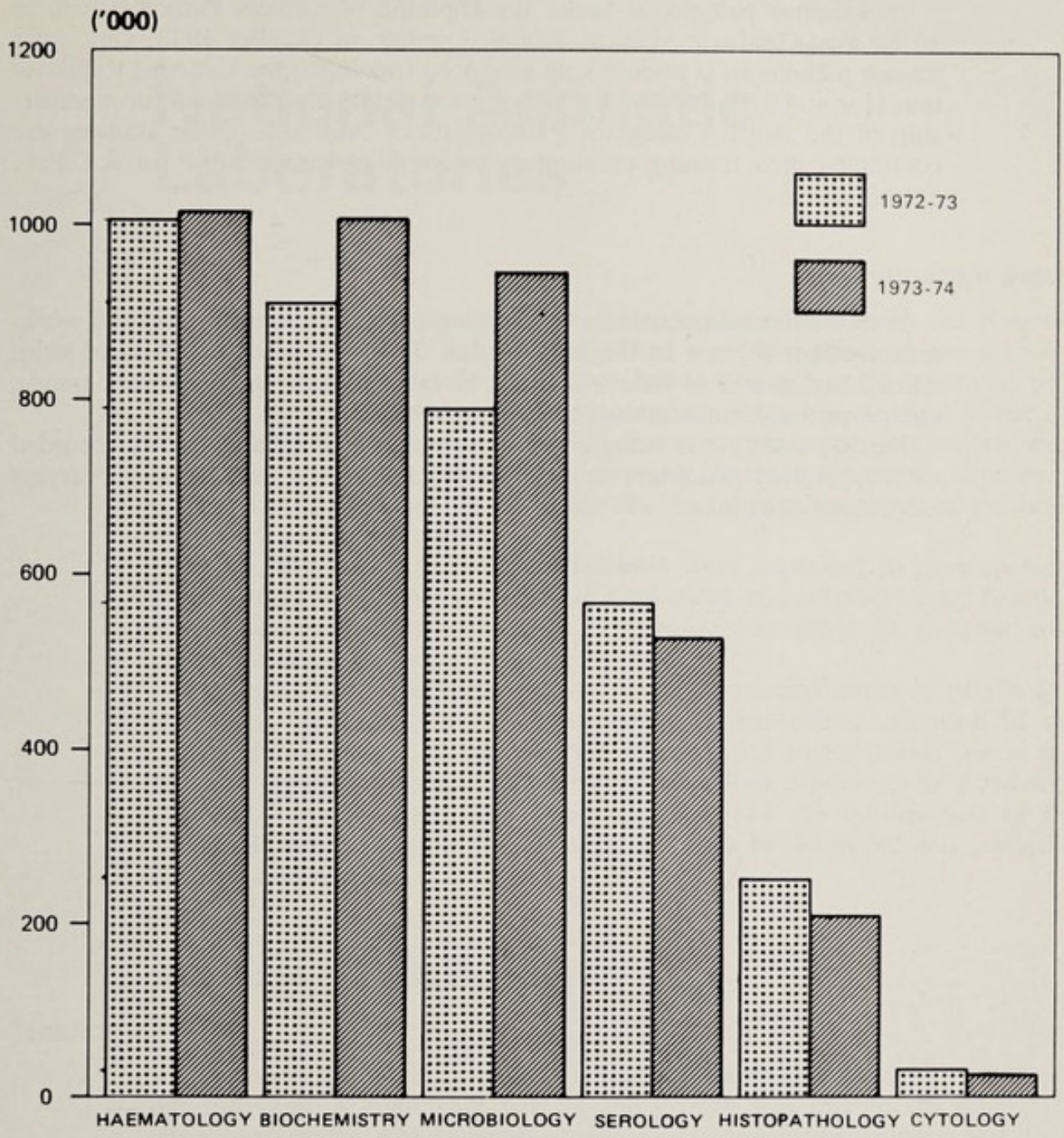
Agreement has been reached on the functions of the joint facility and its administration. The laboratory, to be built on a site adjacent to the Repatriation General Hospital in Hobart, will be constructed by the Department of Health. Staffing and operational control of the laboratory will also be the responsibility of this Department. The laboratory will provide a full pathology service to the Repatriation Hospital as well as to medical practitioners and hospitals in Hobart and the surrounding district.

Initial planning of the laboratory is currently being undertaken by the Medical Laboratories Branch in consultation with officers of the Repatriation Department.

Staffing

The rapid increase in laboratory workloads and the expanding range of technical procedures undertaken continues to place heavy demands on the staff of the laboratories.

NUMBER OF TESTS—CATEGORY OF WORK—1972–73 AND 1973–74



As the graph shows, the numbers of tests carried out by the Department's fifteen pathology laboratories in the past year again rose, reflecting the increasing emphasis placed by modern medicine on laboratory investigations.

Further progress has been made in providing technical officer staff through the Department's traineeship scheme. However, the staffing level in medical technologist and technical officer categories at many of the laboratories is below requirements. Direct recruitment of such staff continues to be difficult particularly for those laboratories in the more remote locations.

Applications for specialist pathologist positions increased during the year and specialists were recruited for Townsville, Rockhampton, Toowoomba, Lismore, Bendigo and Canberra.

Trainee pathologists

One trainee pathologist began the Diploma of Clinical Pathology course at the Post-Graduate Medical School, London, in October 1973. One other trainee pathologist is undertaking advanced training at the Concord Repatriation Hospital in Sydney with a view to completing examinations for membership of the Royal College of Pathologists of Australia. Other trainees are continuing their training preparatory to attending either D.C.P. or R.C.P.A. examinations.

Work measurement

Progress has been made in formulating and implementing a revised work-measurement scheme in the laboratories. This will provide details of work carried out as well as data which can be helpful in determining work-trends, equipment, accommodation and staffing needs.

Further attention is being given to refining the weighting factors accorded each laboratory procedure to ensure the reliability of the scheme in varying laboratory situations.

National Acoustic Laboratories

The year saw an increase in all phases of work undertaken by the National Acoustic Laboratories. Policy changes had a marked effect on the activities of the services and development area, while research staff developed procedures which have made a further major contribution to medical science.

Two new applications of the Laboratories' ultrasonic echoscopes were developed. Using instrumentation previously designed for other purposes, it is now possible to visualise ultrasonically the ventricular system of the brain in infants, and the thyroid.

The Laboratories' audiological facilities were expanded to develop techniques and instrumentation for the assessment of central hearing function and disorders often associated with learning disabilities in children with otherwise normal hearing.

Important policy decisions during the year included abolition of the $10 hiring fee for Calaid hearing aids issued to pensioners, extension of the scheme for provision of free hearing aid batteries to all Calaid users, and the granting of approval for adult clients as well as children to be fitted with two aids (one for each ear). The year also saw the introduction of the Calaid H, the first behind-the-ear hearing aid to be developed and produced by the Laboratories.

Services and development

Hearing aids

There was a further increase in demand for audiological services throughout the year. A significant part of the growth was due to the change in conditions under which hearing aids are issued to pensioners and their dependants. Since the beginning of January 1974 the $10 hiring fee has been abolished and batteries have been issued free of charge through N.A.L. Hearing Centres to all Calaid users.

A new, permanently-staffed Hearing Centre was opened in Canberra in May. It is housed in temporary accommodation pending completion of new premises which should be ready for occupation in two years' time.

The Laboratories' binaural hearing aid fitting program was extended to cover adult clients as well as children who may benefit from the use of two aids.

Approval was granted for formation of a new sub-section to develop methods for evaluating central auditory disorders often associated with learning disorders in children who have normal hearing sensitivity but are unable to correctly distinguish or process sound in the usual way. The investigations of this group will also have relevance to the selection and

fitting of hearing aids for both children and elderly people under the present schemes.

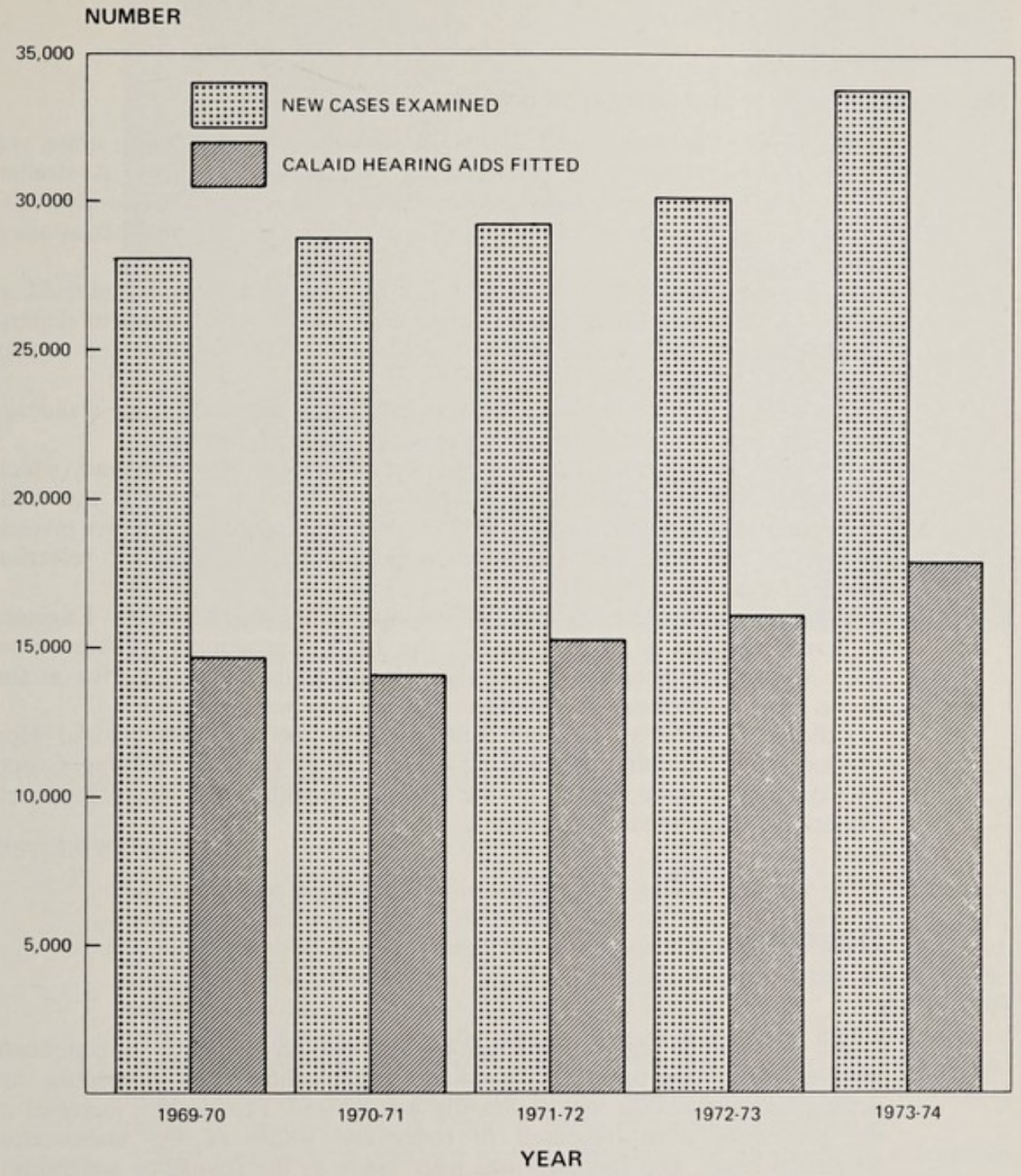
The major emphasis in development and training throughout the year was on new hearing aids. A behind-the-ear aid, the Calaid H—the first of its kind to be issued by the Laboratories—was introduced and is at present available in two models. This aid is an important addition to the range of Calaids as it enables more clients to benefit from 'on the head' listening. It is expected that the Calaid H will be applicable to more than seventy-five per cent of the people requiring an aid through the Laboratories' services.

Design details of circuits for two additional models of the Calaid H are well advanced. One of the new models will provide a more economical ear level alternative to the Calaid E; the other will provide 'on the head' fittings for clients at present catered for by powerful body-worn aids.

The range of body-worn aids was extended by the development and issue of the Calaid G aid which is available in two models, the G5G and G12G. The aid may be used as a one or two-battery model, depending on the power required, and is intended for use by severely or profoundly deaf clients. The two new models supersede the higher-powered models of the Calaid T, and are expected to provide additional benefits to users as a wider range of frequency characteristics is available.

National Acoustic Laboratories audiometrist Carol Robinson fitting a patient with a Calaid H hearing aid—the first behind-the-ear aid to be developed and produced by the Laboratories.

NEW CASES EXAMINED AND CALAID HEARING AIDS FITTED—
1969–70 TO 1973–74



The National Acoustic Laboratories recorded a further increased demand for audiological services during the year. Government decisions to abolish the hiring fee for hearing aids and to issue free batteries contributed substantially to the increase.

An integrated circuit, developed and manufactured in Australia for N.A.L., was introduced into the Calaid E in-the-ear hearing aid. This has led to a significant improvement in performance. A new model of the aid, the Calaid EA which uses this integrated circuit, incorporates additional facilities such as user-operated volume and tone controls.

New methods of aid selection and fitting have been introduced and greater attention has been given to the after-fitting care of people provided with aids.

This emphasis on the hearing aid, both from the point of view of the introduction of new models of aids and of fittings and servicing, will be intensified in the coming year.

Noise investigations and acoustical advice

Professional assistance and advice on problems concerned with noise and hearing conservation were provided for the Armed Services, Australian Government departments and instrumentalities. This included noise investigations at several bases of the R.A.A.F., a major user of the Laboratories' advisory services.

A five-day course in noise and hearing conservation was conducted at Central Laboratory for engineers employed by various Government departments. The success of the course has led to further requests for similar courses.

Investigations were made of the applicability of proposed noise standards and also of alternative methods of assessing impulsive noises.

A major event during the year was the acquisition of a caravan, which has been fitted out as a mobile laboratory for noise work in the field. Delivery was also taken of equipment which will allow more extensive investigations to be made of vibration, an important parameter in the selection of sites for hearing centres.

Other significant events included the attendance of the Senior Engineer as invited speaker at Inter-Noise 73, the 1973 international conference on noise control engineering, and as the sole Australian representative at the Noise Expo Conference in Chicago.

Officers of the Laboratories contributed to the work of the Ad Hoc Liaison Sub-Committee on Hearing Conservation and the Working Group on Community Noise, set up by the National Health and Medical Research Council to draft model regulations.

Research

Audiology

As a result of legal considerations and also in response to comments received from appropriate professional organisations, the procedure for determining percentage loss of hearing was revised. Frequencies included in the procedure were increased to cover the whole of the audiometric frequency range, and modifications were made to the frequency weightings, low fence, better ear – worse ear ratio, and the method of determining percentage loss of hearing associated with the compensable component in complex hearing losses. These changes resulted in a slight improvement in the procedure as a predictor of reported hearing difficulties in everyday life.

Patients with perceptive deafness usually require amplification of sound with an amount of gain that becomes less as the level of the sound increases. This type of amplification has been provided in some hearing aids by use of automatic volume control (AVC). However this has not been very successful, mainly because different amounts of compression are required at different frequencies. An investigation has therefore begun of the problems of providing effective variable-gain amplification for the deaf and of possible solutions to these problems.

A hearing test of a small child under way at a National Acoustic Laboratories hearing centre. In the procedure shown, the child is taught that whenever a sound comes through the loudspeaker, a brightly illuminated puppet appears in the 'theatre'. Psychologists assess the degree of hearing difficulty by judging the child's response to the theatre whenever a sound is played.

Psychoacoustics

The testing program for the study of the effect of urban noise on hearing was completed. A total of 418 fifth and sixth class children from State primary schools have now been tested audiometrically and submitted to ear, nose and throat examination. The data obtained from the study are at present being analysed.

Work began on an investigation of a new method of measuring sound attenuation of ear protective equipment. The method, called the sound head conversion, offers scope for further simplification of the performance rating of these devices. A report is being prepared for publication.

Staff members co-operated in the preparation of an extensive submission to the Senate Standing Committee on Health and Welfare on ultrasonic mobility devices for the blind. Research was undertaken to assist the manufacturers with some auditory aspects of the design of the devices. Lectures were given to provide trainee mobility instructors of the blind with some basic psychoacoustic information relating human perception of sound to the physical principles of operation of ultrasonic 'spectacles'.

Ultrasonics

Research and development in diagnostic cross-sectional visualisation techniques continued to form the major part of the activities in the ultrasonics area.

A new type of transducer and electronics system, called an annular array,

was developed and installed on the water delay abdominal echoscope, resulting in further improvement in resolution and greater clarity of detail in ultrasonic visualisation. Use of this echoscope was extended to clinical examination of liver, kidneys and other abdominal organs.

An important new application of the skin contact scanner during the year was for the visualisation of the ventricular system of the brain of infants up to a few years old. This technique has led to a reduction in the use of the potentially dangerous pneumo-encephalogram X-ray examination in cases of suspected hydrocephalus.

Further progress was made with the development of examination techniques and diagnostic criteria for the clinical evaluation phase in investigation

Officers of the National Acoustic Laboratories are continuing to pioneer new applications for ultrasound. During the past year, they developed a safe method of examining the brain of infant children, using ultrasonic equipment. The photo shows an examination under way at the Royal Hospital for Women in Sydney.

of the eye and breast. Work was commenced on modifications to the breast echoscope to provide more effective coupling between the instrument and the patient. A new application for both the breast and eye echoscopes during the year was in the examination of the thyroid.

The new multi-transducer scanner, mentioned in last year's report, is in the final stages of construction. It is expected to lead to a reduction in the time needed to perform an ultrasonic examination and therefore in the blurring effects caused by patient movement. Work was begun on a new electronically-scanned heart scanner designed to display moving cross-section pictures of the beating heart.

The computer which was installed in Central Laboratory last year was used for operating system and interface design. These are now almost complete, and basic research will soon be started on the properties of ultrasonic echoes from various structures and on the capabilities of several possible digital signal processing techniques. The aim of this research is to develop methods of measuring other acoustic parameters of tissue and of displaying this information in a more suitable way for interpretation and diagnosis.

The technique of recording the microphonic effect of the cochlea of guinea pigs by means of an electrode applied to the round window was used to study the response of the inner ear to ultrasonic irradiation. A two mechanism effect was discovered. This method was extended to the examination of cats, as structurally the inner ear of the cat most closely resembles that of man. An investigation is being made of a technique of measuring cochlear microphonics in the cat with two differential electrodes inserted into the cochlea, to record the microphonics of a precise part of the basilar membrane.

Investigations were made of the surface-specimen technique of staining and examining the cellular surface and hair cells of the complete organ of Corti, in an endeavour to obtain a more rapid means of quantitatively evaluating the damaging effects of ultrasound. A project was begun to study the effects, if any, of low intensity ultrasound on the eyes of guinea pigs.

Seven patients with Meniere's disease were treated with ultrasonic irradiation applied to the vestibule through the round window, and evaluation of the long-term effectiveness of this treatment was started. This involves a study of the results obtained with a group of thirty-three patients treated over a two and a half year period to December 1972.

Australian Radiation Laboratory

The demand for services provided by the Australian Radiation Laboratory continued to increase throughout 1973-74. The Laboratory offers advisory services in the physical aspects of medical radiology, including radiotherapy, and the physical and chemical aspects of nuclear medicine. It also maintains standards for the precise measurement of ionising radiations and of radioactive substances; procures and distributes all radiopharmaceuticals used in Australia for diagnostic investigations and treatment of patients; maintains a surveillance of levels of radioactivity in the Australian environment; and provides a consultative service on the protection of people against ionising radiations, laser radiation and microwave radiation.

In December 1973, the Fall-out Studies Unit of the Department of Science was transferred to the Department of Health and was integrated with the Laboratory.

Radiopharmaceuticals

The Laboratory is the central procurement authority for the purchase and distribution of all radiopharmaceuticals used in Australia for medical diagnosis and treatment. Approximately 90 per cent of all shipments received at the Laboratory come from the Australian Atomic Energy Commission (AAEC), while the rest are imported from Europe, India, Israel and U.S.A. A total of 14,984 shipments was received during the year.

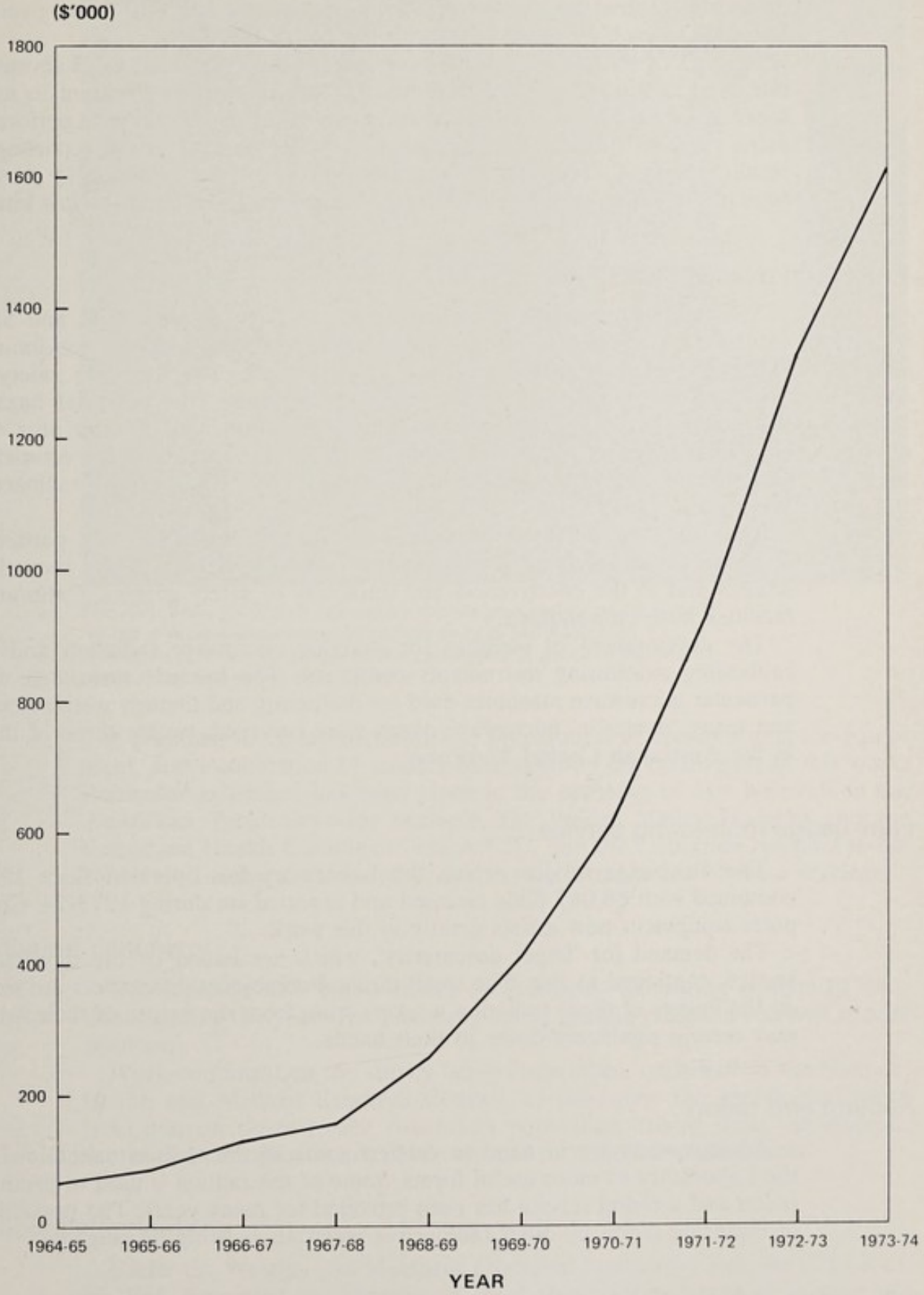
Radiopharmaceuticals for medical purposes are issued free of charge, with the cost being borne by the National Welfare Fund. Expenditure for the year was $1,611,999.

The use of radiopharmaceuticals with short half-lives has continued to increase, particularly those used for organ scanning (for example, technetium-99m—of half-life six hours—is now used extensively in eight different diagnostic techniques). As these materials have half-lives of only a few hours, special arrangements have to be made for delivery to, or collection by, the users. In association with the AAEC and certain medical centres, the Laboratory is assisting in the development of new compounds of technetium-99m. Examples are the development of technetium-99m-labelled pyrophosphate, for bone scanning and pyridoxylidene glutamate for biliary scannings. Both materials are currently undergoing clinical trials.

The Laboratory has developed procedures for the purification of iodine-131-labelled hippuran (used for studies of renal plasma flow) and, as a result supplies of this material are now available daily. Previously supplies had been restricted because the product had only a short useful life

Radiopharmaceuticals dispensed at the Laboratory from bulk supplies are routinely assayed for radiochemical and chemical purity. In addition,

EXPENDITURE FROM THE NATIONAL WELFARE FUND ON RADIO-PHARMACEUTICALS FOR MEDICAL DIAGNOSIS AND THERAPY PURPOSES—1964–65 TO 1973–74



The Australian Radiation Laboratory is the central procurement authority for the purchase and distribution of all radiopharmaceuticals used in Australia for medical diagnosis and treatment. As the graph shows, the cost during the year rose to $1.6 million.

samples of pharmaceuticals purchased by the laboratory are taken at intervals and examined to confirm that they meet accepted pharmaceutical specifications. The performance of *in vitro* kits is evaluated at the Laboratory and in diagnostic centres throughout Australia. Assistance has also been given to hospitals in problems associated with the use of these kits.

As part of its quality control program to assess the kits, the Laboratory instituted in January 1974 a National Quality Evaluation Program to assist users to maintain standards in reporting results of diagnostic tests performed using the kits. Initially the program has been restricted to the reporting of results obtained using thyroid test kits, but it will be extended to provide similar surveys on other tests currently being performed using *in vitro* kits.

Protection against radiations

The Laboratory again provided technical advice to Australian and State Government authorities about protection against ionising and non-ionising radiations. Matters which received particular attention were the safety of operators using radiography for veterinary purposes, the potential hazards associated with the mining and milling of uranium and thorium ores (including the design and construction of a 'personal' monitor for estimating exposure to airborne radioactivity), and the safe transport of radioactive substances.

The study of potential hazards from lasers continued, with particular attention to the safety of lasers used for educational purposes in secondary schools and to the effectiveness and durability of safety goggles. Calibration facilities were consolidated.

The development of facilities for studying microwave radiation and for calibrating monitoring instruments continued. The hazards associated with particular microwave machines used for diathermy and therapy were assessed and many 'domestic' microwave ovens were surveyed, twenty-three of them in the Australian Capital Territory.

Film-badge monitoring service

The film-badge service, which the Laboratory has operated since 1929, continued with 88,067 films assessed and reported on during 1973-74. Computer equipment now assists greatly in this work.

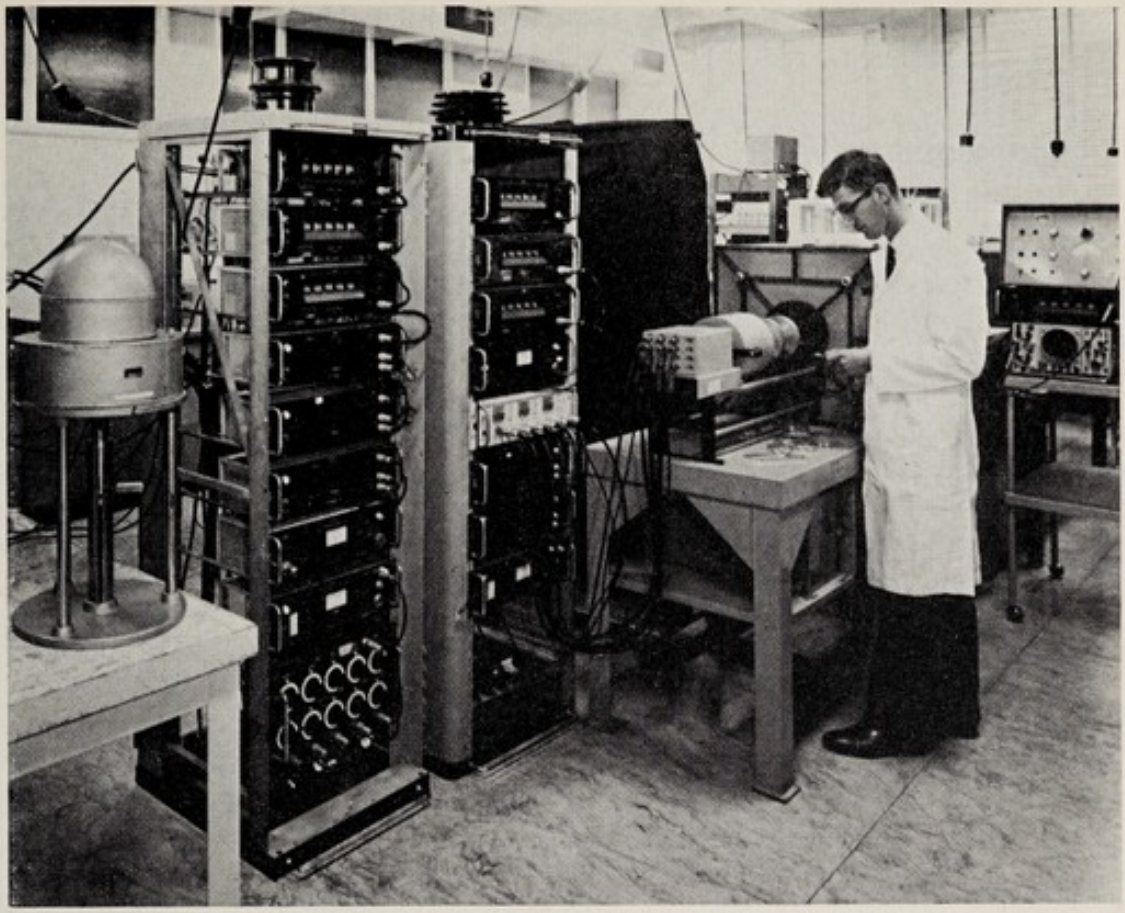
The demand for 'finger dosemeters', which are issued by the film-badge service, continued to rise. The small thermoluminescent dosemeters are worn on the fingers of those radiation workers who, from the nature of their work, may receive significant doses to their hands.

Radium and radon

Arrangements are in hand to convert some of the radium maintained at the Laboratory to more useful forms. Some of the radium is used to produce radon and a radon service has been provided for many years. The possibility of replacing radon by other radioactive materials is being investigated.

Diagnostic radiology

Government departments and instrumentalities have frequently requested the services of the Laboratory on physical aspects of diagnostic radiology.



The Australian Radiation Laboratory maintains a variety of equipment for the precise measurement of radioactivity in the Australian environment. Here, an officer of the Laboratory is about to insert a sample into a sensitive beta detector.

The planning of X-ray departments, preparation of specifications for equipment, and examination of tenders have been an important part of this work. Particular assistance has been given in the planning of new hospitals in the Australian Territories—for example, the Woden Valley Hospital and the Belconnen Health Complex in the A.C.T., and the Casuarina Hospital in the Northern Territory. State authorities have also made use of these services.

Radiation dosimetry

Development and improvement of dosimetry measuring equipment continued during the year. The measurement of gamma radiation received special attention.

Work continued on the survey being undertaken, on behalf of the National Health and Medical Research Council, to determine the genetic and mean bone marrow doses to the Australian population arising from the medical, dental and chiropractic use of X-rays and of radioactive substances.

National standards

Under the Weights and Measures (National Standards) Act, the C.S.I.R.O. in 1965 appointed the Director of the Laboratory as its agent to maintain national standards for the measurement of X-rays and of radionuclides.

In addition to routine work, particular attention was given during the year to improving both the facilities available and their accuracy. A pro-

cedure for the standardisation of iodine-125 was developed, bringing the number of radionuclides which can be standardised to twenty-four.

Environmental radiation

The Laboratory continued its program of monitoring radioactive materials present in the Australian environment. For some four months of the year, the workload was greatly increased by the need to search for and measure the short-lived radionuclides resulting from the tests by France of nuclear devices exploded in the atmosphere. In all, 5,028 samples were assayed.

The whole-body monitor at the Laboratory is being used with increasing frequency by medical specialists in Melbourne hospitals. The assessment of the potassium content of patients is of particular interest. Work has also been done to assess the level of caesium-137 in the population, to check the possible contamination of those who work with radioactive materials, and to detect and identify impurities in radiopharmaceuticals.

Australian Dental Standards Laboratory

The year was one of change for the Australian Dental Standards Laboratory, beginning with a change of title from the original 'Commonwealth Bureau of Dental Standards'.

Then in September 1973, Mr. Alan Docking, who had been Director of the Laboratory since its inception in 1947, died after a long illness. Many tributes were paid to him by colleagues in Australia and abroad for the major scientific contributions he had made in the dental materials field.

A further change occurred late in the financial year when approval was given for a significant increase in the Laboratory's staff, which will permit an expansion of research and development work.

Australian standards

A total of thirty meetings of the sixteen dental committees of the Standards Association of Australia were held during the year to prepare or metricate and revise standards on twenty-seven dental materials and instruments. The Laboratory normally prepares the initial draft which often needs new methods and test equipment. In order to set limits, testing of the complete range of the available products covered by the standard is necessary.

Standards which have been revised, metricated and published to date are:

- AS 1022 Dental rubber dam
- AS 1032 Dental toothbrushes
- AS 1043 Dental acrylic denture base resin
- AS 1086 Dental chisels, excavators, probes and scalers
- AS 1093 Dimensions of shanks and chuck fittings for dental rotary instruments
- AS 1097 Dental duplicating materials
- AS 1139 Dental intra-oral X-ray films
- AS 1185 Elastomeric dental impression materials
- AS 1186 Dental zinc phosphate cement
- AS 1240 Orthodontic latex elastic bands
- AS 1241 Dental baseplates
- AS 1253 Orthodontic band cements
- AS 1264 Dental single-use cartridge hypodermic needles (sterile)
- AS 1278 Dental composite filling material
- AS 1282 Dental alginate impression material
- AS 1453 Dental modelling wax
- AS 1454 Silicate and silicophosphate cements
- AS 1581 Dental mercury
- AS 1582 Dental inlay casting wax
- AS 1583 Dental sticky wax

Assistance was given with the preparation of four medical standards:

AS 1094	Single-use syringes (sterile) for general medical use
AS 1207	Metal surgical implants
AS 1208	The use of plastics for surgical implants
AS 1600	Conical fittings with six per cent Luer taper for hypodermic and other surgical equipment

Revised and metricated standards completed and forwarded for publication were:

AS	Dental impression plaster (AS T4)
AS	Dental laboratory plaster (AS T5)
AS 1616	Dental artificial stone (AS T7)
AS 1620	Dental casting golds (AS T12, T13)
AS	Dental hypodermic needles (re-usable) (AS T24)
AS 1623	Dental gold solder (AS T26)
AS 1625	Dental wrought gold alloys (AS T9)
AS 1622	Dental silver solder (AS T30)

Revision and metrication of ten other AS T standards and preparation of five new ones are reaching completion and the standards will soon be forwarded for publication.

International standards

The Laboratory continued to participate actively in the preparation of international standards with the International Organisation for Standardisation (ISO), the Federation Dentaire Internationale (FDI), the Commission on Dental Materials, Instruments, Equipment and Therapeutics (COMIET) and with joint working groups and committees. This participation is by correspondence and attendance at annual conferences.

Two of these conferences were held in Australia during the year for the first time. In July 1973, the annual meeting of FDI was held in Sydney, while ISO Committee TC/106, Dentistry, met in Melbourne. Both meetings were attended by many dentists, dental auxiliaries, manufacturers and research personnel from overseas.

Senior staff members of the Laboratory presented a lecture and a number of clinics at the FDI meeting and represented the Laboratory on committees of the ISO meeting.

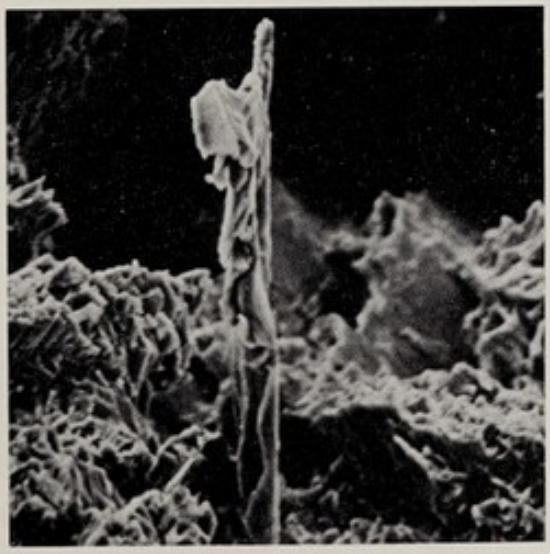
Testing and research program

A large range and volume of products from world-wide sources for use on the Australian dental market continued to arrive throughout the year for testing against prepared standards and for general assessment. Some 240 samples are on the 'Current List of Certified Products', the list used by dentists for selection of their materials.

A scanning electron microscope has been installed to improve the ability to assess many of the properties of materials and instruments, while a gas chromatograph has been added to the chemistry laboratory analysis equipment.

Professor Masayoshi Ohashi of Nihon University, Tokyo, participated in a combined project with the Acting Director of the Laboratory on methods of determining the setting time of dental amalgams. The results are being prepared for publication.

The Cwik-Scan scanning electron microscope (above) is used constantly by the Australian Dental Standards Laboratory in its investigation of dental materials. Photographs on this page are of magnifications produced by the microscope —the tip of a hypodermic needle (right), the fracture of a chromium-cobalt palatal bar of a denture (below left), and a sample of opal (below right).



The project to assess mercury vapour as a health hazard in dental surgeries continued and readings were taken in Victoria, Tasmania and Western Australia. A number of surgeries have been operating at levels over or approaching the National Health and Medical Research Council's recommended maximum level, particularly in the area used for amalgam preparation. Advice has been given that carpets should not be used, and that cracks between tiles and other areas where mercury or amalgam can accumulate should be eliminated, and residues kept under water in a sealed container. Sulphur or HgX, a commercial product, is effective in reducing contamination, but surgeries should be designed to cope with the vapour hazard.

Tests are conducted for anyone on request, but there is possibly a need to make a total survey, particularly in older surgeries.

The first series of tests on deterioration of dental materials stored at the Army Tropical Trials Establishment at Innisfail, Queensland, was completed during the year. The tests revealed deterioration of a large range of materials, due in many cases to unsuitable packaging but in others to a short shelf life. The materials included gypsum products, cavity liners, alginates, polysulphide and silicone impression materials, composite resins, cements, modelling compounds, waxes, anaesthetics and hypodermic needles. It is evident that better packaging is necessary for products stored or used in areas with such an environment. A report is being prepared for publication.

The production of new resins, particularly the one developed by Dr R. Bowen at the National Bureau of Standards, Washington, has prompted some large manufacturing corporations to enter the field of dental materials. This has led to an escalation in the available range of dental filling and impression materials and cements. In particular, the composite direct filling resins have almost replaced the earlier silicate cements, and the trends are toward more satisfactory and long-lasting dental materials. This has led to a need for greater sophistication in test equipment and procedures in order to keep pace with the new materials.

Advisory service

In addition to its testing programs the Laboratory offers an advisory service, and during the year it dealt with many enquiries by telephone and mail from Victorian, inter-state and international sources. The inquiries came from dentists and their auxiliaries as well as manufacturers and distributors.

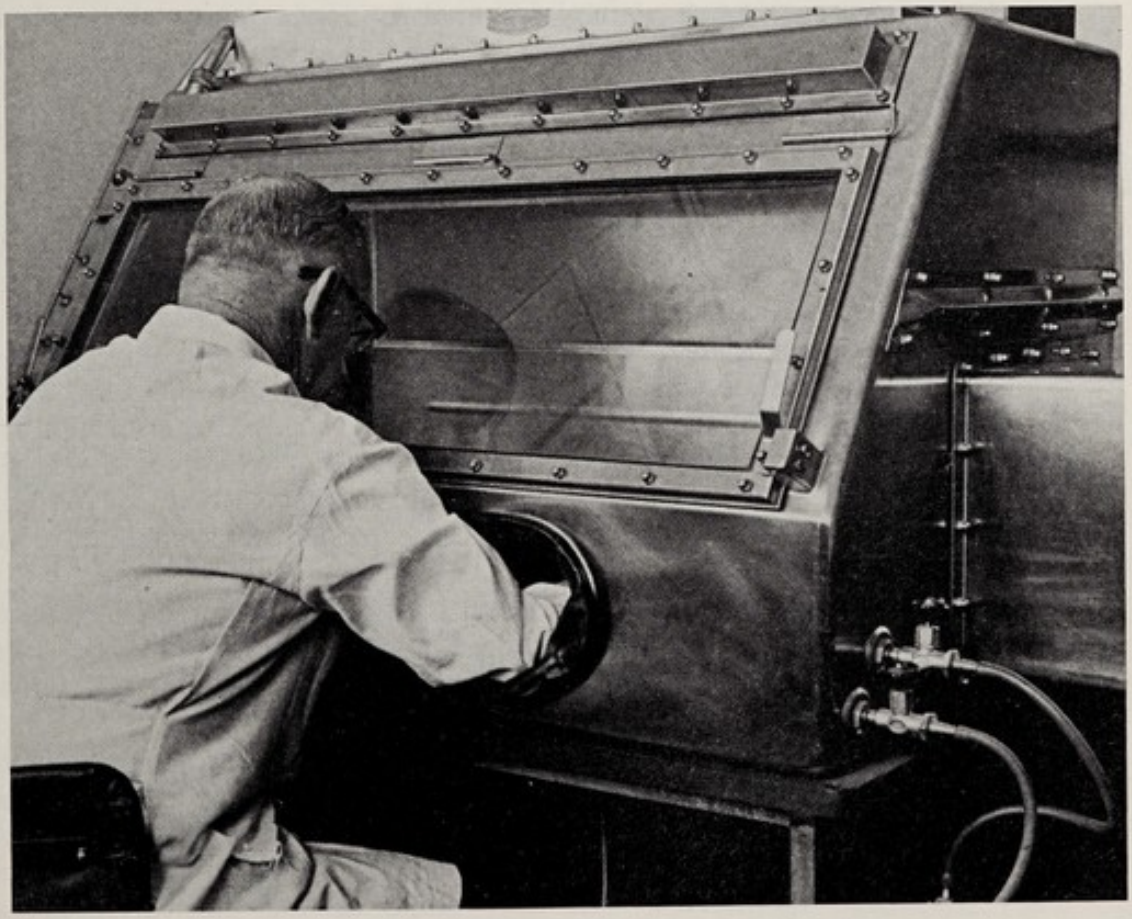
Staff members also gave a number of lectures in Melbourne, Victorian country areas, and in Sydney, Perth and Cairns. Invitations have been received to address meetings in Adelaide, Hobart and Sydney.

School of Public Health and Tropical Medicine

The School of Public Health and Tropical Medicine again undertook a wide variety of research projects during 1973-74, covering the fields of biochemistry, environmental health, medical entomology, occupational health, parasitology, pathology and microbiology, preventive and social medicine, radiation biology and tropical medicine. In addition, the School expanded its already broad scope of teaching activities and its consultative and advisory services.

Teaching

The first students were enrolled in the postgraduate medical course leading to the Diploma in Occupational Health, increasing further the range of teaching undertaken both within and outside the University of Sydney.



An officer of the School of Public Health and Tropical Medicine using a bacteriological safety cabinet for work with an infectious organism.

Twenty Diplomas in Public Health and eight in Tropical Medicine and Hygiene were awarded during the year, while planning began for a proposed one-year course in Tropical Public Health for medical practitioners, nurses and sanitarians.

Contributions were also made to a number of other postgraduate diploma courses, while at the undergraduate level substantial contributions were made in the teaching of students in medicine, architecture, education and engineering at the University of Sydney, and in medicine at the University of New South Wales.

Research

Biochemistry

The Biochemistry Section carried out test evaluations over a period of two months on centrifugal analyses, and considerable interest has been shown in the results. The two available systems were assessed and detailed information was provided on applicability, comparative performance and the need for modifications. The versatility of this analytic method will ensure its increasing use in diagnostic methods in the next few years. The Section's assessment has therefore come at an opportune time as it has clearly indicated the criteria to be applied when the introduction of this type of instrumentation is contemplated.

A study was made of methods used in lipid profiling. This involved kit evaluation, instrumentation and general methodology, and required the use of 150 specimens of random 'normals' from the Red Cross Blood Bank. The results are applicable to clinical laboratories.

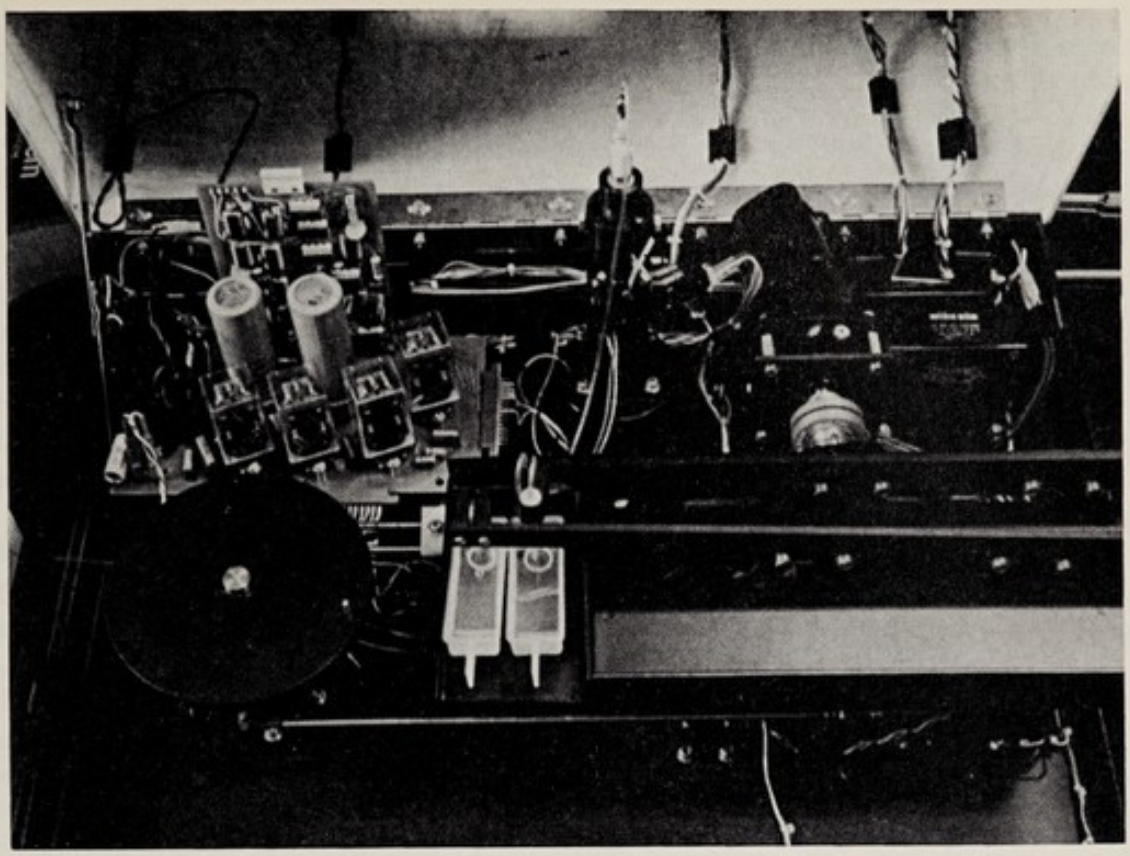
Work began on a methods manual for high voltage electrophoretic techniques which have been used in the Section's laboratory and which are applicable to diagnostic or field work.

Environmental health

The Environmental Health Section participated, in September 1973, in a combined Services trial of survival rations, using volunteers living on liferafts moored in Darwin Harbour. The exercise was highly successful, and the experience gained will be of considerable value in the design of similar or related trials in the future. The trial not only provided information on the relative merits of the three rations under test, but also on a number of other matters of practical and scientific interest. For example, it was shown that the survival water ration at present prescribed is adequate even in tropical conditions. Other information was gathered on environmental conditions in such rafts in the tropics.

Considerable progress was made in the analysis of the results of physiological studies made in New Guinea under the auspices of the International Biological Program. The first two of a series of papers will shortly appear in the *Transactions of the Royal Society*.

Much of the work conducted in the past year was directed towards obtaining a comprehensive set of figures for the concentration of the principal electrolytes in sweat. The project was undertaken because much of the previous work has been piecemeal in nature—most researchers have concerned themselves with only some of the electrolytes present—and because recent advances in analytical techniques have rendered much previously published information obsolete.



Centrifugal systems under evaluation in the Biochemistry Section of the School of Public Health and Tropical Medicine. The systems are a major advance in scientific instrumentation, and widespread interest has been shown in the School's evaluation.

A by-product of the hot-room experiments conducted in connection with the composition of sweat is worth noting. A reliable technique for the cardiac monitoring of exercising subjects was required; this was successfully devised and a description published, and it has now been widely adopted in other laboratories.

Medical entomology

Research into the effects of environmental factors on the life cycle of two Australian anopheline mosquitoes, *An. annulipes* and *An. amictus hilli*, has now been completed, and documentation of Australian mosquitoes, particularly in relation to virus disease transmission and taxonomically to the genus Culex, is continuing. Encouraging work is being undertaken in the development of a mosquito-larva fungal pathogen discovered in 1972.

Outbreaks in Victoria and the Northern Territory of Murray Valley encephalitis were investigated. Mosquitoes were collected for virus recovery, and blood samples of human and animal contacts of proven cases were organised for serological tests.

Work continued on the compilation of a *Checklist of the Culicidae of the Australasian Region* in collaboration with Dr E. N. Marks, of the University of Queensland. A checklist of the flea fauna of the Australian region is also in preparation, and is being continually updated as new literature comes to hand and as older references are discussed.

Members of the Section have begun an investigation into methods of

disinsection of overseas aircraft, in association with the Department's Quarantine Division and the C.S.I.R.O. Division of Entomology. The Section has also coped with an increasing demand from nursery homes for assistance in the diagnosis of scabies and for advice on its eradication.

Occupational health

During the year, the Occupational Health Section collaborated with the National Heart Foundation of Australia in organising and conducting a major segment of the national blood pressure study. By September 1974, some 10,000 employees of the Postmaster General's Department will have been screened for hypertension, and those detected as having mildly raised blood pressure will have been induced into a controlled prospective trial to show the benefits to be gained from early treatment.

In October 1973, with the aid of funds received from the R. T. Hall Trust through the Australian Council on Smoking and Health and the National Health and Medical Research Council, the Section began a study of the absence and respiratory impairment of smokers in industry. In the study, up to 10,000 people, both men and women, in a variety of industries and establishments, will be tested through use of a self-administered smoking and respiratory symptom questionnaire. Sampling of volunteer participants began in May 1974.

The hands of a telegraphist with severe occupational cramp—a subject in a research study by the School of Public Health and Tropical Medicine. With physiotherapy, the subject progressed from operating with only one finger in each hand to full use of all fingers.

An unusual assignment for the Section arose when a group of employees at Sydney Airport refused to service Boeing 727 aircraft, claiming that certain aspects of their design and operation caused ill health. At the request of the Conciliation and Arbitration Commission, the Section performed extensive measurements of the exposure of baggage porters to exhaust gas, noise and heat. The dispute, which lasted nearly four months, was settled on receipt of the report of the investigation which, although it showed that the main fears of the workmen were unwarranted, emphasised the need for aircraft designers and operators to consider the health and safety of all aircraft personnel.

Parasitology

Investigations into the trematode parasite *Velacumantus australis* continued with emphasis on the possible occurrence of interspecific interactions between parasite species. This phenomenon is being investigated elsewhere as a possible biological means of controlling human schistosome parasites. A new aquarium has been set up in order to breed populations of Australian snails, and it is ultimately hoped to test the potential of these snails as hosts of human trematode parasites.

In February-March 1974, an assessment was made of the effects of antimalarial residual insecticidal spraying in the past fifteen years on the transmission of filariasis in six villages in the Sepik and New Ireland areas of Papua New Guinea. The haematological indices for filariasis were dramatically reduced in all villages to below the level at which clinical filariasis is thought to occur.

Routine fluorescent antibody serology for parasitic diseases continued, and sera were referred for examination for amoebiasis, malaria, Chagas' disease, schistosomiasis and strongyloidiasis. There was a further increase in the number of specimens submitted for diagnosis and confirmation, while enquiries and consultation concerning parasitic diseases continued at a high level.

Preventive and social medicine

The ten-year epidemiological and clinical trial of leprosy in Karamui, Papua New Guinea, continued and the population was surveyed for the last time in May 1974.

Evaluation of the effectiveness of medical care, counselling and social supportive services on a population of 100 haemophiliacs also continued, and a survey on the utilisation of health service insurance by Greek migrants, suggested by the Commission of Enquiry into Poverty, progressed well. Computer analysis of data for this latter study is currently being undertaken.

The section is continuing determinations of amniotic alpha-foetoprotein levels in pregnant women 'at risk' to neural tube defects, and it is anticipated that a screening program for chromosomal abnormalities of the foetus will be developed in addition to routine chromosomal studies for genetic counselling. As a result of a recent National Health and Medical Research Council grant, two officers have begun a study on the epidemiology, causation and prevention of central nervous system malformations. Another officer is currently establishing research projects in crisis counselling from voluntary agencies, parameters evaluated in multiphasic screening, multiple screening evaluation in general practice, and studies utilising experimental models of ageing.

Pathology and microbiology

Food surveys carried out by the section were extended from surveillance of airline catering services to a study of pre-packed foodstuffs which are commercially available. This represents an extension of public health investigation of enteric infections into areas which have previously received little attention.

Work continued on the examination of oysters for the presence of viral and bacteriological pathogens as indicators of sewage pollution of estuaries and ocean waters. Such work is important for establishing parameters of control and determining whether commercially-produced oysters of different regions represent a public health hazard.

In other activities, 108 cultures of *Corynebacterium diphtheriae* were received for type specific determination, while quarantine surveillance work included exclusion tests for smallpox, plague and enteric diseases.

Radiation biology

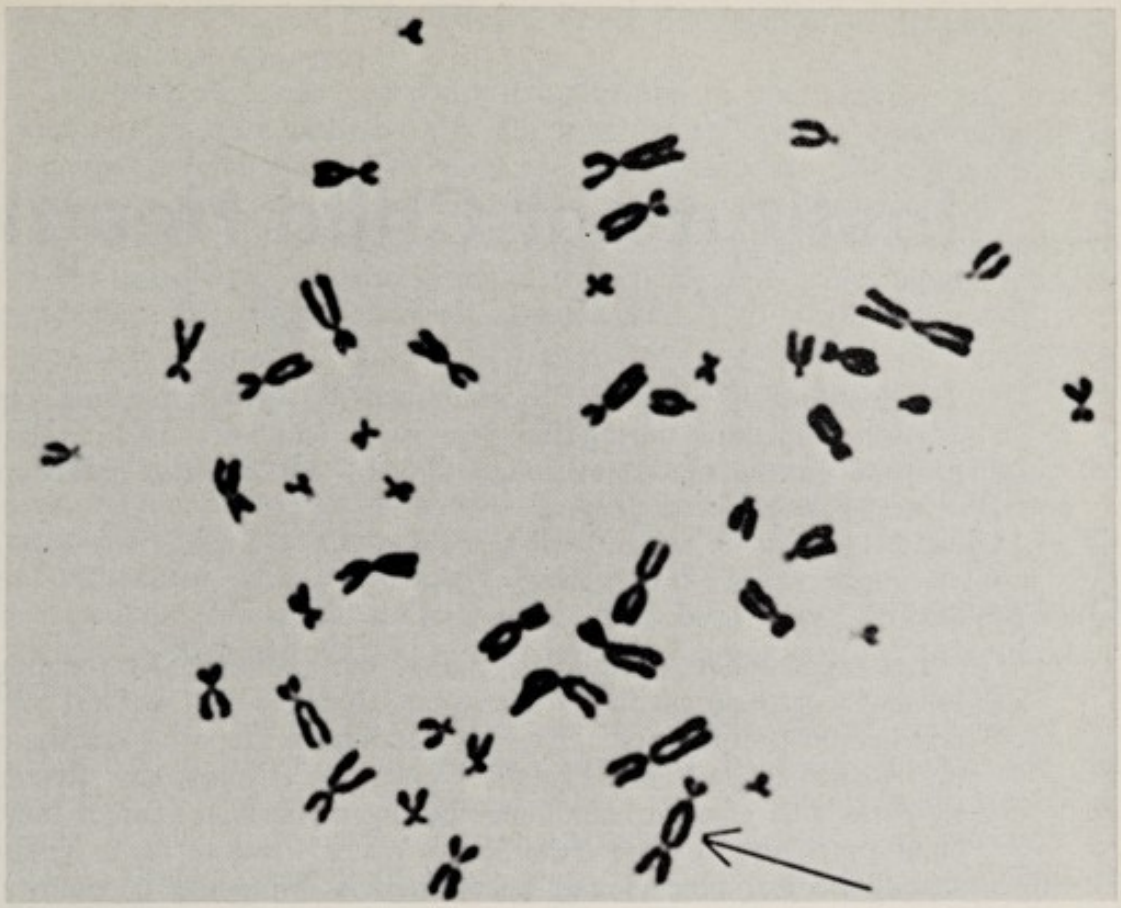
The Radiation Biology Section is one of a number of laboratories throughout the world collaborating with WHO Radiation Health on the use of the lymphocyte as a biological indicator of radiation dosage. Each consultative laboratory is expert in the interpretation of chromosome aberrations induced by radiation within blood lymphocyte cultures, and has constructed curves relating the incidence *in vitro* of such aberrations to radiation exposure. Suspected cases of exposure to ionising radiation have blood samples taken for comparison of their aberration rate with the chart, and through it to accumulated world data on radiation accidents. In this context, work was undertaken to assess the remaining radiation damage of prisoners of war in the environs of Nagasaki who were within range of the wartime nuclear explosion.

The Section has shown that lymphocyte replicating ability (LRA) is a reliable radioimmunoassay of exposure to radiation. At present, the assay depends on blood from the same control subject being available each time the test is performed. However, since the control may be unavailable, or the lymphocytes may be temporarily unsuitable due to intercurrent infection, the use of blood lymphocytes frozen to –196°C as a standard is in process of investigation. Optimum conditions for these stored reference lymphocytes are being investigated in a cryopreservation machine provided by the Sydney University cancer research fund.

The Section is working in conjunction with the Haematology Department of St Vincent's Hospital on the proposed Australian immunotherapy for leukaemia trial. As cryopreservation of myeloid leukaemia is undertaken at the time the patient has active disease, a bank of cells containing tumour-specific antigens is being built up.

Tropical medicine

The writing up of the Coasttown project, a study of the health of a part-Aboriginal rural-urban community centred on a New South Wales coastal town, has been completed. Its findings will be published in two books in the latter part of the year. The first, by Miss Nancy Frith, entitled *Experiences in Public Health Nursing*, gives a striking picture of the health status of Aborigines in a rural area of New South Wales in addition to the social factors which influence health. The second book, by Miss Frith, Dr R. S.



A highly-magnified photograph of chromosomes of a cultured blood lymphocyte from a case of suspected exposure to ionising radiations, investigated at the School of Public Health and Tropical Medicine. Normally chromosomes are joined only at one point, called the centromere. The arrow points to a chromosome containing two centromeres—clear evidence of radiation damage.

Hausfeld and Dr P. M. Moodie, entitled *The Coasttown Project: Action Research in Aboriginal Community Health*, is a final report on the project, which began in 1966. It is expected that both books will be a valuable addition to this area of knowledge.

In 1973, a number of indigenous cases of malaria were reported in the Torres Strait Islands. In co-operation with the Queensland Department of Health and the Army Malaria Research Unit, an epidemiological investigation was made in the area, and it was found that a small amount of malaria transmission had been occurring since 1970. Advice was given on procedures designed to eliminate existing infections and prevent further transmission of the disease which, in the past, has caused large epidemics in the area.

The mainland of Australia has remained free from malaria since 1962, and anti-malaria measures in the malaria receptive area of Australia, which are most developed in the Northern Territory, are under the general guidance and supervision of the Section.

Institute of Child Health

The Institute of Child Health continued its various teaching, research and advisory functions during the year, with emphasis on long-term research projects on rheumatic fever and chorea, urinary tract infections, and on several new projects.

Child psychiatry

Lecture seminars in child psychiatry were conducted throughout the year for under-graduate medical students and student social workers, while lectures and demonstrations were given for candidates preparing for membership of the Australian and New Zealand College of Psychiatrists. Regular supervision was also given to candidates during the second year of their course in child psychiatry for the New South Wales Institute of Psychiatry, and to school medical officers and paediatricians doing the paediatric psychiatry course.

Research laboratories

With the support of grants from the National Health and Medical Research Council and the NSW State Cancer Council, more senior graduate staff have been employed to supervise an expanded range of research projects. The laboratory staff was also expanded with the appointment of more technical officers.

A major research activity is basic work on folic acid metabolism. Other important areas are mammalian purine metabolism and central nervous system transmitters.

Rheumatic fever, chorea and rheumatic heart disease

The two principal aims of the long-term study of rheumatic fever and chorea, begun in 1952, were to determine the effectiveness of penicillin prophylaxis in preventing rheumatic recurrence and ultimate heart damage, and to study the natural history and progress of the disease in a group of Australian children.

Many of the original patients attending the special clinic for rheumatics have now become adolescents or have reached adult life. Regular assessment of their cardiac status is being made and the effects of any residual heart damage on each patient's life-style are under constant review. Since the beginning of the study, nearly three hundred patients have received regular prophylaxis, given as phenoxymethyl penicillin tablets twice daily.

In addition to those who receive prophylaxis from the clinic, which is held weekly throughout the year, a large number of other rheumatic patients have been studied. These were all initially admitted to the Royal Alexandra

Hospital for Children, Camperdown, where the diagnosis of rheumatic fever and/or chorea was made.

The clinic also acts as a consultation centre for paediatricians and general practitioners who wish to refer children for an opinion concerning either diagnosis or management of these and related disorders. Recently a number of children suffering from rheumatoid arthritis have been referred.

A booklet entitled *Rheumatic Fever: A Student's Guide* has been prepared by the paediatricians who conduct the clinic, and is available to undergraduate and postgraduate medical students.

Urinary tract infections

The study of children with urinary tract infections continued during the year. A number of children who have shown recurrences of infection in association with persisting vesico-ureteric reflux have been submitted to anti-reflux surgery with impressively good results. Many more children with recurrent infections and ureteric reflux have been shown to lose the reflux spontaneously when prolonged chemotherapy has succeeded in eradicating infection.

The patients under study have presented ample clinical evidence of the difficulties in diagnosis of urinary infections in small children and the necessity for regular and prolonged supervision of patients under treatment. Some of the latter have shown unsuspected recurrences of infection on routine urine examinations when there have been no other symptoms to suggest this.

Social work

The Institute's social workers continued to play an active part in the teaching of medical students, in co-operation with a number of kindergartens in the Sydney area. They also supervised the work of undergraduate students from the Department of Social Work in the University of Sydney.

Other activities

During the year the Professor of Child Health and other members of the Institute staff played an active part on a committee, established by the Royal Alexandra Hospital for Children, to study the care of children at risk.

Staff members also continued their association with a number of national and international bodies, including the International Paediatric Association, the Australian Postgraduate Federation in Medicine and the Australian-Indonesian Committee for Co-operation in Medicine, and took part in a number of seminars and conferences.

International Health

The Department again provided active representation for Australia in the international health field during the year. Officers attended the twenty-seventh World Health Assembly in Geneva, the WHO Regional Committee meeting in Wellington, the meeting of the Governing Council of the International Agency for Research on Cancer in Lyon (France), and the fifth conference of Directors of Territorial Health Services of the South Pacific Commission in Port Moresby.

Within Australia, the Department's responsibility for the training of overseas-sponsored Fellows in health fields continued, as did its participation in the operations of the WHO Regional Teacher Training Centre at the University of New South Wales. Advice was provided to the Department of Foreign Affairs and the Australian Development Assistance Agency regarding overseas medical aid projects.

World Health Organisation

The Director-General led the Australian delegation to the twenty-seventh World Health Assembly, held in Geneva from 7-23 May 1974. The Assembly was the first at which Dr Halfdan Mahler was present in his capacity as Director-General of WHO. Dr Mahler stressed the importance of the social aspects of health, emphasising that WHO must become an active protagonist for correcting social injustice.

Nuclear testing

During discussion on Dr Mahler's annual report, the Australian Director-General of Health made a statement criticising the continued atmospheric testing of nuclear weapons. He made no mention of any specific country, but the New Zealand Minister for Health, Mr R. J. Tizard, delivered a strongly-worded statement specifically criticising France in this regard.

Admission of new members

The Republic of Guinea-Bissau (formerly Portuguese Guinea) was admitted to membership of WHO while Namibia (South West Africa) was admitted as an associate member. This brings the total membership of WHO to 140 members and three associate members.

Disease prevention and control

The dramatic results in controlling smallpox by vaccination programs were discussed. Several delegations said the efficient procedures used in the

The Australian delegation at the twenty-seventh World Health Assembly at Geneva, in May 1974—from left, the Chief Medical Officer, London, Dr R. W. Greville; the Director-General, Dr Gwyn Howells; the Assistant Director-General, International Health Branch, Dr R. W. Cumming; and the Australian Medical Officer, Cologne, Dr D. Graham.

smallpox campaign should be extended to cover other diseases especially diphtheria, whooping cough, measles, tuberculosis and tetanus.

The relative lack of success in the malaria eradication program was largely attributed to the failure of poorly-developed health services to maintain adequate malaria surveillance, when this was handed over by specialist teams. The situation will be reappraised for consideration at a future Assembly.

Development and co-ordination of biomedical research

The Assembly considered that WHO should have a co-ordinating role in biomedical research and should give guidance in relation to global needs. Communicable diseases, parasitic diseases and poor nutrition were of great importance to the majority of the world's population in developing countries and research, especially of a developmental type, was needed in these areas. It was agreed that WHO should aim to fulfill this role and to assist the exchange of research information through medical research councils and similar national bodies.

Standardisation of diagnostic materials

Many delegates stressed the importance of establishing standards for diagnostic materials, and it was generally agreed that this should be at an international level. This was of great importance in trying to collaborate in international and national reference centres. The expanding use of diagnostic kits was raised by several countries, and doubts were expressed concerning the standards of many kits because they were generally not subjected to adequate quality control.

It was agreed that WHO should intensify its work on co-ordination of the development of standards and quality control of chemicals and biological diagnostic materials. In addition, member States were urged to take steps to control the quality of commercially-distributed diagnostic materials in accordance with accepted standards.

Traffic accidents

During a discussion on the medical factors involved in traffic accidents, the Australian delegation presented a statement on the effects of the compulsory wearing of seat-belts. This aroused considerable interest and favourable comment on Australia's pioneering efforts in this field.

Cancer research

A discussion on cancer research centred on the long-term planning of international co-operation. WHO's work is mainly directed towards promoting studies in the epidemiology, pathology and control of cancer, and the main responsibility for co-ordinating international co-operation lies with the Organisation.

Most countries agreed that there should be co-operation and co-ordination at an international level, and that there should be standardisation of terminology, classification and examination methods.

Communicable diseases

A report of the Committee for International Surveillance of Communicable Diseases dealt with the International Health Regulations (1969), and made particular mention of the reservations by a number of members concerning the additional regulation that a vaccination certificate against cholera would no longer be required in international traffic. A working group of delegates from thirty-eight countries, including Australia, was formed to discuss the report.

The Committee felt that cholera immunisation was of value for personal protection for people travelling in cholera-infected areas. However, from an epidemiological and disease control point of view, cholera vaccination would not prevent the introduction of the disease into a country, but might even increase the risk of introduction by inducing sub-clinical cases and excretors of the cholera organism.

During a discussion on smallpox, Australia made a short statement pointing out that although it was not a signatory to the International Health Regulations, it applied the Regulations with only minor amendments. The amendments were largely due to its unique geographic position as an island continent.

Liberation movements in Southern Africa

The Assembly agreed that WHO should widen the scope of its program of health assistance to the peoples in those areas of colonial territories in Africa now under the control of national liberation movements. It also agreed that representatives of the liberation movements recognised by the Organisation of African Unity and by the Arab League should be invited to attend appropriate WHO meetings as observers.

Regional Committee

Australia is a member of the Western Pacific Region of WHO, together with China, Fiji, France, Japan, Khmer Republic, Laos, Malaysia, New Zealand, Philippines, Portugal, Republic of Korea, Singapore, United Kingdom, U.S.A., Vietnam and Western Samoa. The annual meeting of the Regional Committee was held in September 1973 in Wellington, New Zealand. The Peoples Republic of China attended for the first time, while Papua New Guinea was there in its capacity as an associate member.

The Committee dealt with a wide variety of matters including the quality of food and drinking water on international flights, disinsection of aircraft, drug dependence, and the teacher training program for health personnel.

International Agency for Research on Cancer

The International Agency for Research on Cancer, which was established under the aegis of WHO, has ten participating States at present—Australia, Belgium, France, Federal Republic of Germany, Japan, Italy, Netherlands, United Kingdom, U.S.A. and U.S.S.R. It is anticipated that Sweden will join the agency soon.

At the meeting of the Governing Council at Lyon on 2-3 May, the Director reported on the agency's activities which included work on environmental carcinogens, chemical carcinogenesis, viruses and cancer carcinoembryonic antigens, as well as programs to develop cancer registration and monitoring systems. The agency's emphasis remained in the field of epidemiological studies, especially in environmental carcinogenesis where its unique international nature enabled it to carry out projects not possible for national institutions.

Regional Teacher Training Centre

The Regional Teacher Training Centre for health personnel was established on the campus of the University of New South Wales following agreements between WHO, the United Nations Development Program, the Australian Government, and the University itself. The Department of Health was closely involved in all stages of the negotiations leading to the setting up of the centre and, together with the Departments of Foreign Affairs and Education, is represented on the Centre's co-ordination committee.

The aim of the Centre is to improve the teaching techniques of those health workers involved in teaching—in other words, to train them in the science of pedagogy. Training in their own particular professional health discipline is *not* seen as a primary function of the Centre. The objective is rather to produce efficient and effective teachers for the health professions.

During the year the Centre conducted or assisted with six group educational activities in which a total of 131 key educators in health fields participated. Two of these activities were for medical deans from the Western Pacific, while three were interdisciplinary in nature, with participants from the nursing and allied health professions. The sixth was an interdisciplinary national workshop with thirty-six participants which was held in Malaysia with the active support and co-operation of the Malaysian Government.

The educational workshops mounted by the Centre are simulations of teaching situations which incorporate simple, but quite radical, changes in traditional educational practices. A basic concept of educational efficiency underlies these simultations—namely that objectives must be specified at the

outset and that learning strategies and evaluation procedures should be appropriate to these objectives. Following the simulation, participants undertake to implement an innovative practical project on their return home.

It is understood that two member States of the Western Pacific Region, each of whom has sent a number of participants to activities in Sydney, plan to establish corresponding national centres for the training of teachers of health personnel during 1975. It is also anticipated that other national groups will hold workshops in a number of countries, including New Zealand, on the Regional Teacher Training Centre pattern in the latter half of 1974. Invitations to the Centre to assist in these activities are currently being examined.

Member countries of the Western Pacific have been notified of two further Sydney workshops in 1974, while plans are being made to conduct national and international workshops in 1975 on a variety of themes. In addition, WHO will support Fellows nominated to attend a newly-established twelve-month course leading to a Master's degree in Health Personnel Education.

South Pacific Commission

The fifth conference of Directors of Territorial Health Services of the South Pacific Commission was held in Port Moresby from 11-15 February 1974, and was attended by representatives from American Samoa, British Solomon Islands Protectorate, Cook Islands, Fiji, French Polynesia, Guam, New Caledonia, New Hebrides, Papua New Guinea, Trust Territory of the Pacific Islands and Western Samoa. Australia attended in an observer capacity but participated fully in all discussions. Observers were also sent by WHO, the Commonwealth Secretariat and other organisations.

The agenda covered a variety of health matters such as the epidemiological status of the territories, an evaluation of the Commission's health program for 1973 and projections for future years, and a review of present programs on nutrition, fish poisoning and dengue fever. The use of telecommunication satellites for medical education in the South Pacific was also discussed, and technical discussions were held on the subject of pre-school child health.

This was the second successive meeting attended by a Departmental officer, and it is anticipated that attendance will be on a regular basis from now on. With Australia's rapidly-growing interest in regional organisations and in the South Pacific area generally, participation in such meetings is expected to assume increasing importance.

Australian Foreign Aid

The Department is the principal consultant to the Department of Foreign Affairs and to the newly-established Australian Development Assistance Agency on the health aspects of foreign aid programs. The programs have two complementary components—external medical aid and the training of overseas Fellows in Australia.

External medical aid

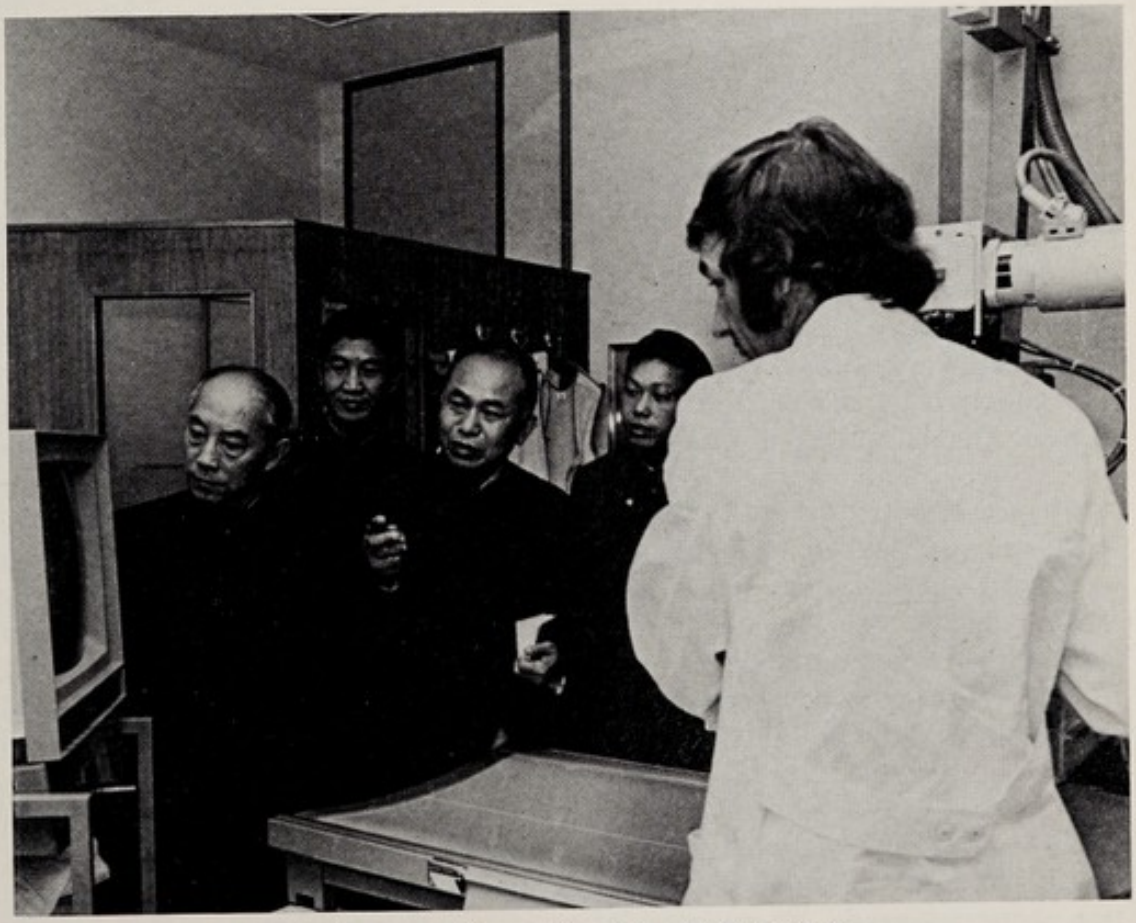
During the year, the Department provided advice on medical aid proposals in Indonesia, Singapore, Vietnam, Burma, Bangladesh and other countries of South-East Asia.

An officer of the Department visited Java and Sumatra in December 1973 at the request of the Department of Foreign Affairs to assess the progress of medical aid projects in operation and to discuss possible future programs. A visit was also made to Vietnam for a similar purpose, but with particular emphasis on establishing guidelines for future projects in the health fields, including the development of training programs within Vietnam involving short visits by Australian specialists.

An officer of the Department had visited Bangladesh in March 1973 to assess the possibility of a medical aid program to assist in the rehabilitation of those injured in the war. As a result of this study and after consultations with the Government of Bangladesh, it was decided to assist in the field of plastic and reconstructive surgery. Three teams, each consisting of a plastic surgeon and an anaesthetist, visited Bangladesh during the year for a period of six weeks each.

Training of overseas Fellows in Australia

A total of ninety overseas post-graduate medical and paramedical Fellows began their training during the year. Many trainees required placement in more than one training institution, and some individual training programs involved as many as ten placements. Training was arranged in many fields of post-graduate medicine and surgery, dentistry, pharmacy, physiotherapy, occupational therapy, dietetics, medical records librarianship, laboratory technology, radiography, and various aspects of health administration.



The Department organised a tour of inspection of health facilities in Sydney, Melbourne and Canberra during the year for a party of Chinese Government health officials. Here the party inspects modern radiography equipment at Woden Valley Hospital in Canberra.

A further twenty-one Fellows attended the second international group training course in health and hospital administration from September to November 1973.

The Department was represented at a number of inter-departmental meetings and was a member of various working parties on aid and training. Visits were made to hospitals and other training institutions concerned with the training of overseas Fellows.

Other activities

At the request of the Public Service Board, an officer of the Department visited Papua New Guinea late in 1973 to assist in formulating medical transfer procedures for Australian public servants working for the Australian Government in Papua New Guinea, and their dependants.

The Department again arranged programs for a number of visitors from overseas during the year. Among them were the Minister for Health in Papua New Guinea, Dr Taureka, the Canadian Minister for National Health and Welfare, M. Lalonde, and a delegation from the Peoples' Republic of China. The Chinese delegation—the first of its kind to visit Australia—was led by Dr Chen Hai-Feng, Director of the Department of Education and Scientific Research, Chinese Ministry of Health.

The Department was also responsible for the selection of Australian Fellows to take up WHO Fellowship awards and to attend training seminars conducted by WHO during the year.

A.C.T. Health

The year saw major strides towards establishment of the Capital Territory Health Commission.

Pending completion of legislation under which the Commission was to be set up, an Interim Committee was established in April 1974 with the same membership as that proposed for the Commission. It is co-ordinating arrangements for the establishment of the permanent organisation.

Members of the Interim Committee are Dr Ronald Wells, Chairman; Mrs Helen Crisp, Deputy Chairman; Dr Sidney Sax, Chairman of the Hospitals and Health Services Commission, as representative of that Commission on the Capital Territory body; Messrs Jim Pead and Gordon Walsh, representing the A.C.T. Advisory Council; and Miss Jennifer James, Director of Nursing at Canberra Hospital, who was elected as staff representative.

Pending formal establishment of the Commission, A.C.T. Health Services continued to provide a wide range of health services for the growing population of the Territory.

Health centres

Four health centres were opened in Canberra during the year—three in specially-built premises and one in temporary accommodation pending construction of an appropriate building.

The first opened at Melba in July 1973 and the second the following month at Scullin. Their early opening was in keeping with the Government's wish to demonstrate publicly how the centres worked and to explore organisational problems associated with their operation. The third centre, a temporary one at Narrabundah, opened in October 1973, and the City Health Centre opened at Civic in March 1974.

The centres are intended to improve health care by gathering medical, dental and associated health personnel under one roof so that they can work together more effectively as a team to give comprehensive family medical care. The Melba, Scullin and City centres offer emergency care outside normal hours, ensuring that people in the areas have seven-day a week, twenty-four hour a day medical cover, while the Narrabundah centre provides only a business hours service because of staffing limitations imposed by the small site in use. Further details of the four centres are set out below.

MELBA: Melba Health Centre opened in a developing area with no private general practitioners. The demountable building, designed to serve 10,000 people, has accommodation for four doctors, two dentists, clinic and domiciliary nurses, a mothercraft sister, social workers, a physiotherapist, and pharmacy, clerical and reception staff. All services at the centre are free apart from dental and pharmaceutical. Use of the centre is restricted to residents of five local suburbs whose population grew quickly to reach an estimated 7,500

The City Health Centre in Canberra—the fourth community health centre to be opened in the A.C.T. It also offers an alternative outpatient service for people who find it difficult to get to a hospita outpatient treatment area.

by the end of June 1974. Of that number, about 4,000 had registered at the centre.

SCULLIN: When Scullin Health Centre opened, the surrounding population was for the most part already established. The building and services are substantially the same as those offered at Melba, though there is no pharmacy since others were already available in the area. Scullin has four private fee-for-service doctors, and the two dentists are also private rather than salaried. Approximately 4,000 families had registered at the centre by the end of June 1974. There are no fixed suburb boundaries for the services provided by the private doctors and dentists operating from the centre.

CITY: City Health Centre not only provides a community health service, but also offers an alternative outpatient service for people who find it difficult to get to a hospital outpatient treatment area. Like Melba, it employs salaried doctors.

NARRABUNDAH: The interim health centre at Narrabundah was opened in response to urgent local needs when the private medical practice in the area closed. Pending establishment of a permanent building, a small team of salaried medical, nursing and counselling staff is providing service from temporary accommodation during normal office hours, five days a week.

New centres

Three further community health centres are now under construction—at The Village in the new town of Tuggeranong, where completion is due in October 1974; at Kippax, due for completion about the end of 1974; and at Phillip, where the health centre building will provide regional headquarters

for mental health, child health and nursing services for southern Canberra. Completion date at Phillip is March 1975.

Planning is well advanced for a further four major health centres in Tuggeranong, so that services will be available as the new residents need them. The specific needs of Gungahlin, another planned residential region in northern Canberra, are being studied to assess the need for health centres there. At Weston Creek, in the city's south-west, residents have asked that a large health centre be built with three smaller associated centres, providing a sub-regional service.

Evaluation

Evaluation is an integral part of the health centre program. There is already some evidence that the centres have reduced hospital stay, limited prescribing of certain drugs, and improved family care by permitting better case communication between health professionals.

Experience to date indicates that the health centres will facilitate recruitment to areas of general practitioner shortage. The A.C.T. centres have attracted as many doctors as necessary and applications for positions continue to be received. Recruiting is continuing so that medical staff will be available as new health centres open.

It has been shown at the centres that paramedical workers can be used on appropriate tasks that normally are done by medical practitioners, thus freeing the doctors to spend more time on problems that demand medical expertise.

Acceptance by patients of referral to health workers other than doctors has been greater than was expected.

Community involvement

Local involvement in planning, administration and day-to-day running of each community health centre has been encouraged by the Government and welcomed by staff of the centres. Public involvement in the centres has provided a forum for local residents to discuss their requirements on health-related issues such as child care and sporting facilities. Activities of local health centre committees have contributed to development of a sense of community in their areas.

Rehabilitation

One purpose of the community health program is to assist the injured, handicapped and elderly to live as normal a life as possible with their families, rather than have them placed in institutions. Health centres assist by making available domiciliary care to back up more specialised services provided by a mobile rehabilitation team, or by the sophisticated rehabilitation facilities at Woden Valley Hospital which can be used on a day-visit basis.

Mental health

The year saw major development within the Mental Health Branch of techniques for the treatment of children with behaviour disorders. These included laboratory methods with children who had failed to respond in any other way, a variety of parent-oriented techniques designed to help them cope

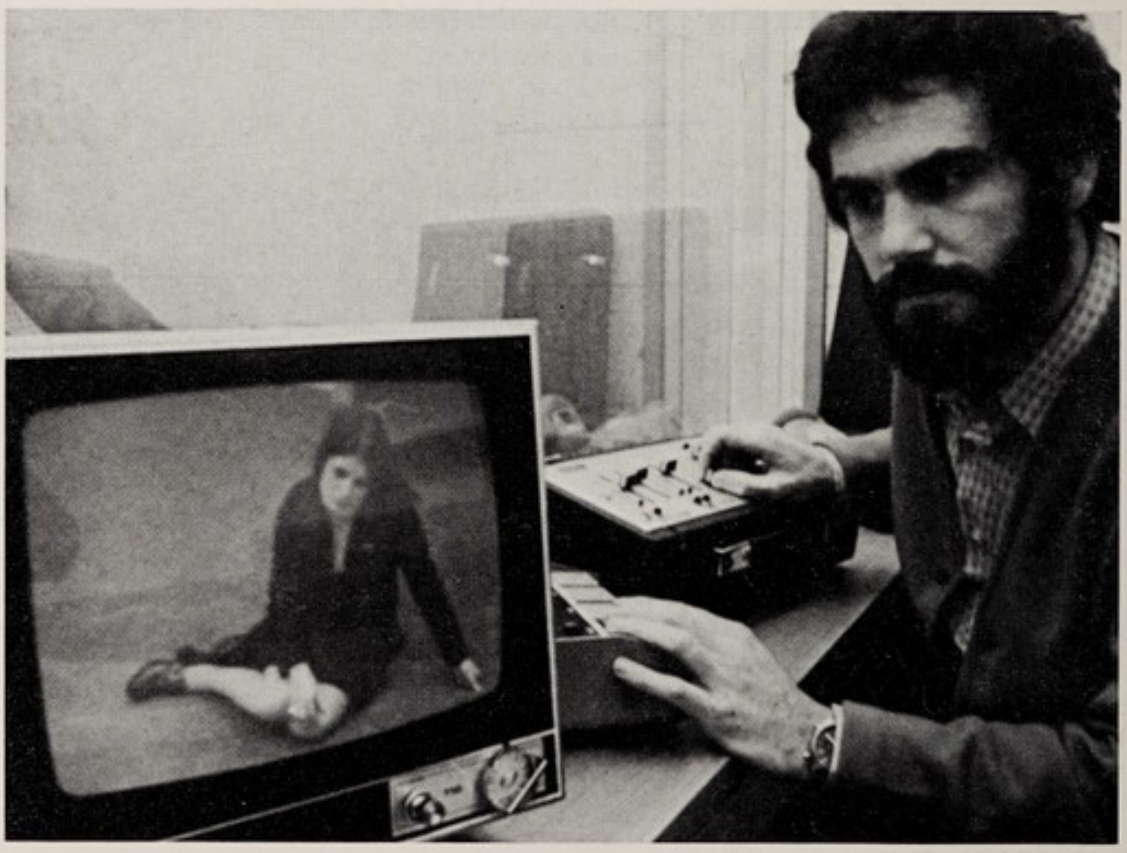
with their disturbed children, and the use of a videotape camera in monitoring mother-child responses.

The videotape camera and a sound unit is also used in the training of mental health counsellors, offering both subjects and trainees the chance to see themselves as others see them. The camera is used in a two-way mirror room, and the operator is unnoticed as he takes a record of a counselling situation for a mother and her disturbed child. Instructions are given to the mother through an earplug-receiver to help her modify the child's behaviour, and a video replay allows her to assess results.

In the sphere of child-family work, there was considerable consultation in health centres and a program for enuresis sufferers, based on the centres, was set up. Feasibility studies were done for the development of parent education programs.

The adolescent counselling service continued its pioneer work on drop-in centres using volunteer workers, and this helped stimulate other agencies to begin similar work. Once this stage had been reached, the service chose to discontinue operation of its own drop-in centre. Instead, it broadened its approach by training volunteers from other agencies in counselling techniques which would help them assist teenagers requesting advice.

Services for the intellectually handicapped involved participation in the planning of hostels, detailed diagnostic work, consultation on rehabilitation facilities and participation in operation of a therapy centre for very young handicapped children, development of evening studies for further education of the handicapped, development of sex education for the handicapped and



Social worker Eryl Evans operates a videotape unit used by the Menta Health Branch of A.C.T. Health Services as a counselling aid and for teaching purposes. Through its instant replay facility, the unit permits those receiving counselling to view their own recent behaviour, which helps the counsellor to point out behaviour patterns which should be changed.

for their parents, setting up of recreational programs such as camps, and the integration at play of intellectually handicapped pre-school children and normal children.

Health facilities

A major item on the busy program of the Health Facilities Section was the arrangement of tenders for the 300-bed Calvary Hospital in the suburb of Bruce. Work on the hospital began in April after a contract for $15.7 million was let.

Consultant architects appointed by the Section to make a feasibility study of the Belconnen Health Complex completed their task. The first stage of the complex is to provide 400 beds with full support services and teaching facilities.

Construction of the first stage of a Central Hospital Services Complex in the new industrial suburb of Crace began early in the financial year, and although some time was lost because of bad weather and industrial disputes the buildings should be completed by mid-1975.

Intensive planning by the Section preceded the calling of tenders for four health service hostels in Canberra. A forty-bed hostel at Bruce for the intellectually handicapped is to be built at a cost of $1,290,000, while $1,305,912 will be spent on a similar-sized hostel at Narrabundah for the psychiatrically ill. Intellectually handicapped children and young people are to be accommodated in two ten-bed hostels. One, at Chapman, is to cost $256,168 and the other, at Melba, $235,005.

The Section began planning new facilities for Canberra Hospital including consulting suites for full-time specialists, a new renal ward, and a possible extension of the podium area to provide new intensive care and coronary care facilities, plus an enlarged outpatients and emergency centre.

Handicapped children

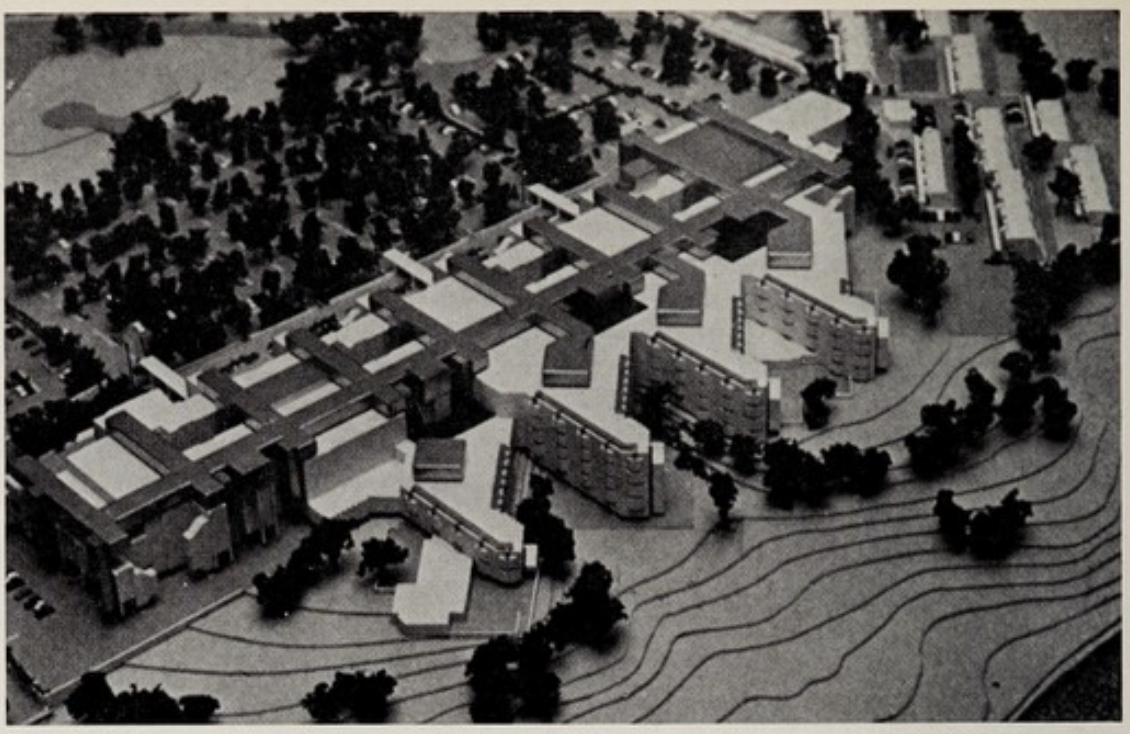
Special Canberra pre-schools which offer therapy services to handicapped children had become increasingly overcrowded in recent years. However, relief was provided in February with the opening of a therapy centre in the suburb of Griffith to cater for both mentally and physically handicapped children and their parents, using staff provided from health and educational sources. Towards the end of the year, attendances had risen to approximately fifty.

School Medical Service

The School Medical Service examined 26,609 children during the year. The incidence of notifiable defects was 7.5 per cent, as against 10 per cent in the preceding year.

School Dental Service

Four dental therapists who graduated in December 1973, began work in school dental clinics in January 1974. The Service now has seventeen dental officers and sixteen dental therapists, while another ten therapists are being trained at the Hobart Training School.



A model of the proposed health complex to be built in the northern Canberra district of Belconnen. The 400-bed first stage is due to open about 1980, with a further 400-bed stage to follow about five years later.

The number of children examined by the Service during the year increased from 20,686 in 1972-73 to 23,918.

Continuing investigation of the results of fluoridation of Canberra's water supply showed steady improvement in the teeth of children who have lived in Canberra since fluoridation began in 1964. These children had 55.8 per cent fewer defective permanent teeth and 74.7 per cent fewer decayed permanent teeth than children who had been examined at the corresponding age just before fluoridation began.

Immunisation

Rubella immunisation was offered to all twelve to fourteen year old girls in high schools during the year because of the poor response in previous years to programs of vaccination during school vacations. Only 1,312 girls, half the estimated number eligible for immunisation, attended. Nevertheless this was double the number who had attended during holiday clinics in the previous year.

A total of 14,823 doses of Sabin vaccine was administered as protection against poliomyelitis while 18,559 doses of either triple antigen or combined diphtheria and tetanus vaccine were given and 1,256 children were immunised against measles.

Chest X-ray survey

The 1973 compulsory chest X-ray survey of the adult population of the A.C.T. concluded in August 1973. The total attending for X-rays was 68,569 while exemptions were granted to 8,253 people on various grounds. Only 3,724 or 4.5 per cent of those requested to attend failed to do so. A review of these indicated that most would have qualified for exemption. Hardcore refusals were estimated at about 500.

Of those X-rayed, 619 were recalled for further investigation. Thirteen active cases of tuberculosis were notified as a result of these investigations while 220 inactive cases were discovered, with 301 other significant abnormalities. This latter group included twenty-one intrathoracic malignant tumours, twenty-four cysts, goitres and abscesses, 127 cases of chronic obstructive bronchitis and fifty of cardiac abnormalities. Twenty-one patients were referred for chest surgery, with excellent results. Treatment was started for all patients with tuberculosis.

A total of twenty-seven cases of tuberculosis was notified in the A.C.T. in 1973, including the survey cases. Two other cases were notified to the N.S.W. authorities.

Patients seen by the Chest Clinic physician totalled 3,519, a significant increase over 1972. There was also an increase in the number of tuberculin tests and B.C.G. vaccinations.

Infant welfare clinics

New infant welfare clinics were opened in the suburbs of Macgregor and Evatt during the year. Attendances at all clinics totalled 81,646 and 17,175 home visits were made.

Infant health

Medical examination of children at nine months, three years and pre-school age continued, with a total of 5,797 children seen during the year. Incidence of notifiable defects was 15.5 per cent.

Transport

An average of about ninety handicapped children were transported each day on Health Service buses between their home and their school, while some fifteen rehabilitation patients were taken to and from Woden Valley Hospital, which has extensive rehabilitation facilities. Pathology, linen and sterile supplies were transported between Canberra and Woden Valley Hospitals, and between Canberra Hospital and such places as Birralee Hostel for Handicapped Children and the Queen Elizabeth Home for Nursing Mothers.

Ambulance service

A new $80,000 ambulance station was opened at Belconnen in August 1973. It has bays for six ambulances, a communications room, kitchen, showers and work room. The station is manned by two officers from 8 a.m. until midnight, seven days a week. Two new four-berth ambulances arrived late in the financial year to replace two, two-berth ambulances of the type being phased out.

Physiotherapy

The Physiotherapy Section was enlarged during the year to serve the health centres and the mobile rehabilitation unit, in addition to the Child Health Section. There are now seven full-time physiotherapists, plus five working on a sessional basis. The opening of the Griffith therapy centre for handicapped children under three years of age increased patient loads in the child health area.

Government medical officers

Medical officers gave 38,224 vaccinations during the year compared with 31,495 in 1972-73, while clinical examinations increased from 12,080 to 14,627.

Public Health Laboratory

The Public Health Laboratory was required to test more than 1,600 water samples, following the pollution of Lake Burley Griffin by sewage from Queanbeyan (N.S.W.) on several occasions from January 1974. During periods of pollution, health inspectors collected water samples daily. Laboratory tests showed the level of contamination, enabling Public Health officers either to extend warnings against use of the lake or to announce when the danger was past.

A.C.T. health inspector Murray Austin sampling the water of Lake Burley Griffin in Canberra, prior to testing by the Public Health Laboratory. This was a frequent job during the year when the lake was polluted several times by sewage from Queanbeyan (N.S.W.).

This work was in addition to the normal duties of the Laboratory, which tests a wide range of samples.

Nursing services

The role of nurses working in the community changed with the advent of health centres. A central base for the District Nursing Service remains, but an increasing number of nurses are working in and from health centres as part of the health care team.

A community nursing course was arranged during the year, with an intake of ten nurses beginning studies on 1 July 1974. The twelve-month course is to include child health, district nursing, health education and crisis intervention. It is designed to produce versatile community health nurses who will be interchangeable in any area of activity.

The total number of visits made during the year by the Nursing Service was 37,806.

Woden Valley Hospital

On 1 May 1974 the $5 million community health block of Woden Valley Hospital was officially opened. This building represented the second stage of the hospital's construction. The block has a capacity of 222 beds for geriatric, psychiatric and rehabilitation patients. It has excellent facilities and equipment for its occupational therapy and physiotherapy departments, including a heated pool for hydrotherapy.

The Occupational Therapy Department has metal and woodwork shops, sewing and weaving rooms, a recreational therapy room and an aids-to-daily-living area where patients are re-trained in home-making skills such as cooking and washing.

Within a month of opening, the block had ninety beds available, of which seventy-two were being used temporarily as nursing home beds pending construction of a nursing home at Narrabundah. A 'day centre' program in the community health block permits elderly and handicapped people from outside the hospital to visit any or every weekday for creative and recreational activities.

Veterinary services

Unusually high rainfall through the year brought problems of internal parasites and enterotoxaemia in sheep and cattle, as well as bloat and footrot. Autopsies were conducted to help define causes of death, and assistance was given in the investigating of routine problems such as tetanus and traumatic gastritis. Progress continued toward the important goal of eradication of cattle tuberculosis and brucellosis.

Health education

The Health Education Section concentrated on moulding its services more closely to the needs of the community during the year.

The Section has been developed as a resource centre for interested organisations, and books and films on topical subjects have been made available to school and discussion groups. The films, used in conjunction with approved health educators who speak and function as discussion leaders,

have proved popular. An integrated health education program has been implemented in primary schools throughout Canberra.

Institute of Anatomy

Museum activities at the Institute of Anatomy were concentrated on the renovation and the updating of older displays. Exhibits continued to attract large numbers of visitors. Further additions were made to the National Ethnographic Collections. Air-conditioning plants are being installed for the two museums, the lecture theatre and the library.

Research

A major project for the Research Section was the establishment of data collection systems to provide a basis for the evaluation of community health centres. This involved the setting up of medical records systems in the centres. Other projects included a study of morbidity patterns of patients attending the centres, a study of prescribing patterns of health centre doctors, a study of health centre costs, and studies of bed usage and bed requirements in hospitals.

Mental health research continued to provide valuable information on the epidemiology of psychiatric disorder in the A.C.T., while programs were undertaken to provide continuous evaluation of the results of treatment. A seminar on 'Measurement of Health Care' was organised in May in association with the Postgraduate Committee in Medicine of the Australian National University. The seminar provided valuable assistance in planning the evaluation of health services.

Family planning

Assistance given to the A.C.T. Branch of the Family Planning Association of Australia further increased during the year. In addition to financing the Branch's telephone advisory and information service, A.C.T. Health Services undertook to meet the Branch's annual deficits.

Widespread advertising resulted in increased attendances at clinics operated by the Branch at Beauchamp House and Woden Plaza, while two clinics opened during the year at Scullin Health Centre and at Narrabundah Baby Health Centre. From 1 July 1974, A.C.T. Health Services will pay for this advertising.

A vasectomy clinic is conducted by the Branch at Beauchamp House each Wednesday afternoon.

National Fitness

The National Fitness Section implemented activities for the Fitness Australia campaign in Canberra. It also continued its program of providing introductory classes in recreation skills for housewives, schoolchildren and business people, and conducted vacation swimming schools which attracted more than 5,000 participants.

The A.C.T. National Fitness Advisory Committee approved plans for a National Fitness Camp, and it is hoped that construction will begin in 1974-75.

A.C.T. Health Services psychologist David Fox (right) operating a breath test machine to check the blood alcohol level of a volunteer at an alcohol education evening, held at the Melba Health Centre. The evening was organised by the Centre's community committee to encourage moderation in the use of alcohol.

Pathology laboratories

The year saw an increase not only in the total workload at the two laboratories but also in the variety of tests carried out.

A staff member spent three months at the Fairfield Infectious Diseases Hospital in Melbourne for specialised training in preparation for the establishment of a new virology laboratory. In the past, tissue cultures have been bought, but it is hoped in the coming year to prepare cell lines to enable the identification of viruses in the laboratories.

Professional boards

The Medical Board held twelve meetings and registered sixty medical practitioners during the year. Forty-seven medical graduates were appointed as approved qualified persons to serve a pre-registration period of twelve months at Canberra Hospital. A further newsletter was circulated to all registered medical practitioners in the A.C.T., setting out guidelines in regard to use of doctors' names in news media.

The Dental Board held six meetings and registered sixteen dentists. Eleven complaints about accounts for dental fees were dealt with.

The Pharmacy Board held eight meetings and registered twenty-six pharmacists while the Veterinary Surgeons Board registered eight veterinary surgeons and the Optometrists Board two optometrists.

The Nurses Board held ten meetings and registered 438 general nurses, 160 midwifery nurses, nineteen mental health nurses and 114 nursing aides. The Nurses Registration Ordinance was amended to provide for provisional registration for nurses and nurse aides.

Northern Territory Health

The Northern Territory Medical Service continued to expand or upgrade its wide range of services during the year, despite the challenges posed by a record rainfall, an outbreak of Murray Valley encephalitis, and the general necessity to stretch resources to cope with ever-increasing demands.

The Australia-wide shortage of building materials was a major problem, made worse in the Territory by the cutting for long periods of all main road and rail links because of flooding. However, over 100 major projects in the construction program are under way. New health centres have been built in rural areas, others have been improved, and there are plans to provide more areas with similar centres.

The regionalisation program continued and a number of District Medical Officers were recruited, but many nursing positions, particularly in rural areas, remained unfilled. The shortage of nurses is critical.

In the Aboriginal health field, a project has been launched for the routine collection of a range of statistical information which will give the most comprehensive picture yet obtained of the health of Aborigines. The Aboriginal infant mortality rate declined to the lowest on record, though the percentage drop was only marginal. However, coupled with evidence of a shorter average stay in hospital for Aborigines, it seems that the assault on Aboriginal health problems is now producing results.

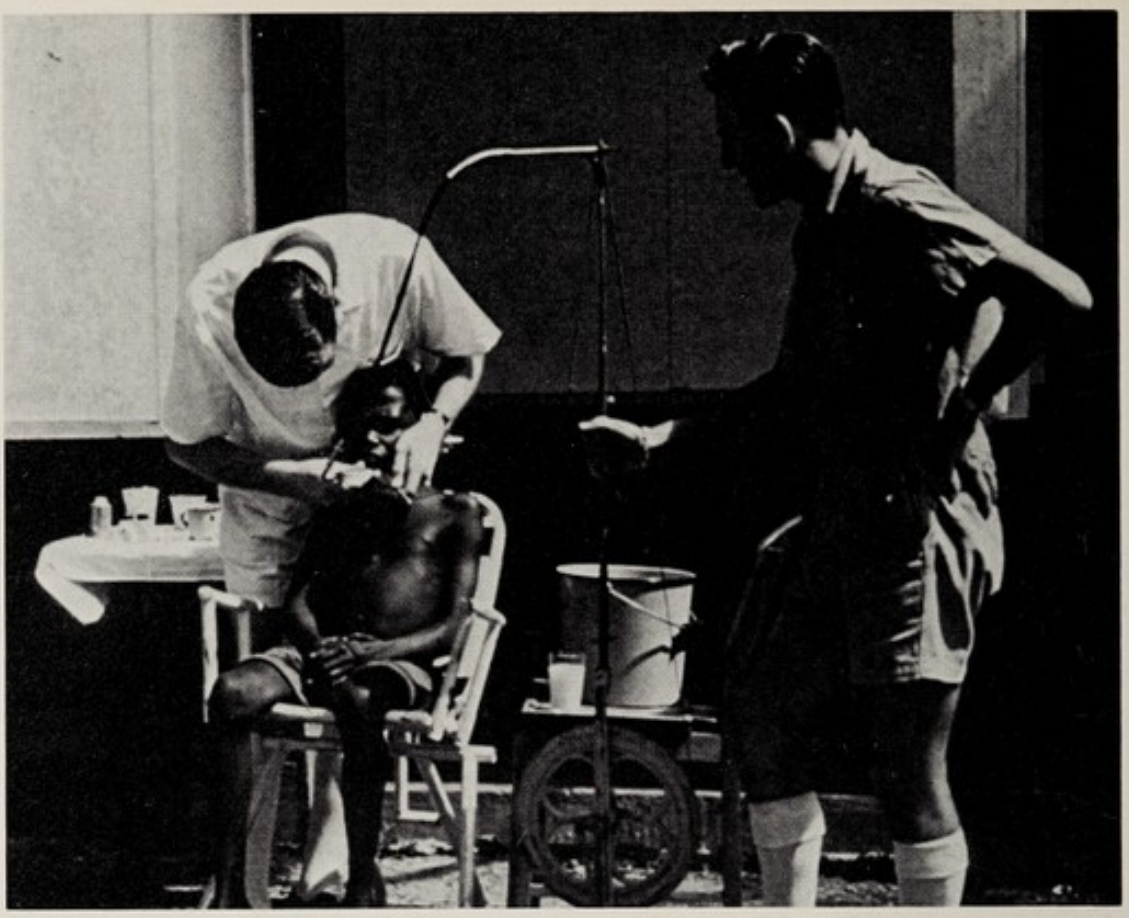
The policy of establishing a new level of community health care was continued and the success of a pilot scheme in Darwin, where a community health clinic provides a range of medical, paramedical and counselling services, augurs well for the future of the nearly-completed health centres in other urban areas.

An innovation during the year was the issuing of weekly Departmental news bulletins. With the co-operation of the local media, the community is not only better informed on policies but also is aware of the problems the Department faces.

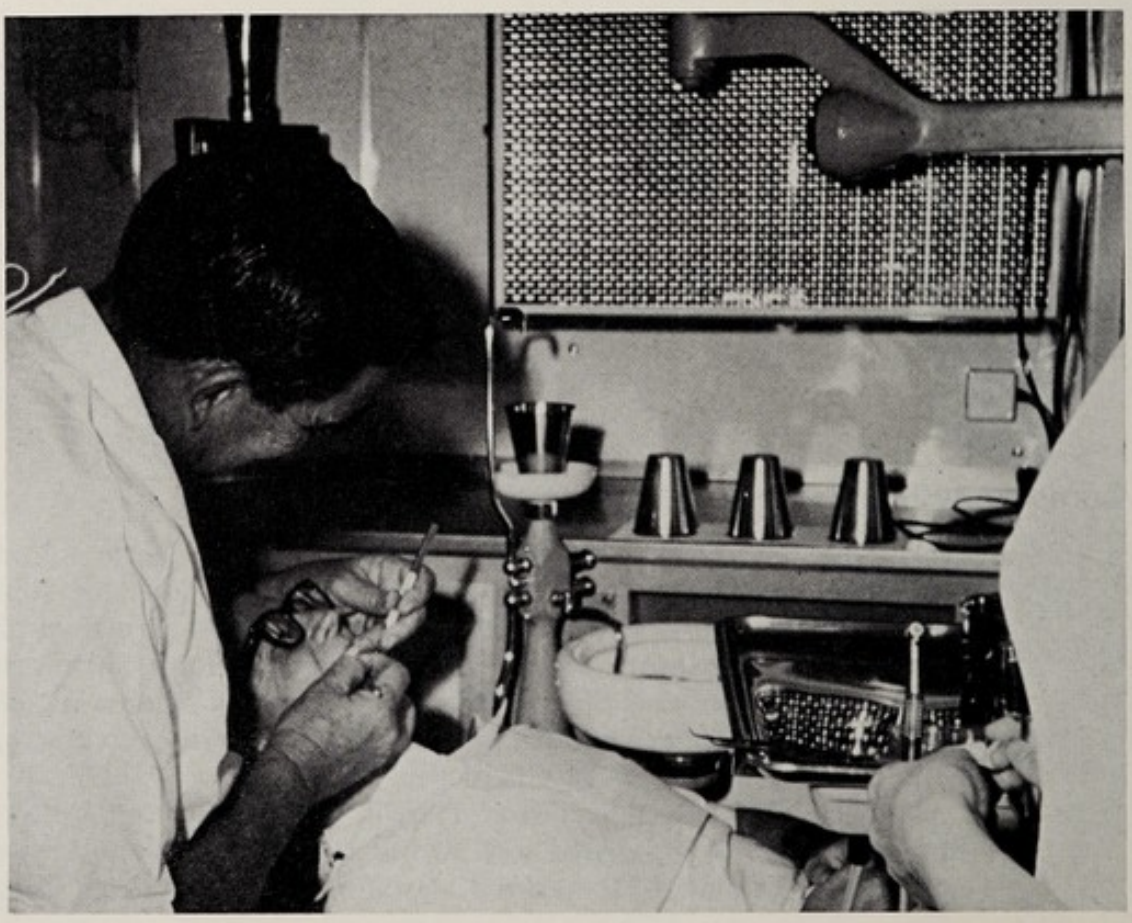
Community health services

The opening of the Peel Street Community Health Centre in Darwin was a significant step forward in health service planning. Adequate staffing of the Centre made it possible to see a larger cross-section of school children for routine medical, hearing and visual examinations. Home nursing services are also provided from Peel Street, while space has been made available in which the Family Planning Association of the Northern Territory and other voluntary organisations can conduct regular clinics.

The Schools Medical Service in Darwin has been operating five immunisation clinics weekly compared with two in 1971, and has arranged three visits per year of National Acoustics Laboratory personnel from Adelaide who



A contrast in dental treatment techniques in the Territory . . . Above, an outback scene from twenty years ago, with the dentist using a pedal-operated drill; below, treatment in a modern dental caravan, used today in rural areas.



carry out audiometry tests and service hearing aids. The Speech Therapy Section coped with increased demands for its services.

In rural areas, the Pine Creek Rural Health Centre was commissioned, while the Community Health Centre in Katherine neared completion, and was expected to open early in the new financial year. Work will begin soon on the building of health centres at Wave Hill and Hooker Creek. An air-conditioned caravan was supplied to Wave Hill for nursing staff accommodation.

Nursing staff who evacuated from Hooker Creek because of fears for their safety returned there following the establishment of a police station at the settlement. Staff at the Daly River Mission also evacuated during the year, because of flooding which forced the entire population to leave.

Another health centre has been commissioned at Roper River (Ngukurr), and a demountable centre with nursing staff accommodation units is shortly to be located at Borroloola.

In the Western Arnhem Land district, the Department was to become responsible for providing health services at Milingimbi, Nangalala and Ramingining from 1 July 1974. This follows approaches from mission authorities. Five self-contained flats were built at Maningrida for nursing staff accommodation.

Health education

The Health Education Section continued to develop programs tailored for the needs of individual groups as well as for the community as a whole. Emphasis was placed on human and community development rather than mere information-giving, in order to deal more effectively with present-day health problems through community involvement.

In Aboriginal health education, regular contacts between health workers and Aboriginal communities were made to establish a mechanism for influencing health behaviour. To reinforce this, regular discussions were held with rural health sisters about their education role. Materials such as flip charts and colour slides were found to be very suitable for Aboriginal communities.

Community involvement was sought in all major towns of the Territory to deal with current problems such as drug and alcohol abuse, and smoking. Seminars, talks and discussions were held and, wherever possible, community organisations were encouraged to co-ordinate these programs.

The Department co-sponsored with the Department of Education and parents' organisations a school health education seminar where a wide range of problems was discussed. This important milestone in the development of the school health education program followed several pilot programs conducted in primary and secondary schools, dealing with the 'newer' health problems such as drug abuse, smoking and venereal disease.

Dental health

Dental services suffered in the first half of the year because of acute staff shortages which limited capacity at the Darwin, Alice Springs and Nhulunbuy clinics. Services to Katherine and Tennant Creek were restricted to short visits to cover emergency needs, and mobile visits to outlying rural centres were curtailed.

However, the second half of the year saw a welcome increase in staffing with all general dentist positions filled, and the opportunity was taken to

direct some of the additional resources into preventive and educational activities at community level. It was possible also to undertake a comprehensive program of visits by road and air in the rural areas, and to increase patient turnover in the clinics. If such outputs can be maintained, the problem of waiting lists will be brought under control.

Dental therapist services to school children began after enabling legislation was passed by the Legislative Council in July 1973. Two experienced New Zealand therapists were recruited and the first Northern Territory graduate from the Dental Therapy Training School in Hobart started duty in January 1974.

Tuberculosis control

Attendance at the Central Chest Clinic in Darwin increased by 57 per cent during the year, providing a major increase in the workload for the Tuberculosis Branch. A permanent medical officer was appointed at the Alice Springs Clinic.

Compulsory X-ray surveys were carried out in Darwin and Alice Springs, and a new X-ray caravan enabled rural areas in the Southern Region to be covered.

Entomology

The Medical Entomology Unit, established in March 1973, now has a staff of four. It moved to a laboratory during the year, and continued its work of studying Territory conditions with a view to organising and evaluating programs of vector control in the main populated areas. The 'Top End' of the Territory is considered to be a highly receptive area for the reintroduction of malaria, due to the presence of large numbers of mosquito vectors. The last indigenous transmission of malaria in the Territory occurred in 1962.

Health education for a group of Aboriginal children from a rural health sister on an outback mission station.

In collaboration with the Department of the Northern Territory, a vector control program was begun in Darwin and similar programs were planned for other urban centres.

The value of the Unit was demonstrated during the outbreak of Murray Valley encephalitis. Timely action in introducing appropriate vector control measures possibly stopped a more serious outbreak of the disease. Subsequently the Unit, with the co-operation of the School of Public Health and Tropical Medicine and the Queensland Institute of Medical Research, started a research program on the disease.

An active surveillance program began to detect the entry of exotic mosquitoes via overseas aircraft. Intensive vector surveys carried out in a proposed major urban development area revealed potential health hazards. Appropriate vector control methods were suggested to the developers. Rural health nurses and health inspectors were given basic training in medical entomology, with particular emphasis on detection of the insect vectors of malaria and arbovirus diseases.

Leprosy control

The East Arm Leprosy Hospital continued its programs of clinical investigations, reconstructive surgery and rehabilitation of leprosy patients. Hospital staff again made routine visits to rural areas to assess deformities and to give instruction in physiotherapeutic measures.

Quarantine

The number of aircraft and sea vessel clearances was similar to that of the previous year, although aircraft clearances were hampered to some degree by extensions to the Darwin airport terminal. Particular attention was paid to flights from the Indonesian island of Bali where foot and mouth disease is widespread. International flights from Bali terminate in Darwin.

Preliminary investigations were carried out for construction of a new quarantine station in Darwin, while work began on a new quarantine depot at Alice Springs. At Gove and Groote Eylandt increased shipping activities placed a heavier workload on the health inspectors responsible for quarantine duties.

Legislation

The work of the Legislation Branch increased further. Important health-related legislation passed in the Territory's Legislative Council during the year concerned dental therapists, emergency medical operations, midwives and termination of pregnancy.

Planning

The year was one of disappointments for the Master and Project Planning Branch, with the works program severely delayed by the abnormal weather. The commissioning of several completed works was also prevented by delay in the delivery of necessary equipment and furniture.

However, construction of the main ward block for the new Casuarina Hospital in Darwin began. Stage one of the project is expected to be com-

pleted in 1977. Progress on the new Alice Springs Hospital was maintained at a satisfactory rate despite the problems caused by the wet season. Plans for the development of Tennant Creek Hospital were presented to the Parliamentary Works Committee in April 1974, but the dissolution of Parliament delayed further action.

Development and research

The Development and Research Branch continued its program of review and evaluation of existing health services during the year, and examination of future services.

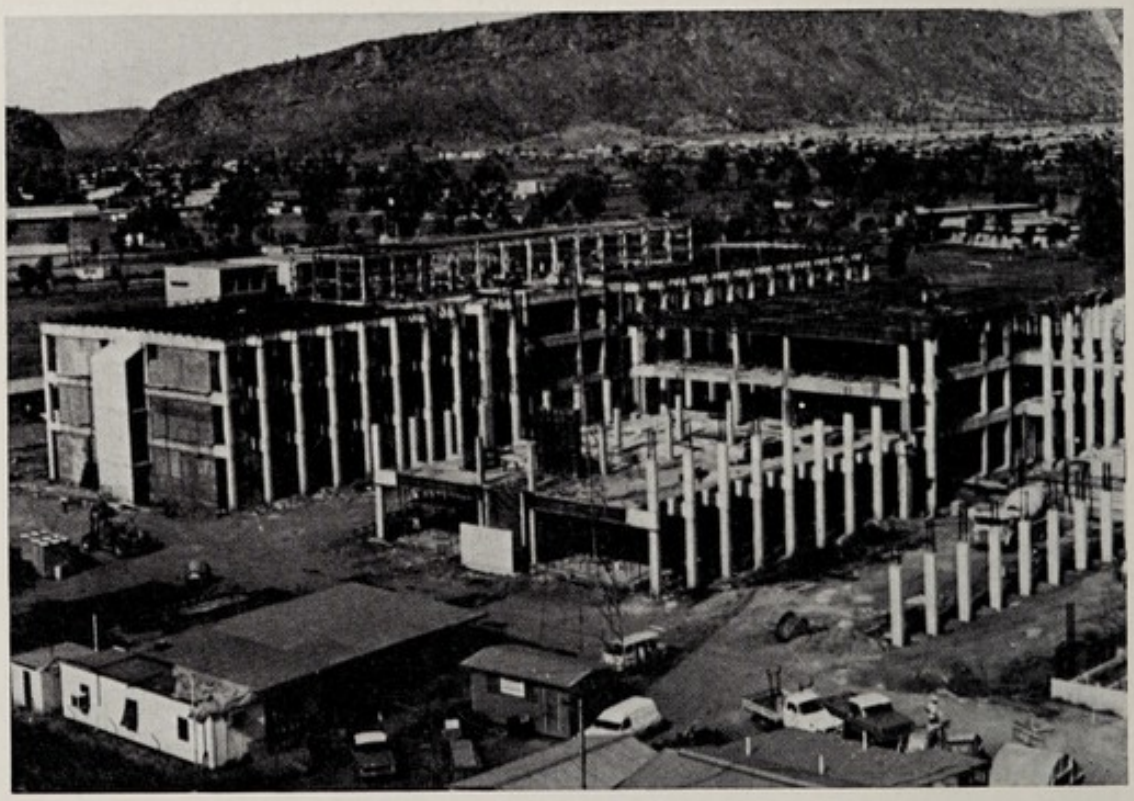
The Branch was involved with other Government departments and outside consultants in the planning of a new town outside Darwin, which will service the East Alligator Uranium Province and other urban locations in the Northern Territory. Other projects involved the assessment of implications of proposed legislative changes, and the implementation of recommendations of the Committee of Inquiry into Health Services.

The Branch co-operated closely with other agencies in an attempt to obtain more statistical data from rural areas. However shortage of reporting staff in the field is hindering the introduction of expanded statistical systems.

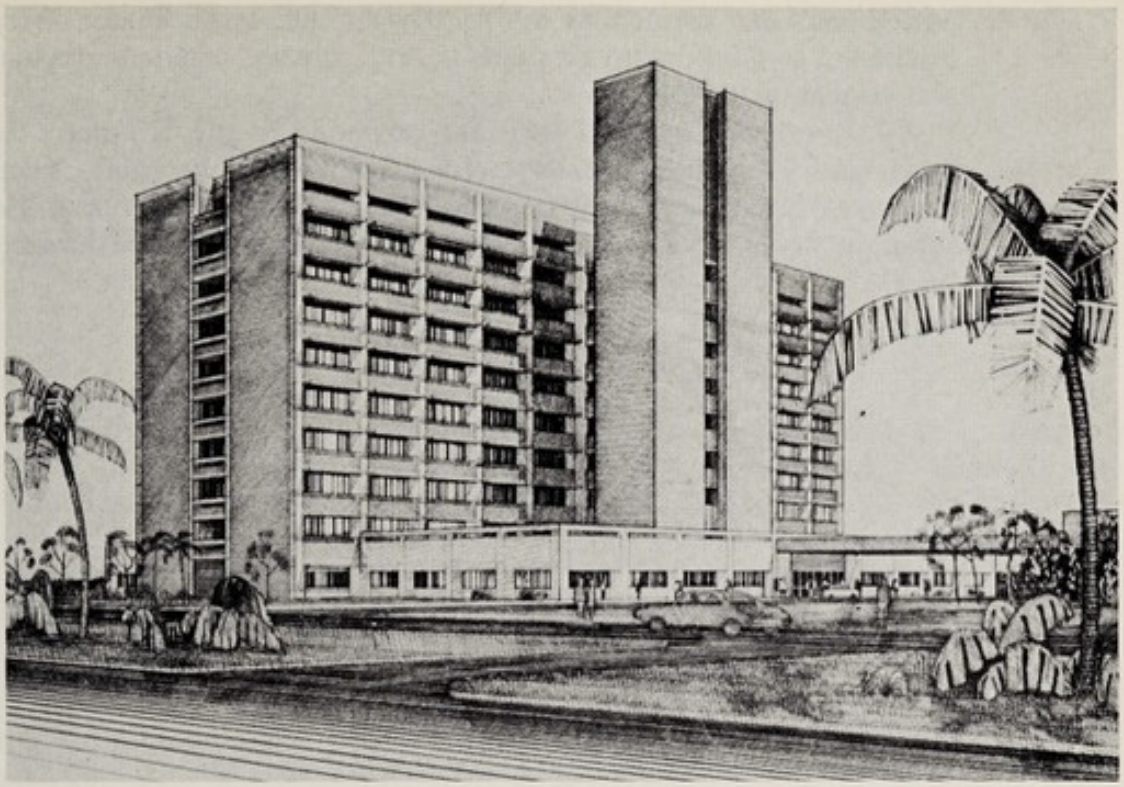
Base hospitals

The opening of a village of bedsitter units in Alice Springs for single sisters marked a new approach to hospital staff accommodation. Unlike past accommodation, these units are located away from the hospital grounds.

The problem of recruiting staff continued during the year and to some extent was compounded by a shortage of married accommodation in Alice



Progress on the new hospital under construction at Alice Springs. This is the main ward block which will house the outpatient and casualty wards.



An artist's impression of the new hospital now being built at Casuarina, in Darwin. The first stage is due to be completed in 1977.

Springs. Despite the staff shortage, there was no drop from previous years in the number of patients treated.

At Darwin hospital, two thirty-two-bed demountable wards were opened, easing pressure on accommodation. Other building work included extensions to the X-ray department and the operating theatre complex.

An improvement in staffing enabled Gove District Hospital to extend the scope of its service to embrace more surgery and obstetrical work. Inpatient numbers continued to increase, so that the hospital began to function more in its capacity as a regional hospital.

Regional matters

The general shortage of nursing sisters in the Territory's four regions is not expected to change in the near future. However an increasing proportion of primary health care is being undertaken by Aboriginal nursing assistants and health workers. This trend was illustrated in Hooker Creek during the year following the withdrawal of the nursing staff (mentioned earlier) when the health service was provided for some months by Aboriginal nursing assistants, supported by weekly visits of the Aerial Medical Service.

A similar situation arose at Umbakumba in the East Arnhem region where Aboriginal staff were supported by regular visits from medical and nursing staff, while in some isolated areas of the region Aboriginal health workers are coping alone, supported only by radio advice. This is occurring in traditional tribal areas to which a number of Aboriginal groups have returned from Yirrkala Mission.

In the Southern Region, an inter-departmental committee was formed to co-ordinate efforts to up-grade facilities at Aboriginal communities. It has already had a surprising degree of success. A communicable diseases com-

mittee was also formed to act as advisor and co-ordinator in case-finding, treatment and follow-up of patients and contacts, epidemiological surveying and education of the public.

All Aboriginal hospital assistant positions in the Southern Region were filled, and Traditional Healers were employed at Warrabri, Yuendumu and Papunya. Induction courses were held for these Traditional Healers who subsequently proved very valuable in explaining Western medicine to their people.

Divisional Offices

The Divisional Offices in the State capital cities continued their front-line role during the year, performing a variety of day-to-day administrative functions for the Department and supervising the operations of regional and laboratory outposts within the States. Most of the offices reported expanding workloads, particularly in the quarantine and pharmaceutical benefits areas of their activities.

Quarantine

With the ceaseless growth in traffic from overseas, all aspects of quarantine work correspondingly increased. More and more wide-bodied aircraft are arriving in Australia, and their larger passenger capacity has continued to cause problems in visual inspection of passengers and disinsection procedures, particularly in Sydney where some fifty of the aircraft arrive each week. However, discontinuation in January 1974 of the former Statutory Declaration system has resulted in speedier clearances through health control.

In Perth, another busy first port of call for aircraft, a problem arose concerning accommodation of transit passengers after health clearance. However, building alterations which have been proposed are expected to solve the difficulty.

Quarantine stations continued to house a stream of air travellers who arrived without valid smallpox vaccination certificates, and the Department's biggest station, at North Head in Sydney, was in almost constant use throughout the year. The Department makes every effort to cater for any unusual needs of people detained in quarantine, providing specialist medical attention if required or preparing special diets, which sometimes poses major difficulties for the staff. No effort is spared to make a stay in quarantine as comfortable as possible.

In Queensland, tenders were called for the erection of a modern isolation hospital at Cape Pallarenda, near Townsville, to cope with increased requirements of the busy northern port. A full-time quarantine officer was also appointed to Townsville for the first time. In Victoria, a new accommodation block was built at the Portsea Quarantine Station.

In the animal quarantine field, the continuing increase in importation of dogs and cats from the United Kingdom and New Guinea, together with the change in regulations to permit importation of horses from the United Kingdom by air, has caused accommodation problems. Additional quarantine accommodation is being provided for dogs and cats in Adelaide and Brisbane, while in Sydney the search continued for an alternative site to the Abbotsford Animal Quarantine Station.

Quarantine staff from the Tasmanian Divisional Office were again kept busy clearing Japanese fishing boats which use Hobart as a first port of call.

Quarantine officer Ray Carroll from the New South Wales Divisional Office supervises the disposal of ships' garbage at the municipal incineration plant at Waterloo, Sydney. All garbage from overseas vessels berthing in Sydney is now destroyed by incineration, under strict supervision by the Department.

A total of 247 Japanese vessels entered the port during the year. The Tasmanian office also reported an increase in the volume of imported plant material passing through the Plant Quarantine Station at Bruny Island.

An unusual problem for the New South Wales Divisional Office arose when a number of ships were forced to anchor some two to three miles off the port of Newcastle, awaiting berths. Reports were received alleging that garbage from the ships was washing ashore on Newcastle beaches. Immediate instructions were given to the ships' masters concerning restrictions on the release of garbage.

Pharmaceutical Benefits

All States recorded an increase in the volume of prescriptions processed under the Pharmaceutical Benefits Scheme. However, the number of applications from doctors to prescribe 'special authority' drugs dropped sharply because of the removal of a large number of drugs from the restricted list.

In some States, increases in the number of chemists necessitated an increase in liaison and inspection activities by Departmental pharmacists. A trend observed in the South Australian Divisional Office was an increase in the number of forged prescriptions for narcotics and other drugs. Inspection pharmacists drew the attention of doctors and chemists to the increase.

The Director of the Victorian Divisional Office presented a paper on 'Prescribing Under the Pharmaceutical Benefits Scheme' at the Congress of the Australian and New Zealand Association for the Advancement of Science, held in Perth in August 1973. The paper was subsequently published in the Australian Journal of Pharmacy and widely circulated.

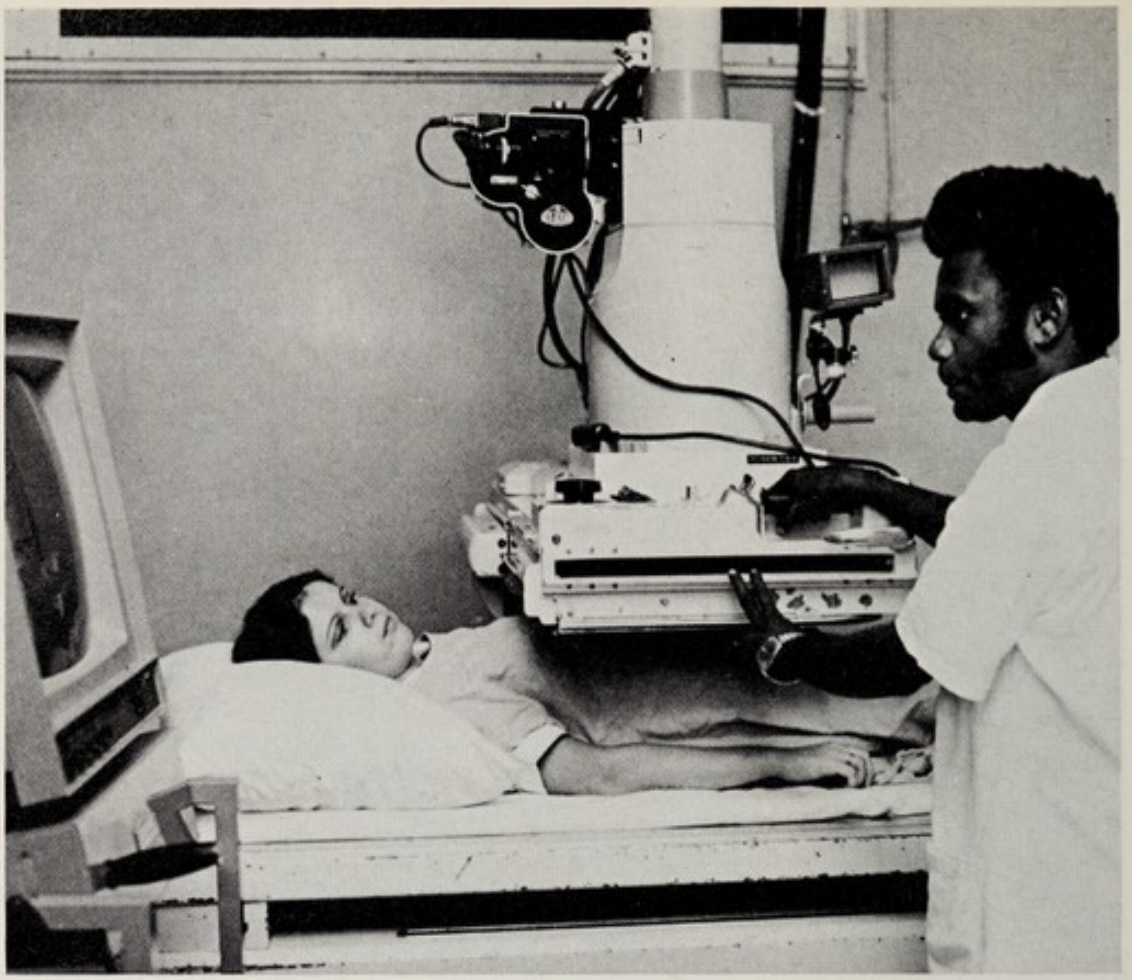
Automatic Data Processing

Mini-computers were installed in all Divisional Offices as a further step towards streamlining the A.D.P. processing of claims by chemists under the Pharmaceutical Benefits Scheme. Preparations also continued to extend the on-line system of operation to all offices. Staff in all States attended training sessions on the new equipment.

Medical activities

A further increase was recorded in the number of vaccinations and innoculations given to the general public. The steady growth in this work appears to be attributable to an increase in the number of people travelling overseas, rather than to any growth in public awareness of the dangers of infectious disease.

Automatic Data Processing operators at work in the New South Wales Divisional Office, processing claims made by chemists under the Pharmaceutical Benefits Scheme.



A radiographer from Papua New Guinea, Mr John Rimi, undergoing training at Royal Brisbane Hospital. The Department's Divisional Offices help arrange training programs for medical and paramedical trainees from overseas countries.

In Queensland, the Department's medical officers are co-operating with the State Health Department in a survey to determine the number of people entering the Gulf of Carpentaria port of Weipa from malarious areas. Should the results show a possible danger of the introduction of malaria, an active surveillance program will be instituted.

South Australian medical officers have regularly visited the casualty station at the Weapons Research Establishment in Salisbury, and greater use is being made of their services in occupational health matters. The Director of the South Australian Division was appointed chairman of an *ad hoc* committee on venereal diseases, established by the National Health and Medical Research Council.

National Acoustic Laboratories

All Divisional Offices recorded an increased demand for acoustic services in the latter part of the year, particularly from pensioners. This was due to a combination of factors including the removal of the hiring fee for hearing aids, the provision of free batteries, and increased publicity given to the Pensioner Hearing Aid Scheme. Resources were stretched to cope with the unprecedented demand. Batteries are now available at most Departmental establishments, including pathology laboratories.

Pathology Laboratories

The Department's Pathology Laboratories in Queensland played a major role in the detection of diphtheria when the disease was reported in several areas of the State during the year. All four laboratories—at Cairns, Townsville, Rockhampton and Toowoomba—participated in local testing programs, taking throat swabs from school children and detecting further cases of the disease. The Cairns Laboratory, for instance, took and cultured 3,100 swabs which produced 120 carriers, while the Rockhampton Laboratory took 1,400 swabs and detected eight confirmed cases and eleven carriers.

The Cairns Laboratory also helped the Queensland Institute of Medical Research in its investigation of a small outbreak of acute glomerulonephritis at an Aboriginal settlement.

Laboratories in all States recorded a further increase in workload, and extensions are under way or being planned for several laboratories, to provide necessary extra accommodation. The Hobart Laboratory noted a particular increase in demand for services in the biochemistry field, apparently caused by the current interest in heart disease and the resultant request for serum lipid analyses. The Lismore Laboratory faced a difficult time during record-breaking floods in the area, but was able to maintain continuous services.

Training of overseas students

The Divisional Offices continued to play an active part in the training of overseas students, who come to Australia under the Australian Government Practical Training Scheme, the Colombo Plan, and the World Health Organisation Fellowship Scheme. A wide range of medical and para-medical courses was again arranged.

Policy Secretariat and Legislation

The workload of the Policy Secretariat and Legislation Branch continued to increase during the year, reflecting the growing Parliamentary, professional and public interest in health matters.

Policy Secretariat

More written representations were addressed to the Minister for Health in 1973-74 than in any previous year. The Policy Secretariat assisted with the preparation of replies to these representations and to approximately 150 questions on notice or without notice, addressed to the Minister in the Parliament.

In addition, it undertook a variety of policy investigations, prepared briefs for the Prime Minister and other Ministers, and serviced a number of top-level conferences.

The Secretariat also made detailed arrangements for the Australian Health Ministers' Conference which was to have been held in Canberra on 22-24 April 1974, but which was deferred following the dissolution of Parliament.

National legislation

Two new Acts became effective during the year. The *Mental Health and Related Services Assistance Act* 1973, assented to on 27 November 1973, has a wider scope than the *States Grants (Mental Health Institutions) Act* which expired in June 1973. The new Act provides for grants for capital costs of approved community facilities for alcohol and drug dependent persons and the mentally disturbed or disabled. Grants may also be made to meet maintenance costs of approved non-residential services and for research, teaching and the evaluation of treatment programs.

The *Hospitals and Health Services Commission Act* 1973, assented to on 19 December 1973, established the Hospitals and Health Services Commission to study Australian health care needs and make recommendations to the Government on the allocation of capital and operating funds for the development and maintenance of health care delivery systems.

Additionally, the *National Health Act* (No. 2) 1973, assented to on 18 December 1973, authorised the provision of free hearing aid batteries for pensioners and others entitled to free aids.

Seven sets of regulations were promulgated and fourteen proclamations and statutory instruments were made.

Territories legislation

Eight ordinances and regulations were made for the Australian Capital Territory and Northern Territory during the year. Included among these were A.C.T. ordinances relating to trading in human blood and to the sale of contraceptives. It is proposed that similar legislation will be introduced into the N.T. Legislative Council.

The Department is now responsible for the administration of legislation relating to health services on Norfolk Island. An overall review of that legislation is being undertaken to ensure that it reflects current needs.

A major task during the year was the development of an ordinance to establish the Capital Territory Health Commission. This is in the course of being drafted and it is expected that it will come into operation in the near future. Transfer of responsibility from the Department to the Commission will necessitate amendments of most of the A.C.T. legislation for which the Department is responsible. That work is well in hand.

Public Relations Section

The expanding need for public relations services became more apparent during the year with the continued growth and diversification of Departmental activities, and the Public Relations Section undertook a heavy workload of publishing, advertising, feature writing, press liaison and special project exercises.

The Section now provides specialist journalists in the animal quarantine, National Health and Medical Research Council, and social medicine areas. The employment for the first time of a journalist exclusively for National Health and Medical Research Council matters provided the opportunity to publicise Council activities far more widely than had been previously possible. At the Seventy-seventh and Seventy-eighth sessions of Council, held in Canberra and Perth respectively, news conferences were arranged and media representatives were given the opportunity to question Council members—a successful innovation which produced widespread publicity and led to a greater public understanding of the Council's role in public health and medical research matters. Attention was also given to the upgrading of Council publications, and new designs and formats are being introduced for the wide range of books and pamphlets produced.

In the quarantine field, the bi-monthly magazine *Animal Quarantine* continued to increase in popularity, and more than 2,300 copies of each issue are now distributed throughout the world. A major new initiative during the year was the publicising of Australia's precautions against the introduction of foot and mouth disease. Special pamphlets are being prepared for the public and primary producers, and the Section is liaising with Film Australia in the production of two films on the subject, one for specialist viewing and the other for the public.

Film-making is occupying an increasingly large place in the Section's activities, not only in a liaison role with Film Australia but also in script supervision and the publicising of the completed film. A preview screening was arranged in Sydney for media film critics and health educators of the two latest films completed for the drug education program. Work has begun on the production of two films relating to the Community Health and Mental Health Programs and on another concerning the training of dental therapists, while further film ideas are being discussed.

Nurses with similar qualities wanted for the Northern Territory.

You get more out of nursing in the Northern Territory because you have to put more into it: all of your head and all of your heart.

In return, we guarantee professional satisfaction, and numerous material benefits.

The challenge.

Much of the nursing in the Territory will be totally different from anything you'll have experienced elsewhere. It's a rare chance to get away from it all, and serve in one of the last frontier areas in Australia.

Much of your work will be unsupervised, so initiative and maturity are desirable qualities.

You could find yourself working in a very modern operating theatre, or running a clinic off the back of a 4-wheel drive vehicle.

You could find yourself working with an aboriginal medicine man (also employed by us). You may find him easier to work with than matron.

Total nursing.

The Territory offers many opportunities to branch into the community health field. You'll have the opportunity to practice the total health care of the family and the total nursing care of the individual.

Nurses who choose to stay in the Territory as permanent members of the service are encouraged to take post-graduate studies at our expense, and without bonding.

Qualified nurses, male and female, are required at the moment to work in hospitals, rural and district health, infant health and the schools medical service. From time to time there are vacancies in the aerial medical service. The main medical centres in the Territory are at Darwin, Alice Springs, Tennant Creek, Gove and Katherine. We do our very best to give you the job you want in the place you want.

The challenge is there. All that's missing is you.

Promotion.

Your chances of promotion are generally recognised as being greater in the Territory. And that means more money.

As well as your regular salary, you'll get taxation concessions of $540 (providing you live in the Territory for at least six months of the financial year), and an annual district allowance of between $270 and $700, depending on where you work.

Free flights.

We pay for you to fly from your place of appointment to your place of engagement.

We pay for a 1st class return air fare to Brisbane, Sydney, Melbourne, Adelaide or Perth after you've been with us 12 months (less a contribution of $15.00 from you).

Enquire now.

Overall, the Territory offers you more varied and interesting work, a great social life, good salaries, a good climate and, of course, a real challenge. Send off this coupon today. We'll tell you of the other advantages.

I am interested in nursing in the Northern Territory. Please tell me more.

NAME (MR/MRS/MISS)

ADDRESS

POSTCODE

I QUALIFIED IN (YEAR)

ADDITIONAL QUALIFICATIONS (IF ANY)

PRESENT POSITION

I WOULD PREFER TO WORK AS

Send the coupon or phone the AUSTRALIAN DEPARTMENT OF HEALTH at:

BRISBANE — Australian Government Offices, Anzac Square, Adelaide Street, 4000. **Doug Smith,** Telephone 25 3300.
SYDNEY — Australian Government Centre, Chifley Square, cnr. Phillip and Hunter Streets, 2000. **Ted Morton,** Telephone 259 3904. **CANBERRA** — Alexander Building, Phillip, 2606. **Russ McDonald,** Telephone 81 8526.
MELBOURNE — Australian Government Centre, cnr. Spring and Latrobe Streets, 3000. **Keith Neumann,** Telephone 669 2267. **HOBART** — Kirksway House, 6 Kirksway Place, 7000. **Byron Bailey,** Telephone 20 2323.
ADELAIDE — A.M.P. Building, 1 King William Street, 5000. **Errol Muller,** Telephone 50 3552.
PERTH — The Victoria Centre, 2-6 St. George's Terrace, 6000. **Jim Hawkins,** Telephone 230391.

Authorised by the Australian Department of Health.

HNT3.304.44

A new approach to staff advertising, arranged by the Department's Public Relations Section in conjunction with the Australian Government Advertising Service during the year. The campaign produced a substantial response from nurses seeking more information about careers in the Northern Territory.

Advertising is another function for which demands have grown in the past year. The Section worked closely with the Australian Government Advertising Service in preparing an unusual campaign to attract nurses to the Northern Territory. An officer of the Section undertook a comprehensive tour of the Territory to talk to nursing and medical staff and gather promotional ideas before the campaign was launched. Advertising advice and assistance was also provided for a number of other areas of the Department and for the Hospitals and Health Services Commission, while the Section supervised a new print media campaign for the National Warning Against Smoking.

Other activities in the anti-smoking sphere included preparation of a variety of resource materials including booklets, posters, T-shirt transfers, desk cards and other publicity aids which are to be widely distributed early in the new financial year. The Section also handled requests from thousands of correspondents—mainly schoolchildren seeking project material—for information on the hazards of smoking. Many more requests were received from the public for general information on the Department and its functions, and an explanatory paper was prepared which it is hoped to publish in booklet form in the coming year.

Publication work continued to be a major function and resources were stretched to keep abreast of increasing demands for production of books, booklets and pamphlets of every variety. Because of staffing difficulties and pressure of other essential work, production of the Departmental journal *Health* became irregular during the year, but the appointment of new staff shortly should remedy this.

The other major function of the Section, media relations, also continued at an active level, particularly in the preparation of news releases and the answering of questions on the Community Health and Mental Health Programs. It is expected that these programs will occupy an increasingly large percentage of the Section's time in the coming year, with major initiatives to publicise the importance of the programs to the community as a whole.

Other duties undertaken during the year included speech writing, the preparation of feature articles, the organisation of internal communications, the arrangement of specialised distribution of publications, and the provision of frequent assistance to the Hospitals and Health Services Commission with preparation of publications.

Planning and Research

The Planning and Research Branch worked under considerable pressure during the year to cope with essential commitments. Much of its workload resulted from an arrangement whereby the resources of the Branch, together with those of other areas of the Department, were made available to provide services for the Hospitals and Health Services Commission, both during its period of interim operation and more recently since its official establishment.

Steps were taken to meet the increased demand for health services research and planning facilities. The creation of a second Branch was approved, although it will be late in 1974 before both Branches are properly staffed.

The past twelve months were marked by a considerable change in emphasis concerning areas of national involvement in the provision of health services. Where previously the Government confined its activities largely to public health matters, grants in certain initial areas of activity and the provision of personal benefits, it is now taking a direct interest in the provision of personal care services. This has necessitated a considerable change in the skills required of the planning and research area and in the way it is organised.

For organisational purposes three distinct areas of activity are now recognised—community health, health personnel, and institutional and allied services.

Community health

The Branch undertakes program development and analyses of submissions to the Hospitals and Health Services Commission for assistance under the Community Health Program. Because of a sense of urgency associated with initial developments under the program, it was not possible to undertake more than a short examination of the majority of such submissions during 1973-74. With the benefit of experience gained during the year and the provision of additional resources, it should be possible in future to give detailed consideration to individual projects and to become involved in their development.

Among the many and varied areas of concern that fall within community health, particular attention was given to problems associated with the provision of health services to rural and remote communities, to the needs of ambulance and other health transport services, and to examining alternatives to existing systems for financing and delivering health services.

Health personnel

During the year, the Department moved from a situation of little involvement in health manpower planning to one where considerable attention is being focused on the availability and training of personnel who are, of course, just as important in the delivery of health care as are the physical facilities. Limited resources meant that it was possible to take only a few

tentative steps this year. However, a much broader initiative should emerge during the year ahead.

Planning is under way for an information system on health careers, and it is hoped to issue a series of descriptive profiles on various careers later in 1974. A start has been made towards estimating future demands for personnel in specific fields, and attention is being given to the range, nature and location of training. Of particular concern has been the need for continuing education in this age of rapid scientific advancement and change.

Institutional and allied services

One of the most significant roles for the Branch during the year was the research for, and preparation of, material for inclusion in the Hospitals and Health Services Commission's *Report on Hospitals in Australia*. This involved examination of such matters as facilities, services, personnel, equipment, management and financing.

Other health services receiving special consideration during the year were pathology, radiology and medical rehabilitation. Considerable resources were used to support extended Government initiatives in the provision of aids and appliances for the handicapped.

Increasing attention was paid to the concept of regionalisation, both in the organisation and delivery of health services and in the wider context of social planning. This led to a growing liaison with the Department of Urban and Regional Development, the Cities Commission and the Social Welfare Commission, as issues of common concern were recognised and developed.

Medical war planning

The Branch continued to service the various committees of the National Medical War Planning Committee. Part two of the Model Plan for emergency planning neared completion during the year, and surveys were carried out to determine the number, location and concentration of medical specialists throughout Australia.

Establishments and Finance

The extensive reorganisation and continued expansion of the Department and its responsibilities in 1973-74 increased the workload for the Establishments and Finance Branch, which provides a range of administrative services for the Department as a whole.

Organisation and classification

The establishment of the Department increased from 5,864 to 6,693 during the twelve month period ended 30 June 1974—an increase of 829 compared with 196 in the previous financial year.

A review of the top structure of the Department, which began last year, resulted in the abolition of two Divisions and the establishment of four new ones—Therapeutics, Public Health, Medical Services and Policy and Planning. Five new Branches were also established within the Divisions—Environmental Health, Tuberculosis and Health Standards, Medical Laboratories, International Health, and Pharmacy Earnings and Projects.

Overall reviews have since been conducted in all Divisions other than Quarantine and, as a result, the Planning and Research Branch was split into two Health Services Research and Planning Branches. A new Community Health Branch was also established within the Public Health Division. Two new positions of Director Level 1 were created in the National Biological Standards Laboratory.

Reviews have begun of the Divisional Office Medical, Executive Services and Pharmaceutical Branches, and of the National Acoustic Laboratories. A category review of the Medical Officer (Research and Teaching) structure at the School of Public Health and Tropical Medicine was finalised, and a new five-level Research Medical Officer structure introduced. A review of positions requiring nursing qualifications is currently being undertaken.

Bulk establishments

During the year a number of areas of the Department were examined with a view to participation in the bulk establishments control system being sponsored by the Public Service Board. As a result, approximately one-third of the Department is being covered by the system from 1 July 1974, and the Board has approved the creation of an initial 'reserve pool' of ninety-eight positions for these areas.

During the next year, work will be continuing to extend the coverage of the system to other areas with the intention of embracing the whole Department by 1 July 1975.

Methods

Methods officers undertook development of management control systems within the Department based on work measurement, work programming and scheduling techniques. Work measurement in the Pathology Laboratories led to the introduction of a reporting system which, in addition to showing the number of tests performed, indicates the productivity for each discipline in the laboratories. The system enables comparisons in performance to be made between disciplines and laboratories.

Work programming and scheduling was introduced to the National Health and Medical Research Council Division to effectively program and control the many committee meetings convened and serviced by the Division. A feasibility study on the application of closed circuit television was undertaken, and audio-visual equipment was purchased for use within the Department under the control of the Central Office Training Section.

A major review of the Therapeutic Goods Branch was carried out during the year. Changes in procedures and systems have facilitated the processing of applications and the issuing of permits to import therapeutic goods. Documentation of procedures and the preparation of procedure manuals is currently being carried out in the Branch.

A review of the Automatic Data Processing and Pharmaceutical Services areas in all Divisional offices was jointly carried out with officers from the Organisation and Classification Sub-section. A change in procedures for the processing of chemists' claims from punched tape to an 'on-line' or 'direct drive' system between each office and the central computer necessitated the review.

A record number of office machines and equipment proposals were investigated during the year. Items purchased included background music and telephone answering services for Canberra's health centres, photocopiers and electronic calculators. Design work was carried out for a number of new forms and some existing forms were revised.

Training

The year saw the beginning of a new training concept in the Department. Apart from the design of new courses for Central Office, a management development program for both Divisional and Central Office staff with managerial responsibilities was introduced. The program includes a five-day management course, plus short senior management workshops.

Three workshops were conducted in Canberra on decision making, conference leading and career counselling. Of the forty-five officers who attended the courses, at least half came from the Department's Divisional Offices.

New courses developed for Central Office staff were a correspondence workshop, a visual presentation workshop and a supervision conference for third and fourth division officers. A quarantine training program for all States was also started. The induction program was increased to cover all third and fourth division new entrants, with fortnightly orientation courses supported by monthly induction modules.

The acquisition of portable closed-circuit television equipment and audio-visual systems has enlarged the activities of the training group. A pilot TV production concerning the Department and its functions was made at the Canberra College of Advanced Education's television studio, and a slide tape series for induction courses was started. These productions will be available for distribution to all Divisional Offices.

Finance

The Finance Section was closely involved in the setting up of financial arrangements associated with new initiatives taken by the Government in the fields of Community Health, Community Mental Health, Alcoholism and Drug Dependence, the Australian School Dental Services Scheme, etc. The Section also acted in an advisory capacity concerning the financial implications and procedures arising from the establishment of the A.C.T. Health Services Commission and the Hospitals and Health Services Commission.

Reviews were carried out of animal and plant quarantine fees with a view to recovering a greater proportion of the costs involved in quarantine activities.

The Section continued to provide analytical accounting services in various fields. These included the provision of comments on the financial aspects of the 1975 WHO program, for inclusion in Australia's brief for the twenty-seventh World Health Assembly, and of analytical returns for hospitals and allied services in the A.C.T. and Northern Territory for the Uniform Costing Committee of H.A.S.A.C.—the Hospitals and Allied Services Advisory Council.

The Section represented the Department at the Inter-Departmental Committee on Fees and Allowances, the Inter-Departmental Working Party on Aids and Appliances, the Senate Estimates Committees, the Joint Parliamentary Committee on the A.C.T., and the Uniform Costing Committee of H.A.S.A.C.

During the year, Public Service Board approval was given to a re-organisation of the Finance Section and staffing was increased. A Costing Sub-section, which will assess the cost to the Department of the various services provided by the Department and its laboratories, was established and a new position of Assistant Director was created.

Administrative services

The Administrative Services Section continued its role of co-ordinating Departmental activities concerning works and accommodation, and the administration of financial aspects of grants to the States and certain non-profit organisations. Departmental liaison with the Commonwealth Serum Laboratories Commission was transferred to the newly-created Pharmacy Earnings and Project Branch late in the year. The Section assumed responsibility for a Territories Secretariat in Central Office to provide a point of contact for the health administrations in the Territories, and to maintain an information centre on Territory activities.

The value of the Department's civil works program for the year amounted to $59,262,918. This included $51,372,918 for works carried forward from the previous year.

Acceptance of full responsibility by the Department for health services at Aboriginal communities in the Northern Territory has involved additional capital works commitments and the planning of further improvements for the immediate years ahead. The construction of rural health centres and/or accommodation for medical staff was begun at Papunya, Yeundumu, Warrabri and Wave Hill. Contracts were let for new facilities at Mataranka, Daly River and Elliott, and for additional bed capacity and enlarged operating theatre facilities at Darwin hospital. Construction began of a community health centre at Dripstone in Darwin and a psychiatric day centre at Alice Springs. Further improvements were started at the Katherine hospital with the construction of a new laundry and boiler house.

Other work continued on major new hospitals at Casuarina in Darwin, and at Alice Springs. A proposal for a new hospital at Tennant Creek was heard by the Parliamentary Standing Committee on Public Works.

Significant new works committed during the year in the States and the A.C.T. included a new health laboratory at Townsville, and four hostels in Canberra for intellectually handicapped people and chronic and rehabilitation psychiatric patients. Some additional office accommodation was made available during the year to cope with additional or expanded Central Office functions. However, requirements for further areas of space continue and are as yet unsatisfied.

The Grants Sub-section was expanded during the year to cope with grants under the Community Health and Community Mental Health, Alcoholism and Drug Dependency Programs. It was also concerned with the administrative procedures involved in winding up the Milk for School Children Scheme. Consideration was given to proposals concerning the Blood Transfusion Service and the Royal Flying Doctor Service.

The Territories Secretariat was actively involved in proposals for the replacement of aircraft for the Northern Territory Aerial Medical Service, which culminated in the decision by the Government to purchase six Nomad aircraft. The Secretariat's liaison role with the Territories administrations assumed increasing importance as the year progressed.

Automatic Data Processing

The year was one of considerable development in automatic data processing activities in the Department. The central computing facilities in Canberra were upgraded substantially to cater for increasing workloads and a range of emerging requirements. Mini-computers were installed in Central Office and in each of the Department's Divisional Offices to provide enhanced data acquisition and handling capabilities.

The increasing volume of pharmaceutical benefits prescriptions continued to exert pressure on the A.D.P. Branch's equipment and personnel. To cope with the increase more efficiently, the use of on-line processing techniques in the New South Wales and Victorian Divisional Offices was extended, plans for a general upgrading in the on-line capabilities of each of these offices were implemented, and a start was made to the testing of on-line systems for the Department's offices in Perth, Adelaide and Hobart.

Development work in the medical benefits field was completed successfully during the year, and the new system of adverse drug reaction reporting was placed on a firm operational footing. Arrangements were begun for a substantial upgrading in the MEDLARS (Medical Literature Information Retrieval Services) provided by the Department. This new scheme is scheduled for introduction during 1974-75.

The Branch also undertook a review of the computing requirements of health care and administration in the Northern Territory, and participated in a major study of the computing needs and resource requirements of the proposed Capital Territory Health Commission.

Applications Section

The Applications Section continued to meet the developing and emerging needs of a number of Branches. Major computing systems in operation for the Pharmaceutical Benefits and Therapeutic Goods Branches were progressively updated to meet changing requirements.

Developmental work on an improved system to meet more comprehensive needs in the medical benefit field was completed during the year, and the new system was successfully brought into production. It replaced an earlier scheme developed in 1971 as an interim measure, following amendments to the *National Health Act* that year. Joint arrangements were begun to transfer the system to the computing facilities recently installed by the Department of Social Security in Canberra.

The computer-based MEDLARS system was improved and extended. There was considerable growth in the use of the system by researchers and workers in the biomedical field, and over 950 'current awareness' searches and 250 retrospective searches are now undertaken each month on behalf of the National Library of Australia, with the numbers continuing to rise progressively.

Mini-computers have now been installed in all Divisional Offices. They will play an important role in the Department's expanding communication network.

The Service will be enhanced substantially during 1974-75 with the introduction of MEDLARS II, a more comprehensive system developed over a long period by the National Library of Medicine, U.S.A. The U.S. Library was planning to make the new system available for use by Australia and other countries in July-August 1974, with a planned change from MEDLARS I to MEDLARS II systems in September 1974. An officer of the Applications Section undertook a six-week study of the new system at the National Library of Medicine to provide an appropriate basis for its operation in Australia, to facilitate the transfer from MEDLARS I without disruption to users, and to enable changes considered appropriate for Australia to be made promptly and efficiently.

An important facility of MEDLARS II is the capacity for on-line interrogation and searching, which will be introduced progressively after the more conventional features of the new service have been established on a sound basis.

A review of computing requirements appropriate for departmental administration and health care delivery in the Northern Territory was undertaken during the year, and a number of areas in which computing techniques could be used with advantage were identified. Attention is now being given to the recommendations made. Two senior officers of the Section are to be temporarily outposted to the Northern Territory Divisional Office, to develop and implement systems for operation on computing facilities being installed in Darwin by the Department of the Northern Territory. Other plans are being made to enable the Darwin office to ultimately provide first line systems development and support across a number of areas.

The Section participated in a major study on the computing needs of the proposed Capital Territory Health Commission in the areas of co-ordinated health care and administration. The study was commissioned by the Minister for Health and undertaken by the Computer Services Planning Committee under the chairmanship of the Assistant Director-General of the Branch. The Committee comprised a representative from each of the welfare group of departments, the Public Service Board, and both major A.C.T. hospitals. The Medical Advisory Committee was also represented. The Committee's report was forwarded to the Minister in April 1974.

The Section also completed work on a system designed to provide a basis for research into the use of follicle stimulating hormones. The Pituitary Hormone Sub-committee now receives reports which include details of patient treatments and courses, overstimulation occurrence in patients, pregnancies, deaths, abortions (including miscarriages) and certain pregnancy complications. Additional developmental work has been requested by the Sub-committee.

Forward Planning, Strategic Design and Services Section

An extensive study was carried out by the Forward Planning, Strategic Design and Services Section on the implications of the introduction of data base management techniques into areas of departmental computer processing. In particular, an exhaustive evaluation was begun on the applicability and performance of the IBM Information Management System, IMS/360. This study is nearing completion.

A detailed study has also been made of A.D.P. project control and resource utilisation. Features of the computer-based system which it is proposed to introduce include precise standards for project development, proving and implementation, work measurement, systematic monitoring of work schedules, and provision of data crucial to effective decision-making in the resource management field. Planning has begun for the introduction of time-sharing facilities for a range of users throughout the Department.

During the year a number of generalised programming and software facilities, designed to increase programmer and installation efficiency, were evaluated by the Section. Standards and procedures were developed for the optimum use of products subsequently acquired by the Branch. The Section introduced the facilities and undertook training of A.D.P. Branch and non-programming staff in their use. Assistance was given to the Central Statistical Unit in extending the advantages of some of the products to a range of functional areas in the Department.

The A.D.P. training group conducted courses for fifty programmers-in-training and programming assistants from the Department of Health and nine other Departments.

Systems Operations Section

The major effort of the Systems Operations Section was directed to the preparation for, and installation of, enhancements to both the large-scale computers in the Department's Central Office. This resulted in a three-fold increase in the processor storage of each system and a four-fold increase in direct access disk capacity.

The two main computers were also linked via a high-speed data channel to enable introduction of software which will allow their scheduling and use

to be co-ordinated automatically. The increased capacity and diversity of equipment now available has required a substantial reappraisal of operating and software procedures and techniques in order to make the best use of the enhanced system. While this work is continuing, considerable improvements in the productivity and throughput of the installation have already been achieved.

Support was provided for the planning and installation of the mini-computers which are now in all Divisional Offices.

The Section is developing a mini-computer-based system for data acquisition and computer-to-computer communication. The system will link the computers in each Divisional Office to the central computers in Canberra via Post Office communications facilities, and will enhance on-line facilities now in operation for the Pharmaceutical Benefits Scheme. The initial version of the system will shortly be introduced for trials in the Queensland Divisional Office. The mini-computers have been used for training staff in three Divisional Offices in the on-line data entry operations of the Pharmaceutical Benefits Scheme.

The Section continued to provide development and support for the Department's operative on-line systems. Preparations are well in hand for major extensions of these systems to all States, and tests of new communications links and associated equipment have been undertaken.

Preliminary trials on the use of terminals for programming development and general housekeeping duties have been successfully completed. A major relocation of units to make more efficient use of the Central Office computer area will shortly be undertaken. The relocation will allow a single central control area for the whole installation to be established.

Central Statistical Unit

The Central Statistical Unit continued to provide advice on the application of statistical techniques to the collection, analysis and presentation of data.

The compilation of the statistical appendix to this report is the only regular publication for which the Unit is now responsible. Limitation of resources and changes in departmental functions led to the decision to cease publication of the *Quarterly Review of Health Statistics* until a more appropriate publication can be developed and instituted.

The Unit continued, however, to respond to requests for statistical information from within the Department and often from outside organisations and individuals. A number of information notes were prepared for dissemination within the Department on the result of enquiries into particular problems or on the use of statistical techniques. Two papers related to the use of sequential analysis and of life table analysis.

The Unit provided technical assistance in the conduct of a number of surveys including those of insecticide residues in foodstuffs, the microbiological status of foodstuffs, the smoking habits of schoolchildren, patients of home nursing organisations, hospital facilities and services (1972-73) and the enquiry into pharmacy earnings, costs and profits. The hospital facilities survey was undertaken for the Hospitals and Health Services Commission, and involved the Unit in all aspects including development, pilot testing, conduct, processing and evaluation.

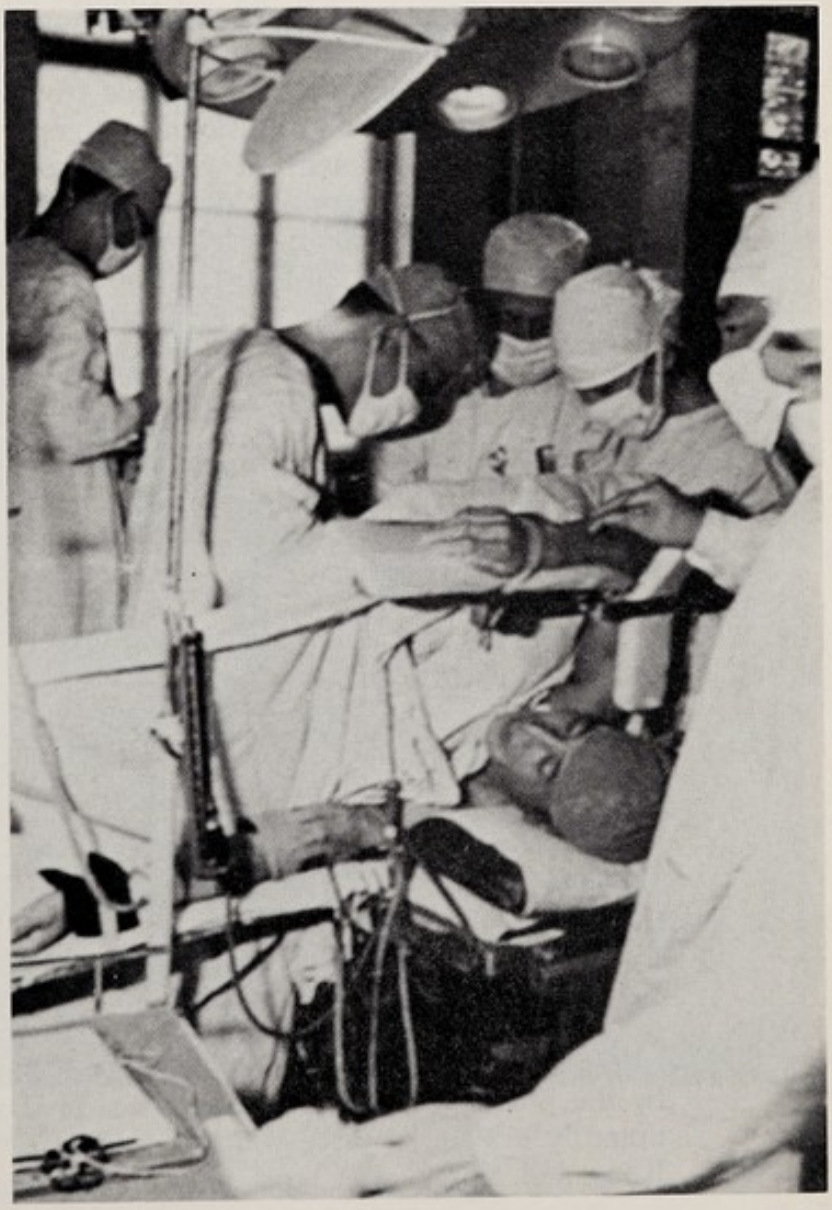
Advice was provided on the use of mathematical statistical techniques in the testing of drugs. Of note was the development of a draft *Guidelines in Evaluating Clinical Trials*, introduced on a trial basis to help maintain standard assessments of the efficacy of trials of drugs.

The Unit continued to provide secretarial support to the Medical Statistics Committee of the National Health and Medical Research Council, and to provide statistical advice to many of its committees. By far the greatest work in this area was the assistance given to the N.H. & M.R.C. Standing Committee on the Health Problems of Alcohol. The Unit is continuing to help with the design of enquiries to assess the effects of alcoholism in industry and on the use of institutional facilities.

Work has begun on examining a number of aspects of existing statistical systems relating to health care, and on formulating recommendations to improve the flow of statistical data to meet the growing demands for information in national planning of health care.

National Health and Medical Research Council

The Department's National Health and Medical Research Council Division was increasingly active throughout the year in all phases of its work, and particularly in matters relating to public health. Council continued to advise the Australian and State Governments on a variety of public health matters and on medical and dental care. It also advised the Australian Minister for Health on the allocation of funds made available by the Government for medical research.



A major chest operation under way in a Chinese hospital, with a traditional doctor manipulating an acupuncture needle in the patient's right forearm. The photograph was taken by a member of the team which investigated acupuncture in China, Hong Kong, Korea, and the United States on behalf of the National Health and Medical Research Council. The patient was fully conscious throughout the operation.

Council's three major committees—the Public Health Advisory Committee, the Medicine Advisory Committee and the Medical Research Advisory Committee—held regular meetings, while Council itself met at the Seventy-seventh Session in Canberra in November 1973, and the Seventy-eighth Session in Perth in May 1974.

Public Health Advisory Committee

Among major recommendations of Council stemming from the Public Health Advisory Committee was one suggesting that a standard dosage warning be printed on packs of analgesics, covering all preparations containing acetylsalicylic acid or its salts. Another recommendation related to the need for a uniform list of exclusion periods from school for children suffering from or in contact with infectious diseases. Council considered an earlier recommendation it had made on the matter, and updated it for publication and distribution.

A number of environmental health matters were considered during the year. A maximum lead content of one per cent was recommended for pencils, toys and similar materials, while limits for zinc and cadmium in seafoods were also suggested. Council supported research into the effects on human health of heavy metal contamination of oysters.

Council recommended that a maximum lead concentration in petrol be enforced and recognised the need to further reduce lead concentrations in the future. Warnings on lead hazards from pottery glazes were widely disseminated among non-professional potters.

To facilitate the uniform collection of data on maternal mortality, a standard form for recording details of maternal deaths was endorsed.

In the field of traffic injury, Council made several important recommendations. A new Australian standard motor cycle helmet was recommended to the various State and Territory authorities for introduction throughout Australia. In addition, Council recommended that it be made an offence in the States and Territories to sell a vehicle child-restraint device that does not comply with the relevant Australian standard.

A significant change was made in the range of health professionals eligible for Public Health Travelling Fellowships. Qualified paramedical and nursing personnel can now apply for the Fellowships, provided they have appropriate post-basic qualifications and are employed in public health.

Medicine Advisory Committee

The various committees set up in 1972-73 were active throughout the year in a number of health areas including gerontology, accidents, disabilities, the medical problems of alcoholism, maltreatment of children and multiphasic screening. The multiphasic screening investigation mentioned in last year's Report is expected to be completed during the first half of 1975 and a report to Council is expected later in that year.

Two important reports were received from investigating teams during the year, one on acupuncture and the other on boxing. Both reports have been printed and are available to interested parties.

The investigation into acupuncture was the first of its kind commissioned by the Medicine Advisory Committee. It was compiled following investigations by a team of three which visited centres in the U.S.A., China, Hong Kong and Korea. The most important recommendation made by the team

was that controlled clinical trials should be carried out in Australia to assess the effectiveness of acupuncture in certain situations as a guide to its place, if any, in Australian medical treatment. A committee has been established to make recommendations about the design of the clinical trials and their implementation.

The report on boxing encompassed medical aspects of the sport with regard to both amateur and professional boxing. Head injuries were of great concern to the Committee because they are responsible not only for most of the deaths in boxing but also for widespread brain damage. The report points out that eighty-eight boxing deaths are known to have occurred in Australia since 1893. Sixty-one of these were recorded in the period 1910-1939 compared with twenty-four since then, with only two deaths reported between 1970 and 1972.

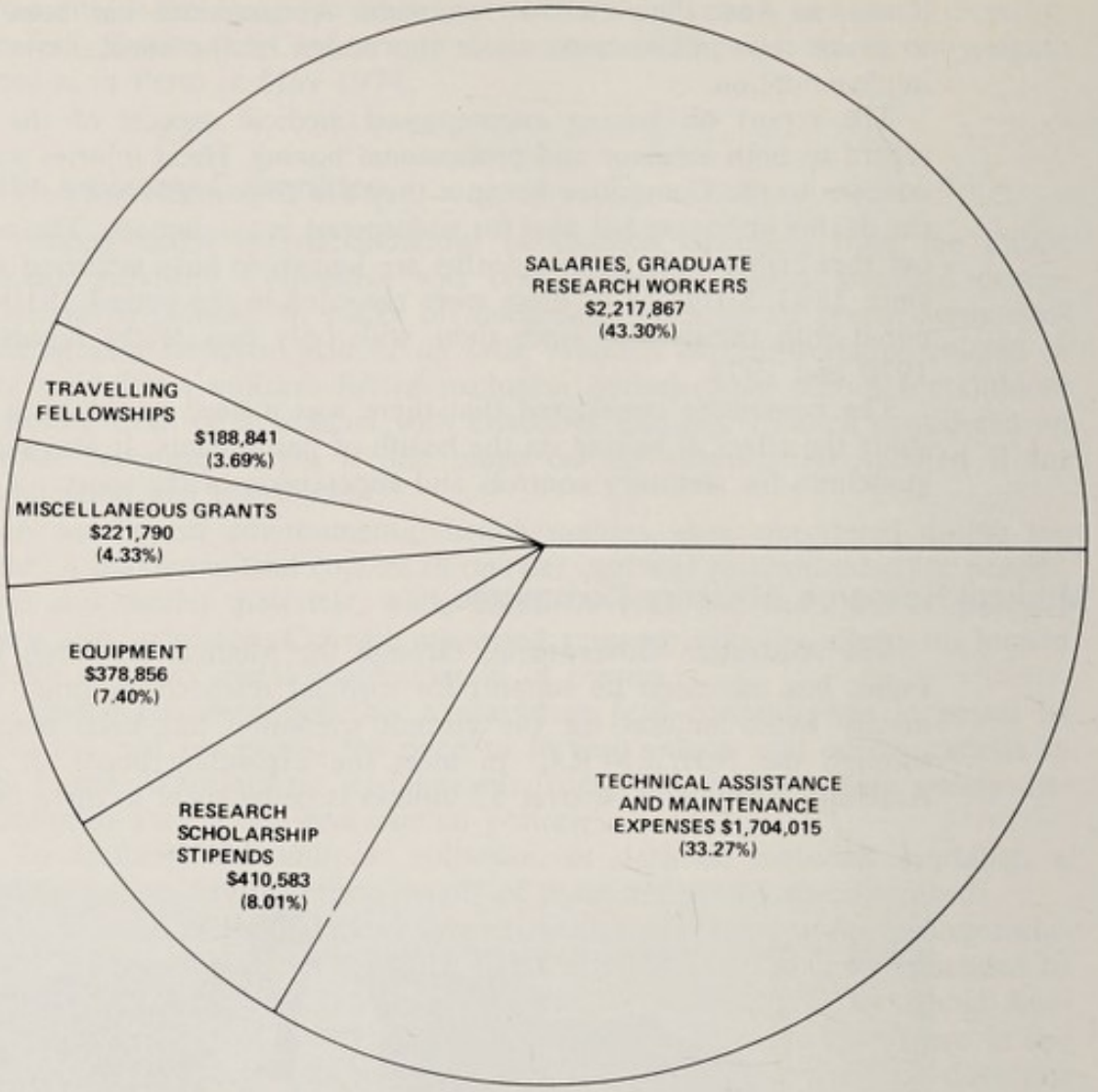
The committee considered that there was a need to establish a clinic to study the effect of boxing on the health of participants. It also recommended guidelines for statutory controls and supervision of the sport.

Medical Research Advisory Committee

The Australian Government, through the Medical Research Endowment Fund, has increased its support for medical research. A grant of approximately $15.5 million for the current triennium has been made available through the N.H. & M.R.C. to meet the expanding needs of research in Australia. During 1974, over $5 million is being spent in three main areas:

Researchers collecting oysters from the Derwent Estuary in Tasmania—the first step in a research project on pollution of Tasmanian seafoods, sponsored by the National Health and Medical Research Council.

COMPOSITION OF GRANTS MADE FROM THE MEDICAL RESEARCH ENDOWMENT FUND—1973–74



Approximately $15.5 million has been made available from the Medical Research Endowment Fund in the triennium 1973-75. The graph shows how the funds were allocated by the National Health and Medical Research Council during 1973-74.

(a) research in certain health areas held to be in special need;
(b) additional support for special research institutes; and
(c) expansion of current project and research training activity.

The first area covers diseases and conditions which may cause prolonged disability or premature death, such as mental illness, renal and cardiac disease, respiratory disorders, injuries, addiction, arthritis and asthma.

The second area concerns certain Australian research institutes which have developed specialised in-depth research programs with notable results. Two such institutes—the Walter and Eliza Hall Institute of Medical Research and the Howard Florey Institute of Experimental Physiology and Medicine—have established outstanding world-wide reputations and contributed significantly to the advancement of knowledge in their respective fields. Council is anxious that these institutions should be adequately supported.

Finally, Council will ensure that the traditional areas of medical research receive increased support. It will stimulate expansion in research activity being carried out in universities, hospitals, research institutes, and by individual medical and dental practitioners.

Overseas Travelling Fellowships

Twelve overseas research fellowships were awarded in the past twelve months, bringing the number of people currently studying on N.H. & M.R.C. travelling fellowships to twenty-four. The Council awards three categories of overseas fellowships—the C. J. Martin Travelling Fellowships, the Public Health Travelling Fellowships, and the Fellowships in Clinical Sciences.

The C. J. Martin awards are open to all candidates who have been engaged in medical, dental or related fields of research in Australia for a period of from two to seven years. The tenure of the Fellowships is normally two years overseas and one year in Australia, and the awards are made to workers intending to follow a research career in Australia. At its Seventy-eighth Session, Council awarded three C. J. Martin Fellowships.

The Public Health Travelling Fellowships enable graduates working in the field of public health to study overseas for a period not exceeding twelve months. At the Seventy-seventh Session of Council, three Fellowships were awarded for study of dental health care systems, trends in epidemiology, and methods of evaluating and presenting public health and preventive medicine programs.

Six people were awarded Fellowships in clinical sciences—four in epidemiology and one each in psychiatry and clinical pharmacology. These Fellowships cover a three-year period.

Grants

Grants totalling $37 million were paid through the Grants Sub-section to State and local governments and non-profit organisations during 1973-74 to promote and assist in the provision of a variety of health services. These grants included assistance for programs of community health and mental health which were initiated during the year.

Community health program

Grants for the provision of co-ordinated community-based health services were introduced on the recommendation of the Hospitals and Health Services Commission.

Full capital and operating costs were paid for approved projects implemented by State and local governments, charitable organisations and other non-profit organisations, amounting to $9,876,817.

Community mental health program

Under the *Mental Health and Related Services Assistance Act* 1973, unmatched grants totalling $6,724,933 were paid to the States and to non-profit organisations for the capital and operating costs of community mental health centres or other approved activities.

Final payments for State expenditure incurred up to 30 June 1973 under the superseded States Grants (Mental Health Institutions) Act were also made. These payments, equal to one-third of State expenditure, amounted to $2,249,438 during 1973-74, making a grand total of $57.9 million since capital assistance was introduced in 1955.

Public nursing homes

The five-year period, during which State expenditure on the erection of public nursing homes was eligible under the *States Grants (Nursing Homes) Act* 1969, for matching assistance, terminated on 30 June 1974.

Payments during the year amounted to $657,769, bringing total payments under the Act to $2,473,819. A carryover of expenditure will be claimed next year but total expenditure is expected to fall short of the $5 million available.

Paramedical services

Expenditure by the States on approved schemes for the provision of paramedical services to aged persons in their homes is subsidised under the *States Grants (Paramedical Services) Act* 1969. The Federal offer is for

matching assistance totalling $250,000 a year towards expenditure on physiotherapy, occupational therapy, speech therapy and similar services.

Payments to Victoria, South Australia and Tasmania totalled $163,931 for the year.

Milk for school children

The Australian Government discontinued financial assistance for the free milk for school children scheme from the start of the 1974 school year. Payments totalling $7,879,241 were made to the States for milk supplied up to the termination of the scheme, and $39,214 for other expenditure. In addition, $200,041 was spent on the supply of school milk in the A.C.T. and the Northern Territory.

Home nursing subsidy scheme

Under the *Home Nursing Subsidy Act* 1956, non-profit organisations which operate home nursing services employing registered nurses and which receive State or local government assistance are eligible for subsidies according to the number of nurses employed.

The number of organisations receiving subsidy under the Act increased by thirteen during the year to a total of 146, while subsidy payments increased by $888,029 to $3,390,146. These services, which enable people who might otherwise need institutional care to remain in their own homes, are provided by organisations such as public hospitals, municipal bodies, and religious, charitable and voluntary community groups.

Blood transfusion services

Australian Government assistance towards the blood transfusion services operated by the Australian Red Cross Society was increased from 30 to 35 per cent of operating costs in the States and from 90 to 95 per cent in the Territories as from 1 July 1973. The additional assistance was made available provided each State government continued to contribute 60 per cent of the costs in their State.

Grants for Blood Transfusion Services in the States amounted to $1,869,956, in the A.C.T. $41,100, and in the Northern Territory $65,000 during the year.

Royal Flying Doctor Service

The emergency aerial medical service operated by the Royal Flying Doctor Service has been subsidised by the Federal Government since 1936. For the triennium ended 30 June 1974, the level of assistance was $315,000 a year for operational purposes and $170,000 a year towards an approved capital expenditure program. In addition a grant of $154,310 for the changeover of twelve base radio stations to single sideband operation was paid during the year. Payments for this project now amount to $484,839 towards the final estimated cost of $547,727.

Family planning

Federal financial support to family planning services was continued during the year in the form of grants to approved organisations. The Family

Planning Association of Australia is being assisted at the rate of $200,000 a year and the National Catholic Welfare Committee at $100,000 a year. In addition a grant of $20,000 was paid to the Family Life Movement of Australia for the production of audio-visual aids.

Hospital development program

On the recommendation of the Hospitals and Health Services Commission, capital grants have been made for urgent hospital projects under the Capital Cities Hospital Development Program. Payments to the States for approved grants totalled $2,365,423 for 1973-74.

Planning and research

The Hospitals and Health Services Commission, under a three-year program for Health Services Planning and Research, is making grants to the States on a $2 for $1 basis; to universities on a dollar for dollar basis; and on an unmatched basis for specially-commissioned studies by universities and other organisations. Payments in 1973-74 amount to $546,727.

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NOTES ON STATISTICS

Any discrepancies between totals and sums of components in tables are due to rounding.

Yearly periods shown as, e.g., 1972, refer to the year ended 31 December 1972; those shown as, e.g., 1971-72, refer to the year ended 30 June 1972.

Values are shown in Australian dollars ($).

p Preliminary—figure or series subject to revision.

r Figure or series revised since previous report. Derived statistics based on population estimates have been re-calculated to conform with revised population estimates.

n.a. Not applicable.

— Nil.

—— Break in continuity of series (where drawn across a column or between columns to separate two consecutive figures).

A.B.S. Australian Bureau of Statistics (prior to 1 January 1974 known as Commonwealth Bureau of Census and Statistics).

W.H.O. World Health Organisation.

HEALTH INDICATORS

Life expectancy

TABLE 1 COMPARATIVE EXPECTATION OF LIFE—1881-1890 TO 1972

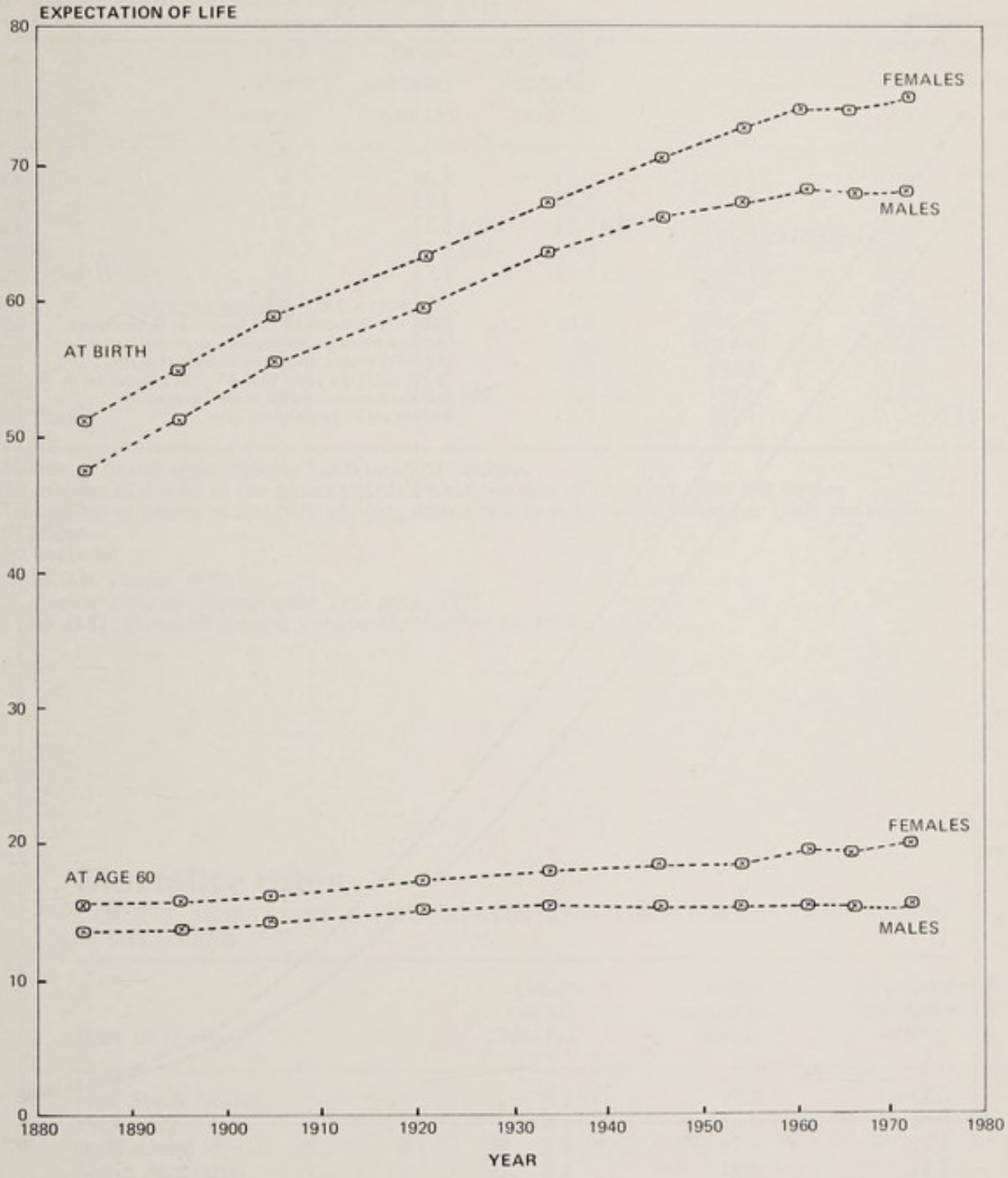
	Expectation of life			
	Males		*Females*	
Year	*At birth*	*At 60 years*	*At birth*	*At 60 years*
1881-1890 . . .	47.20	13.77	50.84	15.39
1891-1900 . . .	51.08	13.99	54.76	15.86
1901-1910 . . .	55.20	14.35	58.84	16.20
1920-1922 . . .	59.15	15.08	63.31	17.17
1932-1934 . . .	63.48	15.57	67.14	17.74
1946-1948 . . .	66.07	15.36	70.63	18.11
1953-1955 . . .	67.14	15.47	72.75	18.78
1960-1962 . . .	67.92	15.60	74.18	19.51
1965-1967 (a) . . .	67.63	15.27	74.16	19.52
1971	67.95	15.42	74.51	19.73
1972	68.19	15.45	74.99	19.97
Increase in life expectancy since 1881-1890 . .	20.99	1.68	24.15	4.58

(a) Figures from 1965-67 onwards are based on population and death statistics including Aborigines.

Source: For periods up to 1965-67 *Australian Life Tables* prepared by the Australian Government Actuary. For 1971 and 1972, figures from *Life Tables* prepared by the Australian Bureau of Statistics based on population and mortality data for those years.

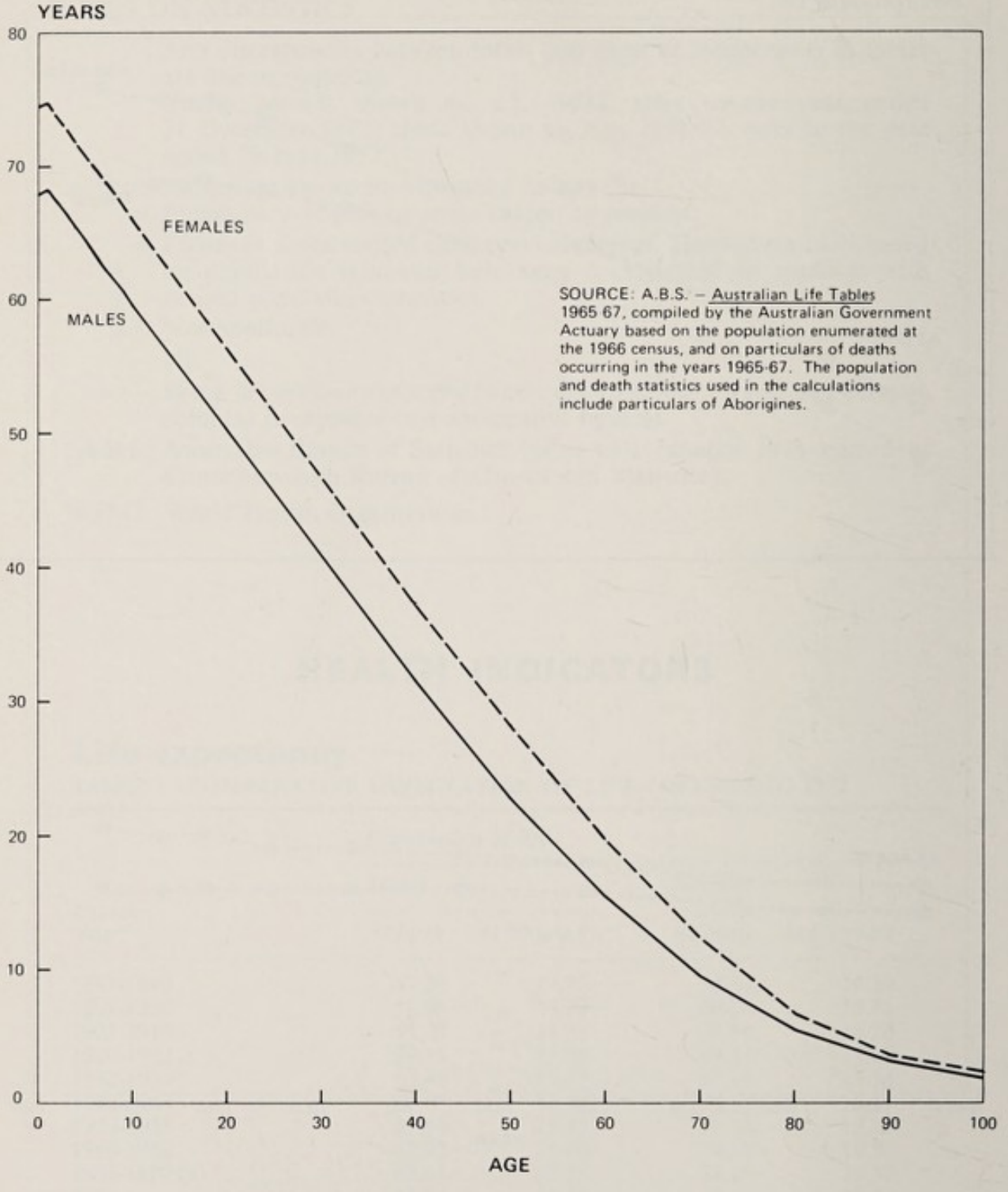
Life expectancy

GRAPH 1 COMPARATIVE EXPECTATION OF LIFE—1881-1890 TO 1972



Life expectancy

GRAPH 2 COMPARATIVE EXPECTATION OF LIFE—1965-67



Mortality rates

TABLE 2 MORTALITY RATES AND COMPARATIVE EXPECTATION OF LIFE AT BIRTH—SELECTED COUNTRIES—YEAR ENDED 31 DECEMBER 1972

Country	Crude death rate (a)	Infant mortality rate (b)	Neo-natal mortality rate (c)	Expectation of life at birth		
				Year	Male	Female
Australia	8.5	16.7	12.0	1965-67	67.63	74.15
Austria	12.7	25.1	18.6	1970	66.34	73.52
Canada	7.4	17.5 (d)	12.4 (d)	1965-67	68.75	75.18
Denmark	10.2	13.5 (d)	(e)	1968-69	70.7	75.6
England and Wales	12.1	17.3	11.6 (d)	1968-70	68.6	74.9
France	10.6	16.0	(e)	1969	67.6	75.3
Ireland	11.2	17.8	14.0	1960-62	68.13	71.86
Italy	9.6	27.0	(e)	1964-67	67.87	73.37
Japan	6.5	11.7	7.7	1968	69.05	74.30
Sweden	10.3	11.1 (d)	8.8 (d)	1967	71.85	76.54
United States	9.4	18.5	13.7	1970	70.8 p	

(a) Number of deaths registered per 1,000 mean population.
(b) The number of deaths of live born children within one year of birth per 1,000 live births.
(c) The number of deaths of live born children within twenty-eight days of birth per 1,000 live births.
(d) 1971 figures.
(e) Not available.

Source: A.B.S. *Deaths*, 1972.
United Nations *Demographic Year Book*, 1971.
W.H.O. *Statistical Report*, Volume 26, Number 12, 1973.

Mortality rates

TABLE 3 MORTALITY RATES—STATES AND TERRITORIES—YEAR ENDED 31 DECEMBER 1972

State or territory	Crude death rate (a)	Infant mortality rate (b)	Neo-natal mortality rate (c)
New South Wales	8.9	17.5	13.0
Victoria	8.4	14.6	10.9
Queensland	8.9	17.8	12.4
South Australia	8.2	16.8	11.8
Western Australia	7.0	15.7	10.4
Tasmania	8.2	16.2	9.2
Australian Capital Territory	4.3	16.5	13.5
Northern Territory	6.0	41.5	20.2
Australia	8.5	16.7	12.0

(a) Number of deaths registered per 1,000 mean population.
(b) The number of deaths of live born children within one year of birth per 1,000 live births.
(c) The number of deaths of live born children within twenty-eight days of birth per 1,000 live births.

Source: A.B.S. *Deaths*, 1972.

Mortality rates

TABLE 4 MORTALITY RATES—1901 TO 1972

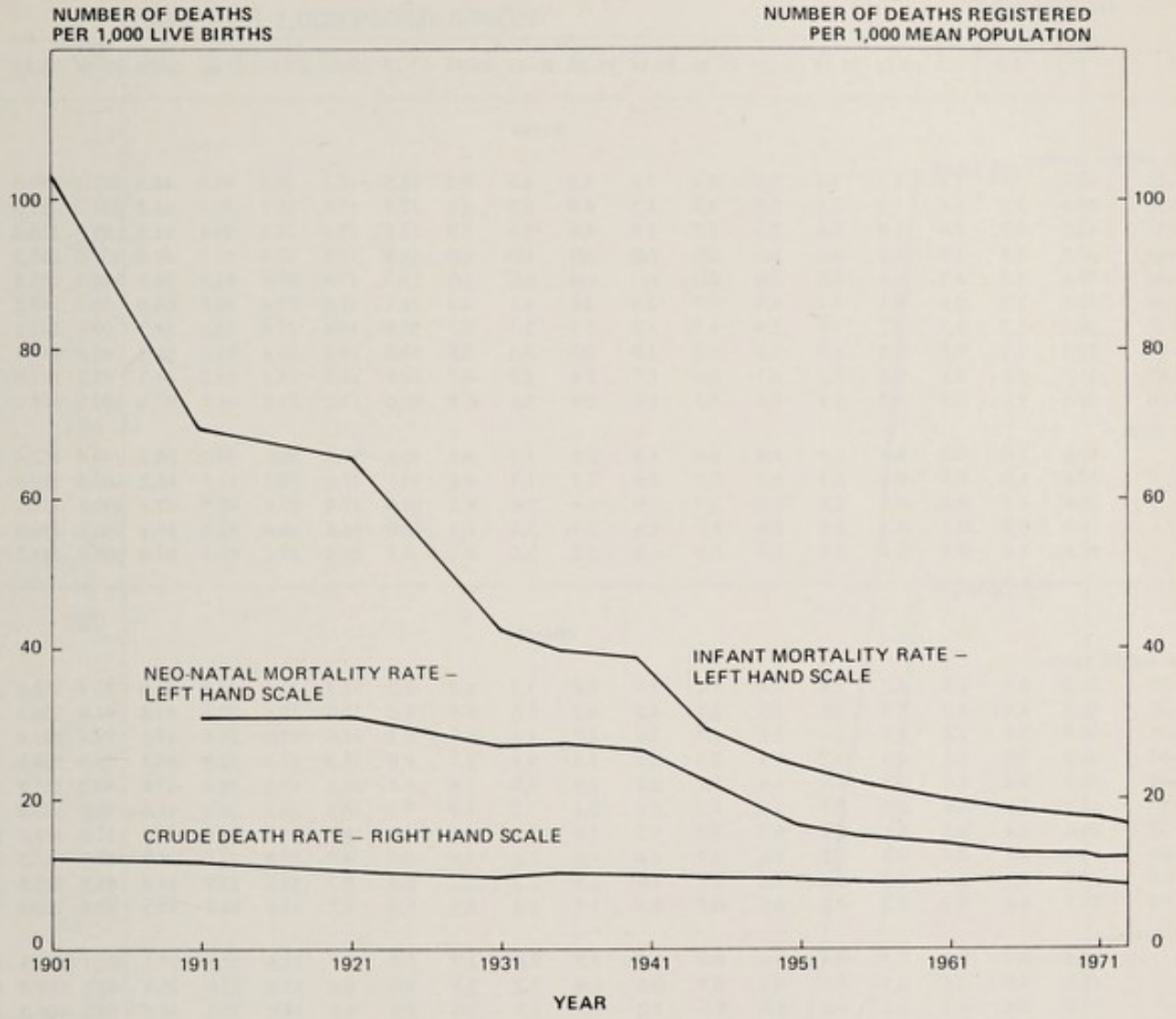
Year ended 31 December	*Crude death rate (a)*	*Infant mortality rate (b)*	*Neo-natal mortality rate (c)*
1901	12.2	103.6	(d)
1911	10.7	68.5	31.1
1921	9.9	65.7	31.2
1931	8.7	42.1	26.8
1935	9.5	39.8	27.5
1940 (e)	9.7	38.4	25.5
1945 (e)	9.5	29.4	21.8
1950	9.6	24.5	17.4
1955	8.9	22.0	15.5
1960	8.6	20.2	14.6
1961	8.5	19.5	14.0
1962	8.7	20.4	14.7
1963	8.7	19.6	14.3
1964	9.0	19.1	13.6
1965	8.8	18.5	13.2
1966 (f)	9.0	18.7	13.3
1967	8.7	18.3	13.3
1968	9.1	17.8	12.9
1969	8.7	17.9	13.0
1970	9.0	17.9	12.9
1971	8.7	17.3	12.2
1972	8.5	16.7	12.0

(a) Number of deaths registered per 1,000 mean population.
(b) The number of deaths of live born children within one year of birth per 1,000 live births.
(c) The number of deaths of live born children within twenty-eight days of birth per 1,000 live births.
(d) Not available.
(e) Excludes deaths of defence personnel.
(f) Prior to 1966 the rates exclude deaths identified as those of full-blood Aborigines.

Source: A.B.S. *Demography*, 1967-68.
A.B.S. *Deaths*, 1972.

Mortality rates

GRAPH 3 MORTALITY RATES—1901 TO 1972



Mortality rates

TABLE 5 AGE SPECIFIC DEATH RATES (a): SEX—AUSTRALIA—1921-25 TO 1972 (b)

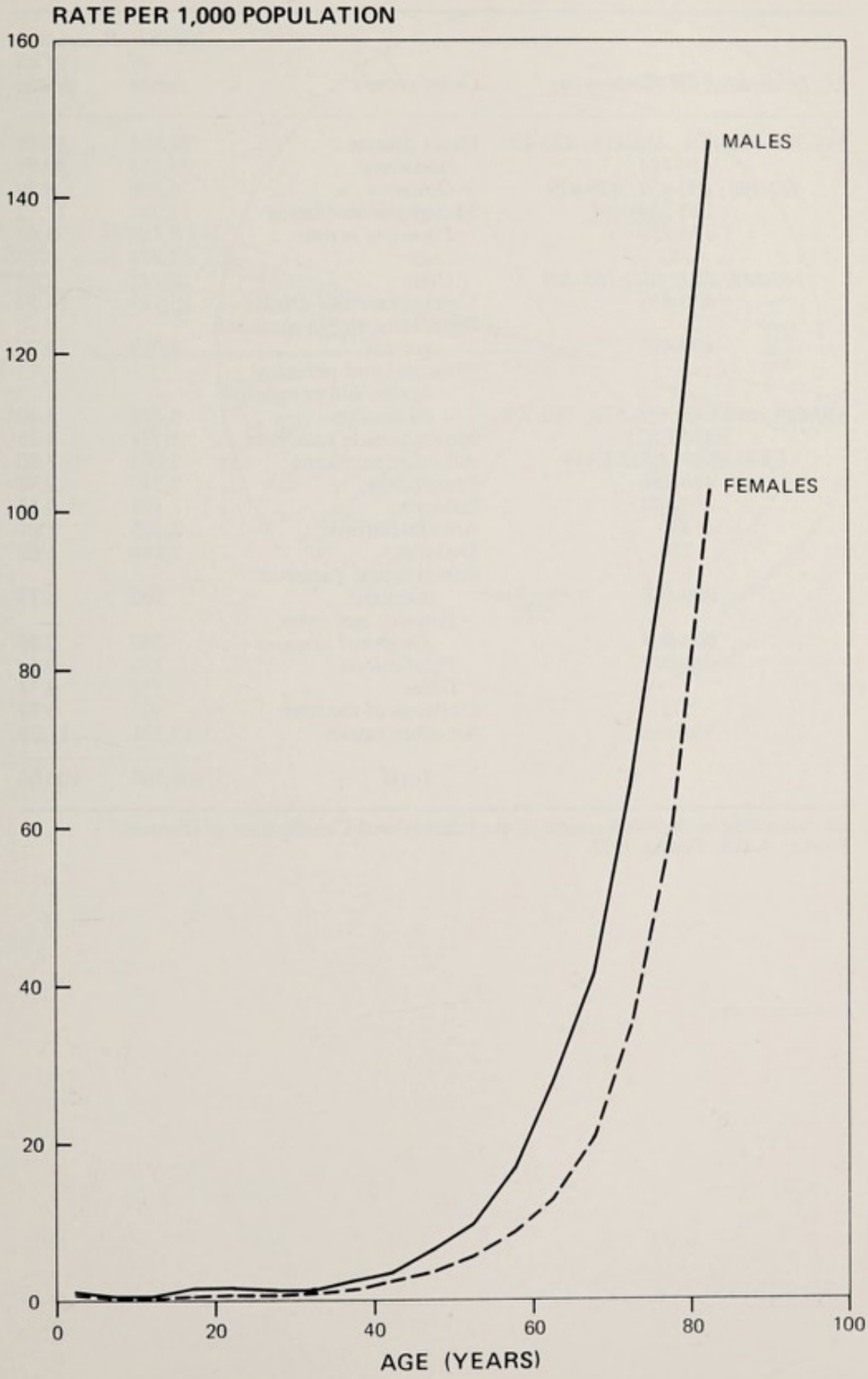
Period	Age group (years)																		
	(c)	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
MALES																			
Average annual rates—																			
1921-25	64.2	5.7	1.8	1.5	2.2	3.0	3.4	3.9	5.2	6.8	9.5	12.9	18.2	28.1	41.5	63.5	101.1	160.0	305.2
1926-30	57.7	5.2	1.6	1.3	2.1	2.8	3.2	3.7	4.6	6.2	8.9	12.7	17.8	26.5	40.7	61.5	101.2	152.0	335.8
1931-35	46.0	4.0	1.6	1.3	1.8	2.3	2.5	3.0	4.0	5.4	7.8	11.6	17.6	26.3	40.4	61.9	99.3	156.6	258.8
1936-40	43.2	3.6	1.5	1.2	(d)	(d)	(d)	(d)	(d)	(d)	(d)	11.8	17.8	27.4	41.3	63.0	100.0	158.2	277.4
1941-45	38.8	3.2	1.3	1.1	(d)	(d)	(d)	(d)	(d)	(d)	(d)	11.3	17.4	27.8	42.9	64.6	101.2	155.2	289.8
1946-50	30.1	1.9	0.9	0.8	1.4	1.8	1.7	2.0	2.6	4.1	6.8	11.1	17.6	27.4	42.4	64.0	99.3	149.7	255.3
1951-55	26.0	1.7	0.7	0.7	1.6	1.9	1.7	1.8	2 5	3.7	6.2	10.8	17.4	27.4	42.2	64.7	99.7	147.2	254.1
1956-60	23.3	1.3	0.6	0.5	1.4	1.8	1.5	1.8	2.3	3.5	5.9	10.0	16.9	26.6	42.0	63.5	97.5	145.0	251.2
1961-65	21.7	1.1	0.5	0.5	1.2	1.7	1.5	1.7	2.4	3.7	6.2	10.3	16.8	27.4	42.2	64.7	97.2	145.0	243.7
1966-70	20.4	1.0	0.5	0.5	1.4	1.8	1.5	1.6	2.4	3.8	6.2	10.4	17.2	27.8	44.3	67.0	102.7	149.2	245.9
Annual rates—																			
1968	19.8	1.0	0.5	0.5	1.5	1.8	1.4	1.6	2.4	3.7	6.1	10.6	17.4	28.7	44.2	68.2	104.4	157.4	266.1
1969	20.1	1.0	0.5	0.5	1.3	1.7	1.5	1.6	2.3	3.7	6.4	10.3	17.1	27.3	43.7	65.2	102.0	139.9	239.8
1970	20.6	1.1	0.5	0.4	1.5	1.9	1.4	1.6	2.4	3.6	6.2	10.6	17.4	27.9	45.5	67.7	107.1	153.3	244.5
1971	19.0	0.9	0.5	0.5	1.6	1.9	1.5	1.6	2.3	3.4	6.1	10.0	16.8	26.4	42.0	64.8	100.6	148.0	240.5
1972	18.9	1.0	0.4	0.4	1.5	1.7	1.3	1.4	2.2	3.5	6.1	9.7	16.4	27.1	41.1	64.9	100.3	147.1	238.6
FEMALES																			
Average annual rates—																			
1921-25	51.2	4.9	1.5	1.2	1.8	2.8	3.4	3.9	4.8	5.3	6.8	9.2	12.7	19.3	30.3	49.0	83.4	138.6	264.7
1926-30	46.0	4.8	1.3	1.0	1.6	2.7	3.3	3.5	4.3	5.0	6.6	8.8	12.3	18.8	30.0	47.8	81.8	126.7	285.8
1931-35	36.3	3.5	1.2	0.9	1.4	2.1	2.7	3.0	3.8	4.4	6.0	8.5	11.6	17.9	29.8	47.1	77.4	127.6	234.6
1936-40	34.2	3.2	1.1	0.8	1.2	1.9	2.4	2.7	3.3	4.1	5.7	8.0	11.3	17.9	28.9	46.5	79.7	124.9	244.8
1941-45	30.9	2.6	1.0	0.7	1.0	1.4	1.9	2.2	2.9	3.7	5.4	7.8	11.1	17.6	29.0	47.9	80.2	125.7	243.5
1946-50	23.7	1.6	0.6	0.5	0.7	1.0	1.3	1.6	2.2	3.2	4.9	7.3	10.3	16.2	26.0	44.6	74.7	120.8	221.8
1951-55	20.6	1.4	0.5	0.4	0.6	0.7	0.9	1.2	1.8	2.7	4.4	6.7	9.5	15.1	24.6	41.3	71.6	118.5	220.2
1956-60	18.7	1.1	0.4	0.4	0.5	0.6	0.7	1.0	1.6	2.4	3.9	5.7	8.7	13.8	23.0	38.8	63.9	113.5	215.6
1961-65	17.0	0.9	0.4	0.3	0.5	0.6	0.7	1.0	1.5	2.3	3.7	5.6	8.3	13.6	21.7	37.4	63.3	107.5	205.1
1966-70	15.7	0.8	0.3	0.3	0.6	0.6	0.7	0.9	1.5	2.3	3.7	5.9	8.7	13.6	22.1	37.3	63.6	105.9	201.0
Annual rates—																			
1968	15.6	0.9	0.4	0.3	0.6	0.6	0.6	1.0	1.5	2.4	3.7	5.7	8.7	13.8	22.3	37.1	65.1	108.3	217.8
1969	15.6	0.9	0.4	0.3	0.6	0.5	0.7	0.8	1.4	2.2	3.5	5.9	8.4	13.2	22.0	35.6	62.7	99.3	191.7
1970	15.0	0.8	0.3	0.3	0.6	0.6	0.7	1.0	1.7	2.3	3.6	5.8	8.8	14.0	22.4	38.8	64.8	108.0	198.6
1971	15.5	0.8	0.3	0.2	0.7	0.7	0.7	0.9	1.4	2.3	3.8	5.5	8.5	13.0	20.5	36.6	62.6	103.7	197.2
1972	14.4	0.8	0.3	0.3	0.5	0.6	0.6	0.9	1.3	2.2	3.6	5.5	8.4	12.7	20.3	34.6	59.6	102.3	188.8

(a) The age specific death rate is the number of deaths of a specified age per 1,000 of the population of that age.
(b) Excludes particulars of full-blood Aborigines prior to 1966.
(c) Infant deaths per 1,000 live births registered.
(d) Rates are not available as population estimates for males in these age groups exclusive of defence personnel were not compiled for the period September 1939 to June 1947.

Source: A.B.S. *Deaths*, 1972.

Mortality rates

GRAPH 4 AGE SPECIFIC DEATH RATE—YEAR ENDED 31 DECEMBER 1972



Cause of death

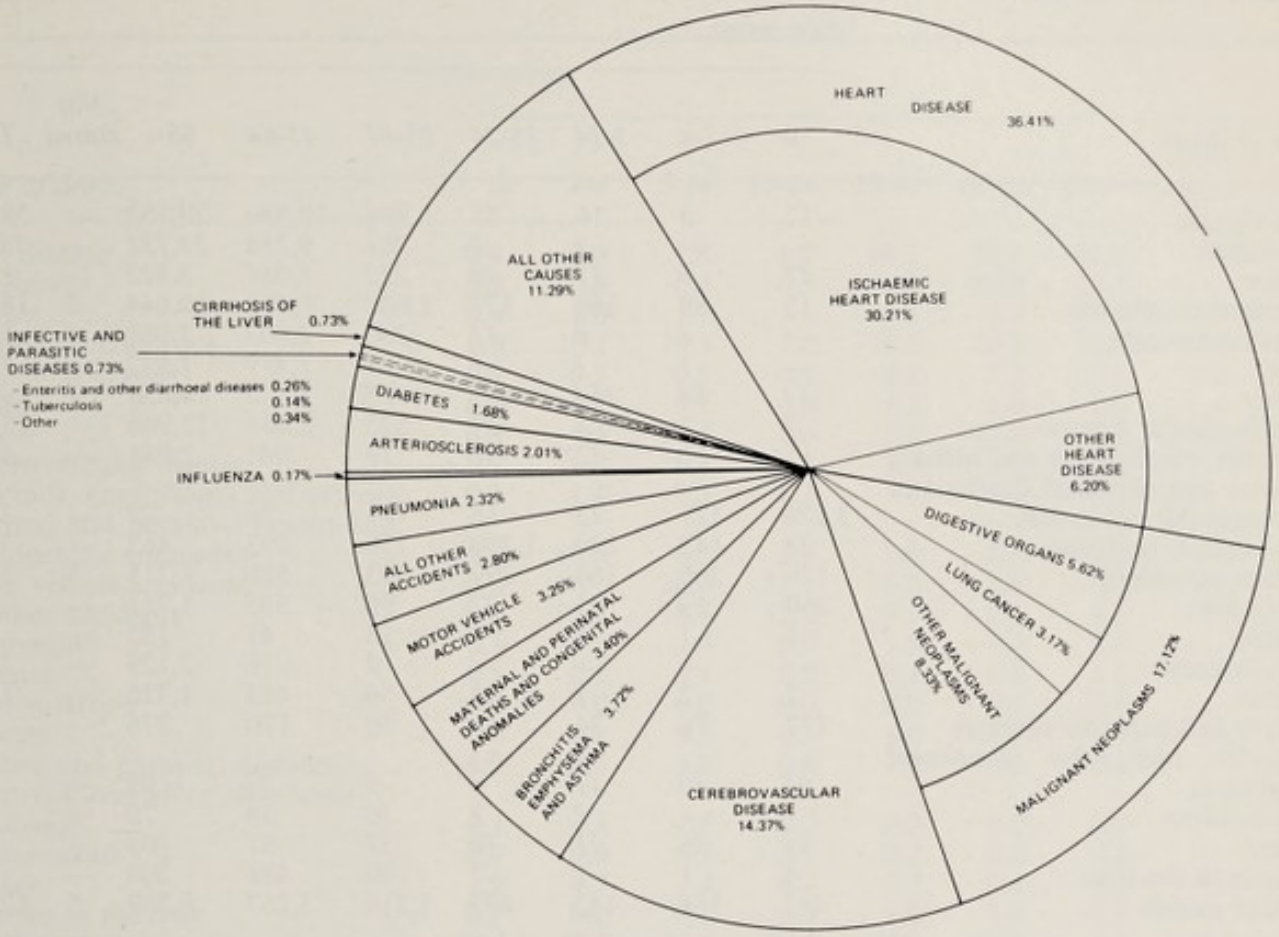
TABLE 6 NUMBER AND PERCENTAGE OF DEATHS BY CAUSE—YEAR ENDED 31 DECEMBER 1972

I.C.D. detailed list numbers (a)	*Cause groups*	*Number of deaths*	*Percentage of all deaths*
393-398; 400-404; 410-414; 420-429	Heart disease	39,964	36.41
410-414	*Ischaemic*	*33,156*	*30.21*
393-398; 400-404; 420-429	*Other*	*6,808*	*6.20*
140-209	Malignant neoplasms	18,786	17.12
150-159	*Digestive organs*	*6,167*	*5.62*
162	*Lung*	*3,474*	*3.17*
140-149; 160; 161; 163-209	*Other*	*9,145*	*8.33*
430-438	Cerebrovascular disease	15,769	14.37
490-493	Bronchitis, emphysema and asthma	4,078	3.72
630-639; 640-645; 650-678; 740-779	Maternal and perinatal deaths and congenital anomalies	3,736	3.40
E810-E823	Motor vehicle accidents	3,571	3.25
E800-E807; E825-E949	All other accidents	3,068	2.80
480-486	Pneumonia	2,547	2.32
470-474	Influenza	191	0.17
440	Arteriosclerosis	2,209	2.01
250	Diabetes	1,840	1.68
000-136	Infective and parasitic diseases	805	0.73
008-009	*Enteritis and other diarrhoeal diseases*	*280*	*0.26*
010-019	*Tuberculosis*	*150*	*0.14*
	Other	*375*	*0.34*
571	Cirrhosis of the liver	805	0.73
Various	All other causes	12,391	11.29
	Total	109,760	100.00

(a) According to the 8th Revision of the International Classification of Diseases.
Source: A.B.S. *Deaths*, 1972.

Cause of death

GRAPH 5 CAUSE OF DEATH AS PROPORTION TO ALL DEATHS—YEAR ENDED 31 DECEMBER 1972



Cause of death

TABLE 7 NUMBER OF DEATHS BY CAUSE AND AGE GROUP—YEAR ENDED 31 DECEMBER 1972

Cause of death	*Age group*								
	0	*1-4*	*5-14*	*15-24*	*25-44*	*45-64*	*65+*	*Not stated*	*Total*
Heart disease	17	9	16	45	984	10,340	28,553	—	39,964
Ischaemic	—	—	*1*	*7*	*761*	*9,256*	*23,131*	—	*33,156*
Other	*17*	*9*	*15*	*38*	*223*	*1,084*	*5,422*	—	*6,808*
Malignant neoplasms	13	89	169	172	1,040	6,657	10,644	2	18,786
Digestive organs	—	*4*	*4*	*11*	*236*	*2,003*	*3,908*	*1*	*6,167*
Lung	—	*1*	*1*	—	*81*	*1,479*	*1,912*	—	*3,474*
Other	*13*	*84*	*164*	*161*	*723*	*3,175*	*4,824*	*1*	*9,145*
Cerebrovascular disease	7	3	7	34	325	2,447	12,946	—	15,769
Bronchitis, emphysema and asthma	11	12	22	32	79	941	2,981	—	4,078
Maternal and perinatal deaths and congenital anomalies	3,278	129	73	56	95	76	29	—	3,736
Motor vehicle accidents	28	142	230	1,260	756	693	462	—	3,571
All other accidents	126	200	164	299	493	568	1,215	3	3,068
Pneumonia	299	53	21	22	96	345	1,711	—	2,547
Influenza	6	1	1	4	13	41	125	—	191
Arteriosclerosis	—	—	—	—	2	78	2,129	—	2,209
Diabetes	2	2	3	8	56	443	1,326	—	1,840
Infective and parasitic diseases	177	76	34	16	56	170	276	—	805
Enteritis and other diarrhoeal diseases	*91*	*40*	*11*	*4*	*9*	*33*	*92*	—	*280*
Tuberculosis	*1*	—	*2*	*2*	*10*	*56*	*79*	—	*150*
Other	*85*	*36*	*21*	*10*	*37*	*81*	*105*	—	*375*
Cirrhosis of the liver	4	1	1	7	100	488	204	—	805
All other causes	462	166	142	493	1,316	3,267	6,539	6	12,391
Total	4,430	883	883	2,448	5,411	26,554	69,140	11	109,760

Source: A.B.S. *Deaths*, 1972.

Cause of death

TABLE 8 CAUSE OF DEATH BY AGE GROUP—PERCENTAGE DISTRIBUTION—YEAR ENDED 31 DECEMBER 1972

(%)

Cause of death	*Age group*								
	0	*1-4*	*5-14*	*15-24*	*25-44*	*45-64*	*65 +*	*Not stated*	*Total*
Heart disease	0.4	1.0	1.8	1.8	18.2	38.9	41.3	—	36.4
Ischaemic	*0.0*	*0.0*	*0.1*	*0.3*	*14.1*	*34.9*	*33.5*	—	*30.2*
Other	*0.4*	*1.0*	*1.7*	*1.6*	*4.1*	*4.1*	*7.8*	—	*6.2*
Malignant neoplasms	0.3	10.1	19.1	7.0	19.2	25.1	15.4	18.2	17.1
Digestive organs	*0.0*	*0.5*	*0.5*	*0.4*	*4.4*	*7.5*	*5.7*	*9.1*	*5.6*
Lung	*0.0*	*0.1*	*0.1*	*0.0*	*1.5*	*5.6*	*2.8*	—	*3.2*
Other	*0.3*	*9.5*	*18.6*	*6.6*	*13.4*	*12.0*	*7.0*	*9.1*	*8.3*
Cerebrovascular disease	0.2	0.3	0.8	1.4	6.0	9.2	18.7	—	14.4
Bronchitis, emphysema and asthma	0.2	1.4	2.5	1.3	1.5	3.5	4.3	—	3.7
Maternal and perinatal deaths and cogenital anomalies	74.0	14.6	8.3	2.3	1.8	0.3	0.0	—	3.4
Motor vehicle accidents	0.6	16.1	26.0	51.5	14.0	2.6	0.7	—	3.3
All other accidents	2.8	22.7	18.6	12.2	9.1	2.1	1.8	27.3	2.8
Pneumonia	6.7	6.0	2.4	0.9	1.8	1.3	2.5	—	2.3
Influenza	0.1	0.1	0.1	0.2	0.2	0.2	0.2	—	0.2
Arteriosclerosis	0.0	0.0	0.0	0.0	0.0	0.3	3.1	—	2.0
Diabetes	0.0	0.2	0.3	0.3	1.0	1.7	1.9	—	1.7
Infective and parasitic diseases	4.0	8.6	3.8	0.6	1.0	0.6	0.4	—	0.7
Enteritis and other diarrhoeal disease	*2.1*	*4.5*	*1.2*	*0.2*	*0.2*	*0.1*	*0.1*	—	*0.3*
Tuberculosis	*0.0*	*0.0*	*0.2*	*0.1*	*0.2*	*0.2*	*0.1*	—	*0.1*
Other	*1.9*	*4.1*	*2.4*	*0.4*	*0.7*	*0.3*	*0.2*	—	*0.3*
Cirrhosis of the liver	0.1	0.1	0.1	0.3	1.8	1.8	0.3	—	0.7
All other causes	10.4	18.8	16.1	20.1	24.3	12.3	9.5	54.5	11.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: A.B.S. *Deaths*, 1972.

Cause of death

TABLE 9 AGE SPECIFIC DEATH RATE (a)—YEAR ENDED 31 DECEMBER 1972

Cause of death	*Age group*							
	0	*1-4*	*5-14*	*15-24*	*25-44*	*45-64*	*65 +*	*Total*
Heart disease	—	9	7	20	294	4,009	26,427	3,084
Ischaemic	—	—	—	*3*	*228*	*3,588*	*21,409*	*2,559*
Other	—	*9*	*6*	*17*	*67*	*420*	*5,018*	*525*
Malignant neoplasms	—	89	69	77	311	2,581	9,852	1,450
Digestive organs	—	*4*	*2*	*5*	*71*	*777*	*3,617*	*476*
Lung	—	*1*	—	—	*24*	*573*	*1,770*	*268*
Other	—	*84*	*67*	*72*	*216*	*1,231*	*4,465*	*706*
Cerebrovascular disease	—	3	3	15	97	949	11,982	1,217
Bronchitis, emphysema and asthma	—	12	9	14	24	365	2,759	315
Maternal and perinatal deaths and congenital anomalies	12	130	30	25	28	29	27	288
Motor vehicle accidents	—	143	94	561	226	269	428	276
All other accidents	—	201	67	133	147	220	1,125	237
Pneumonia	1	53	9	10	29	134	1,584	197
Influenza	—	1	—	2	4	16	116	15
Arteriosclerosis	—	—	—	—	1	30	1,970	170
Diabetes	—	2	1	4	17	172	1,227	142
Infective and parasitic diseases	1	76	14	7	17	66	255	62
Enteritis and other diarrhoeal diseases	—	*40*	*4*	*2*	*3*	*13*	*85*	*22*
Tuberculosis	—	—	*1*	*1*	*3*	*22*	*73*	*12*
Other	—	*36*	*9*	*4*	*11*	*31*	*97*	*29*
Cirrhosis of the liver	—	1	—	3	30	189	189	62
All other causes	2	167	58	220	394	1,266	6,052	957
Total	17	887	361	1,091	1,618	10,295	63,992	8,471

(a) Number of deaths registered per million of population at risk (i.e. in each age group) except for children under one year of age which are expressed as a rate per 1,000 live births registered.

Source: Figures calculated from tables of deaths by cause, A.B.S. *Deaths*, 1972, and population estimates.

Note: Figures for 1968 onwards are based on the Eighth Revision of the International Classification of Diseases and will not in all cases be strictly comparable with figures for earlier years.

Cause of death

TABLE 10 NUMBER OF DEATHS BY CAUSE—1963 TO 1972

Cause of death	*1963*	*1964*	*1965*	*1966*	*1967 (a)*	*1968*	*1969*	*1970*	*1971*	*1972*
Heart disease	35,098	37,453	37,389	39,102	38,327	41,312	39,982	41,445	40,683	39,964
Ischaemic	*29,378*	*31,393*	*31,530*	*33,035*	*32,760*	*33,411*	*32,711*	*33,939*	*33,573*	*33,156*
Other	*5,720*	*6,060*	*5,859*	*6,067*	*5,567*	*7,901*	*7,271*	*7,506*	*7,110*	*6,808*
Malignant neoplasms	14,776	15,166	15,131	15,787	16,170	17,118	17,350	18,119	18,338	18,786
Digestive organs	*5,412*	*5,328*	*5,383*	*5,606*	*5,659*	*5,788*	*5,897*	*6,018*	*6,004*	*6,167*
Lung	*2,121*	*2,325*	*2,395*	*2,576*	*2,768*	*2,893*	*3,037*	*3,244*	*3,406*	*3,474*
Other	*7,243*	*7,513*	*7,353*	*7,605*	*7,743*	*8,437*	*8,416*	*8,857*	*8,928*	*9,145*
Cerebrovascular disease	12,579	13,122	13,644	13,920	13,523	15,364	14,633	15,686	15,731	15,769
Bronchitis, emphysema and asthma	2,234	2,681	2,707	3,024	2,879	3,602	3,675	4,205	3,911	4,078
Maternal and perinatal deaths and congenital anomalies	3,996	3,824	3,634	3,503	3,525	3,636	3,736	3,898	3,885	3,736
Motor vehicle accidents	2,670	2,961	3,163	3,266	3,335	3,455	3,688	3,952	3,847	3,571
All other accidents	3,567	3,010	2,957	2,971	3,269	3,044	2,738	2,978	2,955	3,068
Pneumonia	3,158	3,722	3,370	3,950	3,332	2,952	2,666	3,143	2,725	2,547
Influenza	67	302	142	249	55	323	215	813	96	191
Arteriosclerosis	2,386	2,482	2,220	2,333	2,283	2,574	2,261	2,560	2,350	2,209
Diabetes	1,342	1,475	1,472	1,638	1,644	1,955	1,757	1,878	1,801	1,840
Infective and parasitic diseases	1,097	1,071	951	961	977	969	919	942	914	805
Enteritis and other diarrhoeal diseases	*248*	*253*	*282*	*259*	*327*	*321*	*344*	*322*	*352*	*280*
Tuberculosis	*440*	*413*	*294*	*321*	*275*	*243*	*213*	*203*	*182*	*150*
Other	*409*	*405*	*375*	*381*	*375*	*405*	*362*	*417*	*380*	*375*
Cirrhosis of the liver	535	546	547	598	604	697	676	703	768	805
All other causes	11,389	12,779	12,388	12,627	12,780	12,546	12,200	12,726	12,646	12,391
Total	94,894	100,594	99,715	103,929	102,703	109,547	106,496	113,048	110,650	109,760

(a) Prior to 1967 deaths identified as those of full-blood Aborigines were excluded.

Source: A.B.S. *Causes of Death*, 1963 to 1971.
A.B.S. *Deaths*, 1972.

Cause of death

TABLE 11 CAUSE OF DEATH—PERCENTAGE DISTRIBUTION—1963 TO 1972

Cause of death	*1963*	*1964*	*1965*	*1966*	*1967 (a)*	*1968*	*1969*	*1970*	*1971*	*1972*
Heart disease	37.0	37.2	37.5	37.6	37.3	37.7	37.5	36.7	36.8	36.4
Ischaemic	*31.0*	*31.2*	*31.6*	*31.8*	*31.9*	*30.5*	*30.7*	*30.0*	*30.3*	*30.2*
Other	*6.0*	*6.0*	*5.9*	*5.8*	*5.4*	*7.2*	*6.8*	*6.6*	*6.4*	*6.2*
Malignant neoplasms	15.6	15.1	15.2	15.2	15.7	15.6	16.3	16.0	16.6	17.1
Digestive organs	*5.7*	*5.3*	*5.4*	*5.4*	*5.5*	*5.3*	*5.5*	*5.3*	*5.4*	*5.6*
Lung	*2.2*	*2.3*	*2.4*	*2.5*	*2.7*	*2.6*	*2.9*	*2.9*	*3.1*	*3.2*
Other	*7.6*	*7.5*	*7.4*	*7.3*	*7.5*	*7.7*	*7.9*	*7.8*	*8.1*	*8.3*
Cerebrovascular disease	13.3	13.0	13.7	13.4	13.2	14.0	13.7	13.9	14.2	14.4
Bronchitis, emphysema and asthma	2.4	2.7	2.7	2.9	2.8	3.3	3.4	3.7	3.5	3.7
Maternal and perinatal deaths and congenital anomalies	4.2	3.8	3.6	3.4	3.4	3.3	3.5	3.4	3.5	3.4
Motor vehicle accidents	2.8	2.9	3.2	3.1	3.2	3.2	3.5	3.5	3.5	3.3
All other accidents	3.8	3.0	3.0	2.9	3.2	2.8	2.6	2.6	2.7	2.8
Pneumonia	3.3	3.7	3.4	3.8	3.2	2.7	2.5	2.8	2.5	2.3
Influenza	0.1	0.3	0.1	0.2	0.1	0.3	0.2	0.7	0.1	0.2
Arteriosclerosis	2.5	2.5	2.2	2.2	2.2	2.3	2.1	2.3	2.1	2.0
Diabetes	1.4	1.5	1.5	1.6	1.6	1.8	1.6	1.7	1.6	1.7
Infective and parasitic diseases	1.2	1.1	1.0	0.9	1.0	0.9	0.8	0.8	0.8	0.7
Enteritis and other diarrhoeal diseases	*0.3*	*0.3*	*0.3*	*0.3*	*0.3*	*0.3*	*0.3*	*0.3*	*0.3*	*0.3*
Tuberculosis	*0.5*	*0.4*	*0.3*	*0.3*	*0.3*	*0.2*	*0.2*	*0.2*	*0.2*	*0.1*
Other	*0.4*	*0.4*	*0.4*	*0.4*	*0.4*	*0.4*	*0.3*	*0.4*	*0.3*	*0.3*
Cirrhosis of the liver	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7
All other causes	12.0	12.7	12.4	12.2	12.4	11.5	11.5	11.3	11.4	11.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Prior to 1967 deaths identified as those of full-blood Aborgines were excluded.

Source: A.B.S. *Causes of Death*, 1963 to 1971.
A.B.S. *Deaths*, 1972.

Cause of death

TABLE 12 CAUSE OF DEATH—RATE OF DEATH PER 100,000 POPULATION—1963 TO 1972

Cause of death	*1963*	*1964*	*1965*	*1966*	*1967 (a)*	*1968*	*1969*	*1970*	*1971*	*1972*
Hearth disease	322	337	330	337	325	344	326	331	319	308
Ischaemic	*269*	*282*	*278*	*285*	*278*	*278*	*267*	*271*	*263*	*256*
Other	*52*	*54*	*52*	*52*	*47*	*66*	*59*	*60*	*56*	*52*
Malignant neoplasms	135	136	133	136	137	143	141	145	144	145
Digestive organs	*50*	*48*	*47*	*48*	*48*	*48*	*48*	*48*	*47*	*48*
Lung	*19*	*21*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*27*
Other	*66*	*68*	*65*	*66*	*66*	*70*	*69*	*71*	*70*	*70*
Cerebrovascular disease	115	118	120	120	115	128	119	125	123	122
Bronchitis, emphysema and asthma	20	24	24	26	24	30	30	34	31	31
Maternal and perinatal deaths and congenital anomalies	37	34	32	30	30	30	30	31	30	29
Motor vehicle accidents	24	27	28	28	28	29	30	32	30	28
All other accidents	33	27	26	26	28	25	22	24	23	24
Pneumonia	29	33	30	34	28	25	22	25	21	20
Influenza	1	3	1	2	—	3	2	7	1	1
Arteriosclerosis	22	22	20	20	19	21	18	20	18	17
Diabetes	12	13	13	14	14	16	14	15	14	14
Infective and parasitic diseases	10	10	8	8	8	8	7	8	7	6
Enteritis and other diarrhoeal diseases	*2*	*2*	*2*	*2*	*3*	*3*	*3*	*2*	*3*	*2*
Tuberculosis	*4*	*4*	*3*	*3*	*2*	*2*	*2*	*2*	*1*	*1*
Other	*4*	*4*	*3*	*3*	*3*	*3*	*2*	*3*	*3*	*3*
Cirrhosis of the liver	5	5	5	5	5	6	6	6	6	6
All other causes	104	115	109	109	108	104	99	102	99	96
Total	870	904	879	896	870	912	868	904	867	847

(a) Prior to 1967 deaths identified as those of full-blood Aborgines were excluded.

Source: Figures calculated from tables of deaths by cause, A.B.S. *Causes of Death*, 1963 to 1971, *Deaths*, 1972, and population estimates.

Cause of death

TABLE 13 DEATHS FROM CEREBROVASCULAR DISEASE—NUMBER, RATE AND PERCENTAGE OF ALL DEATHS—AGE GROUPS—1962 AND 1972

	1962 (a)			*1972 (b)*		
Age group	*Number of deaths*	*Number of deaths per 100,000 population (c)*	*Percentage of all deaths (d)*	*Number of deaths*	*Number of deaths per 100,000 population (c)*	*Percentage of all deaths (d)*
0- 9	15	0.68	0.24	11	0.45	0.19
10-19	15	0.79	1.38	24	1.01	1.51
20-29	39	2.83	2.50	28	1.33	1.26
30-39	146	9.81	6.01	139	8.88	6.15
40-44	152	21.71	7.43	174	22.36	7.89
45-49	281	42.50	8.56	292	37.59	7.71
50-54	431	74.05	9.29	448	65.55	8.63
55-59	602	126.07	10.03	667	109.89	8.90
60-64	978	241.48	12.21	1,040	203.02	10.32
65-69	1,342	400.96	13.09	1,519	383.26	12.71
70-74	2,044	751.19	15.28	2,230	753.69	15.82
75 and over	6,124	1,996.09	17.90	9,197	2,368.97	21.34
Not stated	4	n.a.	13.33	—	n.a.	—
Total	12,173	113.76	13.07	15,769	121.68	14.37

(a) Excludes full-blood Aborigines.
(b) Includes full-blood Aborigines.
(c) Number of deaths per 100,000 population in each age group.
(d) Percentage of deaths from cerebrovascular disease in each age group to all deaths in each age group.
Source: A.B.S. *Demography*, 1962.
A.B.S. *Causes of Death*, 1972.

Cause of death

TABLE 14 DEATHS FROM CEREBROVASCULAR DISEASE—AGE GROUPS—1963 TO 1972

Age group	1963	1964	1965	1966	1967 (a)	1968	1969	1970	1971	1972
					NUMBER OF DEATHS					
0- 9	10	10	7	11	13	15	9	12	14	11
10-19	15	22	17	19	14	20	14	22	17	24
20-29	24	41	32	34	38	35	41	38	45	28
30-39	128	123	132	135	107	136	142	158	115	139
40-44	156	176	170	194	172	183	166	168	182	174
45-49	250	285	290	253	323	301	296	316	300	292
50-54	455	439	501	482	459	479	474	432	432	448
55-59	572	677	658	658	651	722	648	717	670	667
60-64	923	966	972	947	938	1,045	1,020	1,037	1,037	1,040
65-69	1,351	1,318	1,414	1,428	1,360	1,551	1,520	1,655	1,443	1,519
70-74	2,110	2,156	2,083	2,151	2,072	2,192	2,097	2,263	2,253	2,230
75 and over	6,584	6,908	7,366	7,608	7,375	8,685	8,204	8,867	9,221	9,197
Not stated	1	1	2	—	1	—	2	1	2	—
Total	12,579	13,122	13,644	13,920	13,523	15,364	14,633	15,686	15,731	15,769
					NUMBER OF DEATHS PER 100,000 POPULATION IN EACH AGE GROUP					
0- 9	0.4	0.4	0.3	0.5	0.6	0.6	0.4	0.5	0.6	0.4
10-19	0.8	1.1	0.8	0.9	0.6	0.9	0.6	1.0	0.7	1.0
20-29	1.7	2.8	2.1	2.1	2.2	2.0	2.2	1.9	2.2	1.3
30-39	8.7	8.4	9.1	9.3	7.3	9.3	9.5	10.5	7.5	8.9
40-44	21.5	23.4	22.1	25.1	22.1	23.4	21.0	21.3	23.1	22.4
45-49	38.1	43.9	44.4	39.4	46.1	41.3	39.3	41.0	38.7	37.6
50-54	76.0	71.0	78.9	75.0	71.1	74.9	75.0	68.0	65.4	65.6
55-59	115.8	132.5	125.1	121.4	116.5	126.1	110.1	119.5	111.0	109.9
60-64	225.6	231.9	229.1	218.4	210.1	226.7	214.3	212.7	207.3	203.0
65-69	398.3	385.7	404.9	402.3	376.7	423.6	406.3	435.2	371.3	383.3
70-74	767.8	782.3	756.4	777.4	749.2	787.9	753.8	798.9	782.2	753.3
75 and over	2,063.8	2,088.3	2,155.7	2,159.5	2,037.2	2,349.1	2,191.3	2,332.2	2,400.2	2,369.0
Total	115.3	118.0	120.3	120.5	114.6	127.9	119.3	125.4	123.3	121.7

(a) Prior to 1967 deaths identified as those of full-blood Aborigines were excluded.

Source: A.B.S. *Causes of Death*, 1963 to 1972.

Cause of death

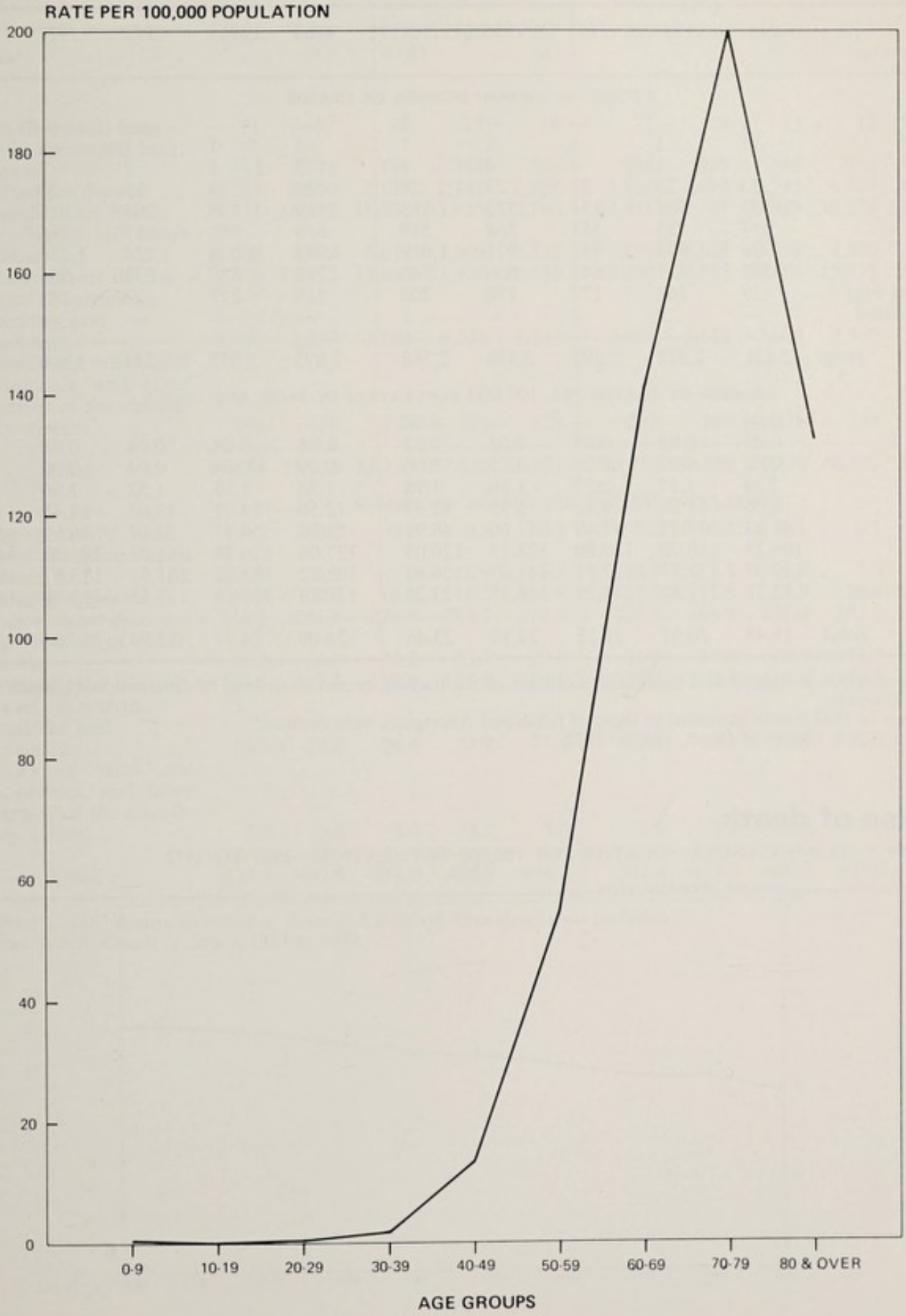
TABLE 15 DEATHS FROM NEOPLASMS—1963 TO 1972

Disease	1963	1964	1965	1966	1967 (a)	1968	1969	1970	1971	1972
	NUMBER OF DEATHS									
Malignant neoplasm of buccal cavity and pharynx	282	279	277	292	318	341	335	362	338	363
Malignant neoplasm of digestive organs and peritoneum	5,412	5,328	5,383	5,606	5,659	5,788	5,897	6,018	6,004	6,167
Malignant neoplasm of respiratory system (b)	2,303	2,508	2,574	2,768	2,973	3,096	3,241	3,458	3,622	3,701
Malignant neoplasm of bone, connective tissue, skin and breast	1,910	1,927	1,898	2,012	2,046	2,072	2,149	2,191	2,300	2,255
Malignant neoplasm of genito-urinary organs	2,624	2,713	2,662	2,685	2,728	2,905	2,911	3,026	2,990	3,046
Malignant neoplasm of other and unspecified sites	980	998	979	1,013	1,006	1,295	1,220	1,368	1,386	1,513
Neoplasm of lymphatic and haematopoietic tissue	1,265	1,413	1,358	1,411	1,440	1,621	1,597	1,696	1,698	1,741
Benign neoplasm	135	129	113	129	120	110	135	124	113	130
Neoplasm of unspecified nature	62	60	72	68	59	64	64	72	76	60
Total	14,973	15,355	15,316	15,984	16,349	17,292	17,549	18,315	18,527	18,976
	NUMBER OF DEATHS PER 100,000 POPULATION									
Malignant neoplasm of buccal cavity and pharynx	2.6	2.5	2.4	2.5	2.7	2.8	2.7	2.9	2.6	2.8
Malignant neoplasm of digestive organs and peritoneum	49.4	47.7	47.3	48.3	47.9	48.1	48.0	48.1	47.1	47.6
Malignant neoplasm of respiratory system (b)	21.0	22.5	22.6	23.9	25.2	25.8	26.4	27.6	28.4	28.6
Malignant neoplasm of bone, connective tissue, skin and breast	17.4	17.3	16.7	17.3	17.3	17.2	17.5	17.5	18.0	17.4
Malignant neoplasm of genito-urinary organs	24.0	24.3	23.4	23.1	23.1	24.2	23.7	24.2	23.4	23.5
Malignant neoplasm of other and unspecified sites	8.9	8.9	8.6	8.7	8.5	10.8	9.9	10.9	10.9	11.7
Neoplasm of lymphatic and haematopoietic tissue	11.6	12.7	11.9	12.2	12.2	13.5	13.0	13.5	13.3	13.4
Benign neoplasm	1.2	1.2	1.0	1.1	1.0	0.9	1.1	1.0	0.9	1.0
Neoplasm of unspecified nature	0.6	0.5	0.6	0.6	0.5	0.5	0.5	0.6	0.6	0.5
Total	136.7	137.5	134.5	137.8	138.5	144.0	143.1	146.0	145.2	146.4

(a) Prior to 1967 deaths identified as those of full-blood Aborigines were excluded.
(b) For lung cancer, which constitutes a majority of these cases, see Table 16.
Source: A.B.S. *Causes of Death*, 1963 to 1972.

Cause of death

GRAPH 6 LUNG CANCER—NUMBER OF DEATHS PER 100,000 POPULATION—AGE GROUPS—YEAR ENDED 31 DECEMBER 1972



Cause of death

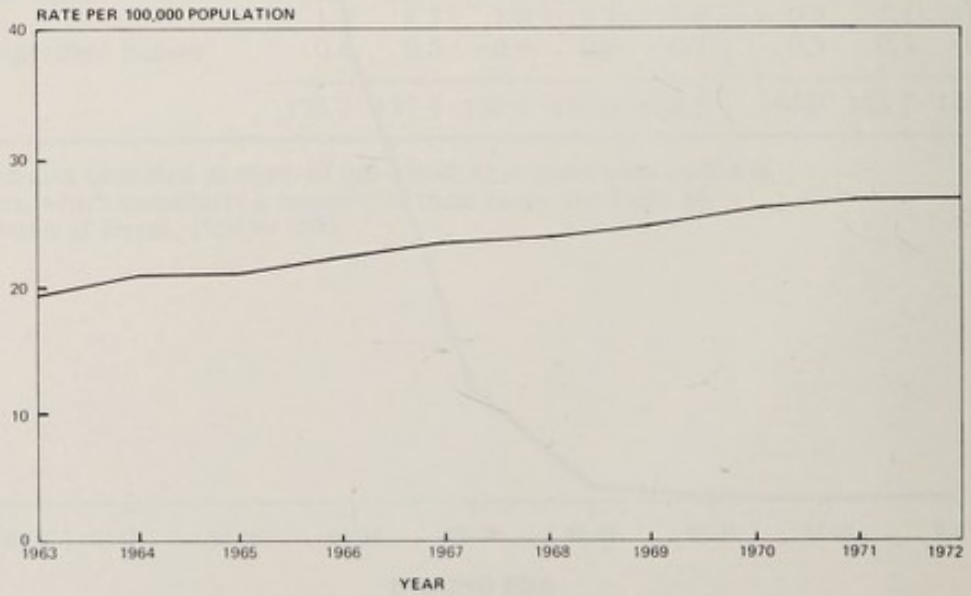
TABLE 16 DEATHS FROM LUNG CANCER (a)—AGE GROUPS—1963 TO 1972

Age group	*1963*	*1964*	*1965*	*1966*	*1967 (b)*	*1968*	*1969*	*1970*	*1971*	*1972*
					NUMBER OF DEATHS					
0- 9	1	—	—	—	1	—	—	—	—	2
10-19	1	1	1	1	1	1	1	1	1	—
20-29	6	1	4	4	1	2	1	1	2	5
30-39	33	23	33	27	29	24	23	23	30	30
40-49	153	158	134	173	183	189	228	203	226	211
50-59	457	533	551	564	589	619	661	687	716	703
60-69	796	834	857	971	1,018	1,051	1,074	1,224	1,288	1,282
70-79	545	611	643	666	745	791	826	878	905	991
80 and over	129	162	172	170	200	216	223	227	238	250
Not stated	—	2	—	—	1	—	—	—	—	—
Total	2,121	2,325	2,395	2,576	2,768	2,893	3,037	3,244	3,406	3,474
					NUMBER OF DEATHS PER 100,000 POPULATION IN EACH AGE GROUP					
0- 9	0.04	—	—	—	0.04	—	—	—	—	0.08
10-19	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	—
20-29	0.42	0.07	0.26	0.25	0.06	0.09	0.04	0.04	0.09	0.24
30-39	2.24	1.57	2.27	1.86	1.98	1.34	1.55	1.52	1.96	1.92
40-49	11.06	11.28	9.42	11.93	12.37	12.50	14.77	13.02	14.45	13.57
50-59	41.83	47.22	47.48	47.60	48.91	51.06	54.17	55.61	56.64	54.48
60-69	106.25	110.00	110.80	123.13	126.05	127.06	126.36	141.05	144.88	141.10
70-79	120.07	132.37	137.81	141.07	156.41	165.22	172.93	181.91	185.67	199.99
80 and over	92.21	111.88	114.29	108.35	123.26	127.69	127.49	125.55	128.78	132.57
Total	19.45	20.91	21.12	22.30	23.46	24.09	24.77	25.94	26.70	26.81

(a) Lung cancer is defined as a malignant neoplasm of the trachea, bronchus or lung by International Classification of Diseases.
(b) Prior to 1967 deaths identified as those of full-blood Aborigines were excluded.
Source: A.B.S. *Causes of Death*, 1963 to 1972.

Cause of death

GRAPH 7 LUNG CANCER—DEATHS PER 100,000 POPULATION—1963 TO 1972



Cause of death

TABLE 17 DEATHS FROM DISEASES OF THE CIRCULATORY SYSTEM—1963 TO 1972

Disease	*1963*	*1964*	*1965*	*1966*	*1967 (a)*	*1968*	*1969*	*1970*	*1971*	*1972*
					NUMBER OF DEATHS					
Active rheumatic fever	21	23	18	13	14	21	23	13	12	10
Chronic rheumatic heart disease	742	773	799	798	736	996	919	965	931	870
Hypertensive disease	2,238	2,300	2,125	2,141	1,988	1,866	1,694	1,743	1,629	1,497
Ischaemic heart disease	29,378	31,393	31,530	33,035	32,760	33,411	32,711	33,939	33,573	33,156
Other forms of heart disease	3,523	3,794	3,673	3,909	3,528	5,039	4,658	4,798	4,550	4,441
Cerebrovascular disease	12,579	13,122	13,644	13,920	13,523	15,364	14,633	15,686	15,731	15,769
Diseases of arteries, arterioles and capillaries	3,101	3,279	3,005	3,235	3,243	3,941	3,622	3,914	3,842	3,702
Diseases of veins and lymphatics, and other diseases of the circulatory system	266	336	339	371	429	292	265	318	344	289
Total	51,848	55,020	55,133	57,422	56,221	60,930	58,525	61,376	60,612	59,734
					NUMBER OF DEATHS PER 100,000 POPULATION					
Active rheumatic fever	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1
Chronic rheumatic heart disease	6.8	6.9	7.0	6.9	6.2	8.3	7.5	7.7	7.3	6.7
Hypertensive disease	20.4	20.6	18.7	18.5	16.8	15.5	13.8	13.9	12.7	11.6
Ischaemic heart disease	268.3	281.1	276.8	284.7	277.5	278.2	266.7	271.4	263.2	255.9
Other forms of heart disease	32.2	34.0	32.2	33.7	29.9	41.9	37.9	38.4	35.7	34.3
Cerebrovascular disease	114.9	117.5	119.8	120.0	114.5	127.9	119.3	125.4	123.3	121.7
Diseases of arteries, arterioles and capillaries	28.3	29.4	26.4	27.9	27.5	32.8	29.5	31.3	30.1	28.6
Diseases of veins and lymphatics, and other diseases of the circulatory system	2.4	3.0	3.0	3.2	3.6	2.4	2.2	2.5	2.7	2.2
Total	473.4	492.6	484.0	494.9	476.2	507.4	477.2	490.7	475.2	460.9

(a) Prior to 1967 deaths identified as those of full-blood Aborigines were excluded.
Source: A.B.S. *Causes of Death*, 1963 to 1972.

Cause of death

TABLE 18 NUMBER OF DEATHS DUE TO ACCIDENTS, POISONINGS AND VIOLENCE—STATES AND TERRITORIES—YEAR ENDED 31 DECEMBER 1972

Cause of death	*N.S.W.*	*Vic.*	*Qld.*	*S.A.*	*W.A.*	*Tas.*	*A.C.T.*	*N.T.*	*Aust.*
				NUMBER OF DEATHS					
Accidents—									
Railway	38	19	9	4	6	5	—	—	81
Motor vehicle	1,157	964	623	302	323	120	37	45	3,571
Water transport	37	23	24	9	10	8	—	—	111
Air and space transport	11	10	8	14	2	—	—	9	54
Falls	401	457	196	99	69	31	7	4	1,264
Caused by fire and flames	82	57	26	18	15	7	—	3	208
Drowning	129	67	95	40	41	20	3	14	409
Poisonings—									
Drugs and medicaments	42	5	13	3	11	3	1	—	78
Other	30	6	5	3	4	2	—	—	50
Other	319	141	176	40	77	30	7	23	813
Total	2,246	1,749	1,175	532	558	226	55	98	6,639
Suicide and self-inflicted injuries	644	433	231	127	130	43	8	9	1,625
Homicide and injuries purposely inflicted by other persons	72	52	46	17	15	6	3	8	219
Other poisonings	44	37	—	—	—	—	—	—	81
Other external causes	67	31	2	—	3	—	—	2	105
Total	3,073	2,302	1,454	676	706	275	66	117	8,669
				NUMBER OF DEATHS PER 100,000 POPULATION					
Accidents—									
Railway	0.8	0.5	0.5	0.3	0.6	1.3	—	—	0.6
Motor vehicle	24.8	27.2	33.3	25.5	30.7	30.6	23.5	48.4	27.6
Water transport	0.8	0.6	1.3	0.8	0.9	2.0	—	—	0.9
Air and space transport	0.2	0.3	0.4	1.2	0.2	—	—	9.7	0.4
Falls	8.6	12.9	10.5	8.3	6.6	7.9	4.4	4.3	9.8
Caused by fire and flames	1.8	1.6	1.4	1.5	1.4	1.8	—	3.2	1.6
Drowning	2.8	1.9	5.1	3.4	3.9	5.1	1.9	15.1	3.2
Poisonings—									
Drugs and medicaments	0.9	0.1	0.7	0.3	1.0	0.8	0.6	—	0.6
Other	0.6	0.2	0.3	0.3	0.4	0.5	—	—	0.4
Other	6.8	4.0	9.4	3.4	7.3	7.6	4.4	24.7	6.3
Total	48.2	49.3	62.9	44.8	53.0	57.6	34.7	105.4	51.2
Suicide and self-inflicted injuries	13.8	12.2	12.4	10.7	12.3	11.0	5.1	9.7	12.5
Homicide and injuries purposely inflicted by other persons	1.5	1.5	2.5	1.4	1.4	1.5	1.9	8.6	1.7
Other poisonings	0.9	1.0	—	—	—	—	—	—	0.6
Other external causes	1.4	0.9	0.1	—	0.3	—	—	2.2	0.8
Total	65.9	64.9	77.8	57.0	67.0	70.1	41.7	125.9	66.9

Source: A.B.S. *Causes of Death*, 1972.

Cause of death

TABLE 19 DEATHS FROM ISCHAEMIC HEART DISEASE—RATE PER 100,000 POPULATION—SELECTED COUNTRIES—1962 TO 1971

Country	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*
Australia	270.3	268.3	281.1	276.8	284.7	277.5	277.9	266.5	270.9	262.7
Austria	246.6	230.5	224.1	243.6	237.6	256.9	257.9	221.0	232.1	239.1
Canada	239.3	241.5	241.1	247.2	241.3	237.9	238.2	229.8	230.1	227.1
England and Wales	322.4	329.2	306.8	317.6	317.6	308.2	285.2	285.6	284.4	293.2
France	85.2	84.7	79.8	82.0	81.4	83.0	77.4	79.5	80.4	85.6
Germany, F.R.	208.9	210.5	204.3	219.7	222.1	226.1	157.1	170.5	171.5	184.3
Hong Kong	20.2	21.6	27.5	28.8	30.2	31.1	27.7	15.5	25.3	27.3
Hungary	233.1	219.2	222.0	253.7	232.0	258.7	275.0	217.6	227.8	236.6
Ireland	323.7	312.8	299.6	310.2	326.1	294.1	249.6	270.3	263.9	257.6
Italy	203.7	205.4	191.1	204.8	191.4	199.6	126.6	133.0	134.0	137.6
Japan	53.8	51.6	52.3	57.8	55.6	59.1	35.3	36.8	37.6	36.4
Mexico	14.9	16.4	17.1	17.7	18.8	18.8	18.9	18.9	21.1	18.8
Netherlands	185.0	189.2	182.1	188.5	184.5	186.3	190.2	171.6	181.5	182.0
Norway	237.3	263.5	256.5	248.4	260.5	263.3	266.2	264.4	262.9	266.8
Poland	69.0	73.1	80.6	83.2	86.1	92.1	95.6	44.2	57.8	62.7
Romania	95.6	97.4	117.8	140.7	132.3	144.1	139.0	68.3	72.7	76.0
Singapore	(a)	27.4	32.4	33.7	35.9	34.4	38.6	42.0	39.7	44.3
Sweden	302.2	298.0	306.7	313.2	310.8	319.9	330.4	314.2	333.6	365.3
United States	313.3	319.7	312.9	316.0	320.0	316.3	337.6	331.7	326.2	326.7
Yugoslavia	127.7	116.3	129.9	121.4	113.7	128.6	45.9	56.0	53.5	(a)

(a) Not available.
Source: W.H.O. *Statistical Annual*, Volume 1, 1970.
W.H.O. *Statistical Report*, Volume 26, Number 1, 1973.

Cause of death

TABLE 20 DEATHS FROM MALIGNANT NEOPLASMS—RATE PER 100,000 POPULATION—SELECTED COUNTRIES—1962 TO 1971

Country	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*
Australia	131.4	134.9	135.8	132.8	136.1	136.9	142.4	141.3	144.6	143.5
Austria	250.8	256.4	256.7	261.6	261.3	262.3	263.1	257.8	262.1	260.1
Canada	132.0	132.7	133.3	133.1	134.1	137.3	137.9	140.7	142.6	(a)
England and Wales	217.5	217.8	220.9	222.6	225.4	227.9	231.6	234.9	236.2	239.5
France	199.5	203.2	203.7	203.6	206.6	207.3	211.9	211.1	207.4	(a)
Germany, F.R.	216.7	221.4	224.6	228.3	230.1	230.3	235.3	234.0	232.7	(a)
Hong Kong	73.0	75.1	79.0	85.4	87.0	88.2	91.3	99.8	100.1	(a)
Hungary	177.3	178.2	185.7	191.4	197.2	201.7	204.1	209.6	215.5	224.6
Ireland	173.4	173.8	174.2	173.3	179.4	175.8	181.8	189.5	188.3	187.7
Italy	152.7	155.9	158.6	162.0	164.1	165.6	170.9	177.1	179.1	182.2
Japan	103.2	105.5	107.3	108.4	110.9	112.3	113.9	116.2	115.7	(a)
Mexico	35.4	36.8	37.7	36.2	35.6	34.4	33.7	35.0	38.2	(a)
Netherlands	172.2	178.0	182.4	183.0	186.8	190.7	197.5	195.5	194.6	194.7
Norway	164.9	172.0	168.5	172.0	172.2	175.8	187.0	187.5	186.1	(a)
Poland	103.8	112.4	119.3	123.7	125.4	128.6	133.0	135.2	137.7	143.6
Romania	122.4	120.1	121.2	121.0	118.2	117.0	120.4	122.1	119.9	(a)
Singapore	(a)	74.0	73.2	74.3	70.8	77.3	76.5	76.0	76.9	(a)
Sweden	190.9	191.0	191.4	187.6	189.8	191.7	195.3	203.0	203.2	(a)
United States	149.9	151.4	151.3	153.5	155.1	157.2	159.4	160.0	161.8	(a)
Yugoslavia	79.8	81.0	83.3	83.5	86.5	90.2	92.0	94.9	98.3	(a)

(a) Not available.
Source: W.H.O. *Statistical Annual*, Volume 1, 1970.
W.H.O. *Statistical Report*, Volume 26, Number 1, 1973.

Cause of death

TABLE 21 DEATHS FROM CEREBROVASCULAR DISEASE—RATE PER 100,000 POPULATION—SELECTED COUNTRIES—1962 TO 1971

Country	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*
Australia	113.8	114.9	117.5	119.8	120.0	114.5	127.8	119.2	125.2	123.1
Austria	184.8	179.1	169.7	187.1	178.4	188.8	189.9	198.4	199.4	198.4
Canada	82.4	81.6	78.1	80.1	78.2	75.7	74.8	74.3	73.7	74.5
England and Wales	167.6	170.8	156.0	163.6	164.3	159.7	165.4	163.3	161.9	163.7
France	139.7	139.2	128.9	132.3	128.3	129.6	144.0	152.2	146.3	149.4
Germany, F.R.	176.0	178.3	173.9	182.5	182.2	175.2	179.2	179.1	173.4	176.8
Hong Kong	43.9	45.3	46.5	50.8	49.0	49.8	45.9	47.1	45.8	48.0
Hungary	150.3	136.5	141.5	165.6	156.7	158.9	164.4	169.1	169.2	170.4
Ireland	142.6	148.5	137.9	151.0	150.4	144.0	152.7	162.3	155.8	153.2
Italy	135.5	134.1	129.1	136.3	131.5	131.4	133.6	132.0	131.9	134.1
Japan	169.4	171.4	171.7	175.8	173.8	172.0	172.5	174.4	174.9	169.6
Mexico	21.6	21.9	23.0	22.2	22.2	22.2	24.5	22.9	24.7	24.8
Netherlands	99.2	97.3	93.3	98.7	98.9	94.6	101.5	94.0	97.2	91.9
Norway	153.3	156.3	148.9	153.8	153.6	153.5	154.8	158.5	157.4	152.5
Poland	45.4	35.9	29.9	31.7	31.3	32.9	33.7	35.0	37.8	42.0
Romania	113.5	116.4	114.5	125.4	122.3	126.6	129.3	135.1	130.8	129.9
Singapore	(a)	36.1	35.5	37.6	40.0	44.3	30.6	42.8	50.2	52.3
Sweden	131.4	128.1	120.9	120.9	117.9	116.9	116.3	109.3	105.5	111.6
United States	106.3	106.7	103.6	103.7	104.6	102.2	105.8	102.6	101.7	100.6
Yugoslavia	63.1	60.8	65.8	69.4	68.9	73.2	75.3	79.4	77.2	(a)

(a) Not available.
Source: W.H.O. *Statistical Annual*, Volume 1, 1970.
W.H.O. *Statistical Report*, Volume 26, Number 1, 1973.

Cause of death

TABLE 22 DEATHS FROM TUBERCULOSIS OF THE RESPIRATORY SYSTEM—RATE PER 100,000 POPULATION—SELECTED COUNTRIES—1962 TO 1971

Country	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*
Australia	4.2	3.8	3.5	2.4	2.6	2.1	1.5	1.2	1.0	0.9
Austria	20.7	20.2	18.0	18.0	15.4	15.6	13.2	12.0	11.2	10.9
Canada	3.7	3.6	3.1	3.2	3.0	3.0	2.7	1.8	1.7	1.4
England and Wales	5.9	5.5	4.7	4.2	4.3	3.7	3.0	2.2	1.9	1.9
France	17.4	16.4	14.0	13.2	12.0	11.7	9.5	8.8	7.1	6.4
Germany, F.R.	13.0	13.5	11.8	12.0	11.2	10.0	9.2	8.0	6.8	5.9
Hong Kong	48.5	43.4	34.3	30.4	37.3	36.1	34.5	35.8	34.8	29.0
Hungary	28.7	24.5	24.6	23.9	21.3	22.3	20.6	18.4	16.7	14.9
Ireland	13.7	13.7	12.9	10.5	10.7	7.3	9.1	7.7	6.8	5.6
Italy	14.1	13.2	12.1	11.9	10.2	8.7	7.7	7.3	6.1	6.1
Japan	27.1	22.5	22.1	21.4	19.1	16.6	15.8	15.3	14.6	14.6
Mexico	22.5	21.9	20.8	19.8	19.4	18.2	16.9	16.6	17.6	15.7
Netherlands	2.1	1.8	1.5	1.4	1.2	1.1	1.2	0.8	0.8	0.9
Norway	4.6	3.8	3.6	3.3	3.2	3.0	3.0	0.9	0.6	(a)
Poland	39.3	38.4	38.5	36.0	32.4	30.7	27.0	27.0	24.7	23.4
Romania	30.9	25.8	(a)	22.1	20.5	20.9	19.8	19.1	16.9	(a)
Singapore	36.1	36.4	37.6	33.3	29.0	27.0	23.8	20.0	21.6	(a)
Sweden	5.0	5.2	4.5	4.2	3.8	4.0	4.2	3.2	3.1	3.0
United States	4.7	4.6	4.0	3.8	3.6	3.2	2.5	2.2	(a)	1.6
Yugoslavia	41.7	32.0	29.6	23.8	19.4	18.6	18.7	17.6	16.5	(a)

(a) Not available.
Source: W.H.O. *Statistical Report*, Volume 25, Number 1, 1972.
W.H.O. *Statistical Report*, Volume 26, Number 1, 1973.

Tobacco and alcohol

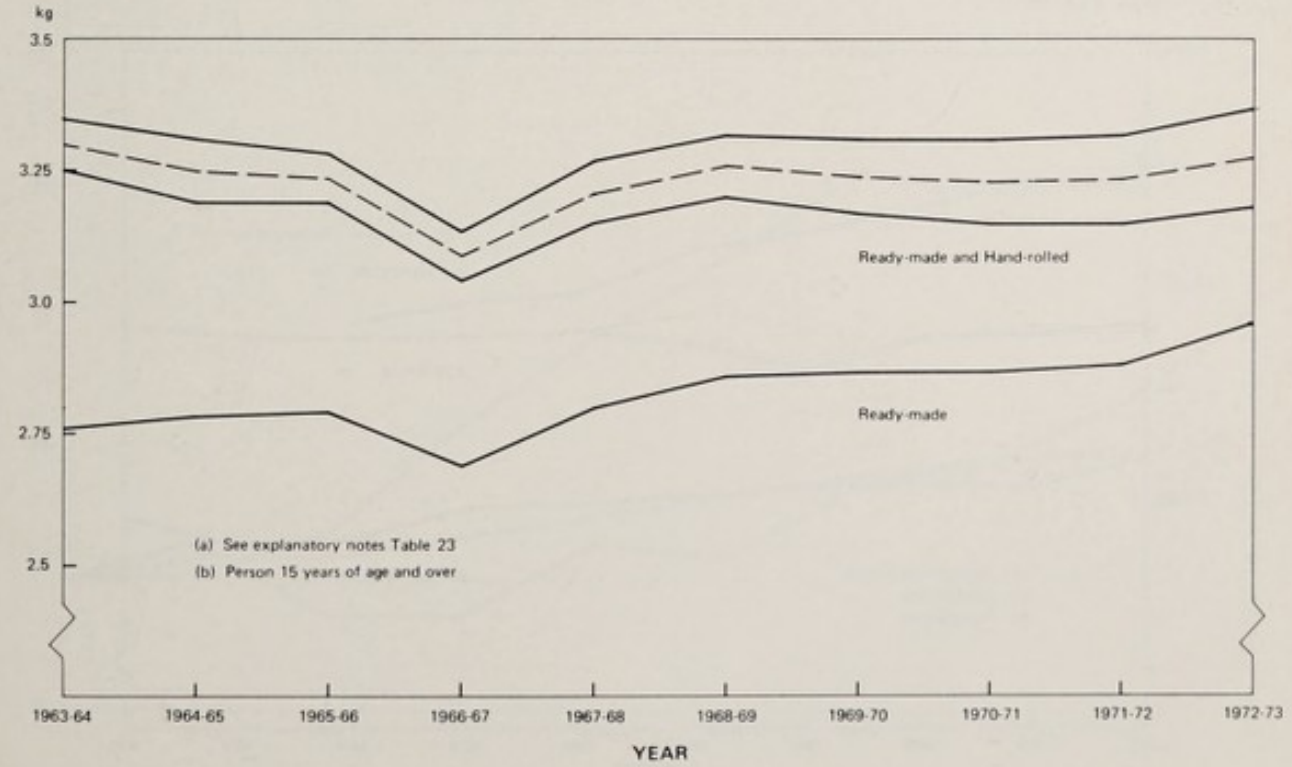
TABLE 23 TOBACCO—ESTIMATED APPARENT CONSUMPTION OF READY-MADE AND HAND-ROLLED CIGARETTES PER ADULT (a)—1963-64 TO 1972-73

Year ended 30 June	*Ready-made*		*Hand-rolled (b) (kg)*		*Total (kg)*	
	kg	*Index*	*Lower limit*	*Upper limit*	*Lower limit*	*Upper limit*
1964	2.76	100.0	0.49	0.59	3.25	3.35
1965	2.78	100.7	0.41	0.53	3.19	3.31
1966	2.79	101.1	0.40	0.49	3.19	3.28
1967	2.68	97.1	0.36	0.45	3.04	3.13
1968	2.80	101.4	0.35	0.47	3.15	3.27
1969	2.86	103.6	0.34	0.46	3.20	3.32
1970	2.87	104.0	0.30	0.44	3.17	3.31
1971	2.87	104.0	0.28	0.44	3.15	3.31
1972	2.88	104.3	0.27	0.44	3.15	3.32
1973	2.96	107.2	0.22	0.41	3.18	3.37

(a) An adult is defined as a person 15 years of age and over.
(b) Import and export statistics do not separate tobacco suitable for hand-rolled cigarettes from other cut tobacco used in pipes. An upper limit of the net imports of tobacco for hand-rolled cigarettes can be derived by assuming all imports are of tobacco for hand-rolled cigarettes and all exports are of pipe tobacco. A lower limit can be derived by reversing these assumptions. These limits are then added to the amount of manufactured tobacco suitable for hand-rolled cigarettes manufactured in Australia.
Note: kg = kilogram.

Tobacco and alcohol

GRAPH 8 TOBACCO—APPARENT CONSUMPTION OF READY-MADE CIGARETTES AND ESTIMATES OF UPPER AND LOWER LIMITS (a) OF TOBACCO USED IN BOTH READY-MADE AND HAND-ROLLED CIGARETTES CONSUMED IN AUSTRALIA PER ADULT (b)—1963-64 TO 1972-73



Tobacco and alcohol

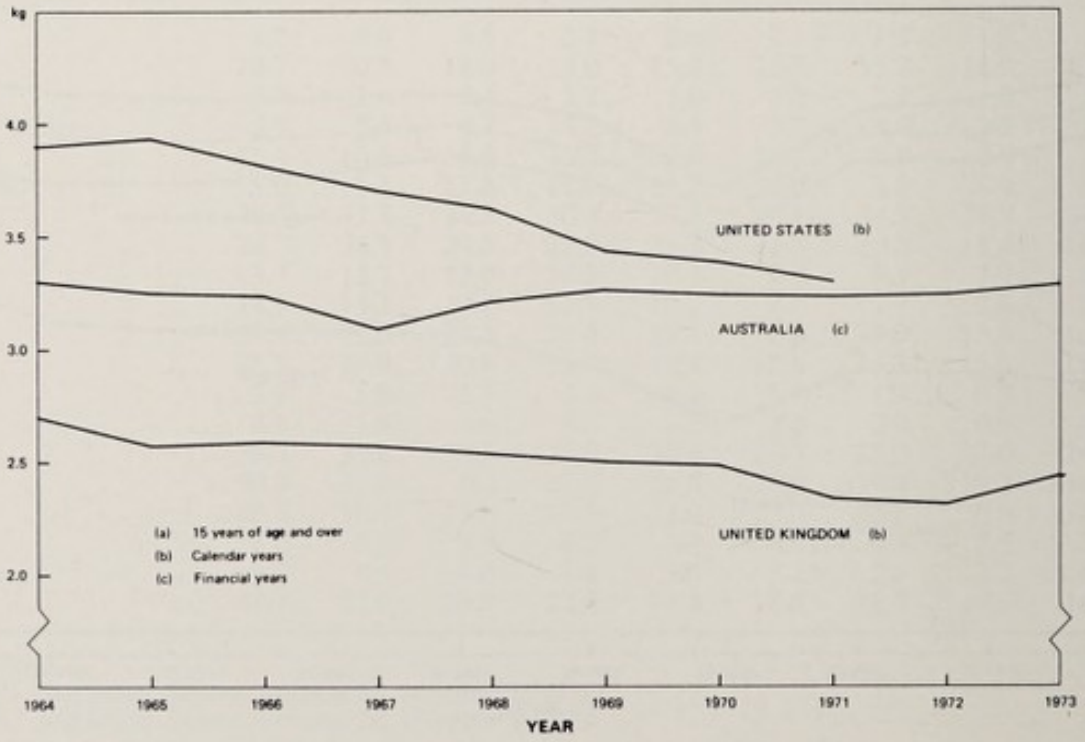
TABLE 24 TOBACCO—ESTIMATES OF APPARENT AVERAGE ANNUAL CONSUMPTION OF CIGARETTE TOBACCO FOR BOTH READY-MADE AND HAND-ROLLED CIGARETTES PER ADULT (a) —1964 TO 1973

	Australia		*United States*		*United Kingdom*	
Year (b)	*kg*	*Index*	*kg*	*Index*	*kg*	*Index*
1964	3.30	100.0	3.90	100.0	2.70	100.0
1965	3.25	98.5	3.93	100.8	2.57	95.2
1966	3.24	98.2	3.81	97.7	2.59	95.9
1967	3.09	93.6	3.70	94.9	2.57	95.2
1968	3.21	97.3	3.62	92.8	2.54	94.1
1969	3.26	98.8	3.43	87.9	2.50	92.6
1970	3.24	98.2	3.38	86.7	2.48	91.9
1971	3.23	97.9	3.30	84.6	2.34	86.7
1972	3.24	98.2	(c)	(c)	2.31	85.6
1973	3.28	99.4	(c)	(c)	2.44	90.4

(a) An adult is defined as a person 15 years of age and over.
(b) Australian figures relate to financial years. Statistics for the United States and United Kingdom refer to calendar years.
(c) Not available.
Note: kg = kilogram.
Source: United Kingdom: *Statistics of Smoking in the United Kingdom*, Tobacco Research Council.
United States: Data for ready-made cigarettes has been obtained from *Tobacco Consumption in Various Countries*, Tobacco Research Council. An estimate of the tobacco used in hand-rolled cigarettes has been made which, while subject to some error, would be an insignificant percentage of the total cigarette tobacco consumed.
Australia: A mid-point of the limits derived in Table 23 has been used.

Tobacco and alcohol

GRAPH 9 TOBACCO—ESTIMATES OF APPARENT AVERAGE ANNUAL CONSUMPTION OF CIGARETTE TOBACCO FOR BOTH READY-MADE AND HAND-ROLLED CIGARETTES PER ADULT (a)—1964 TO 1973



Tobacco and alcohol

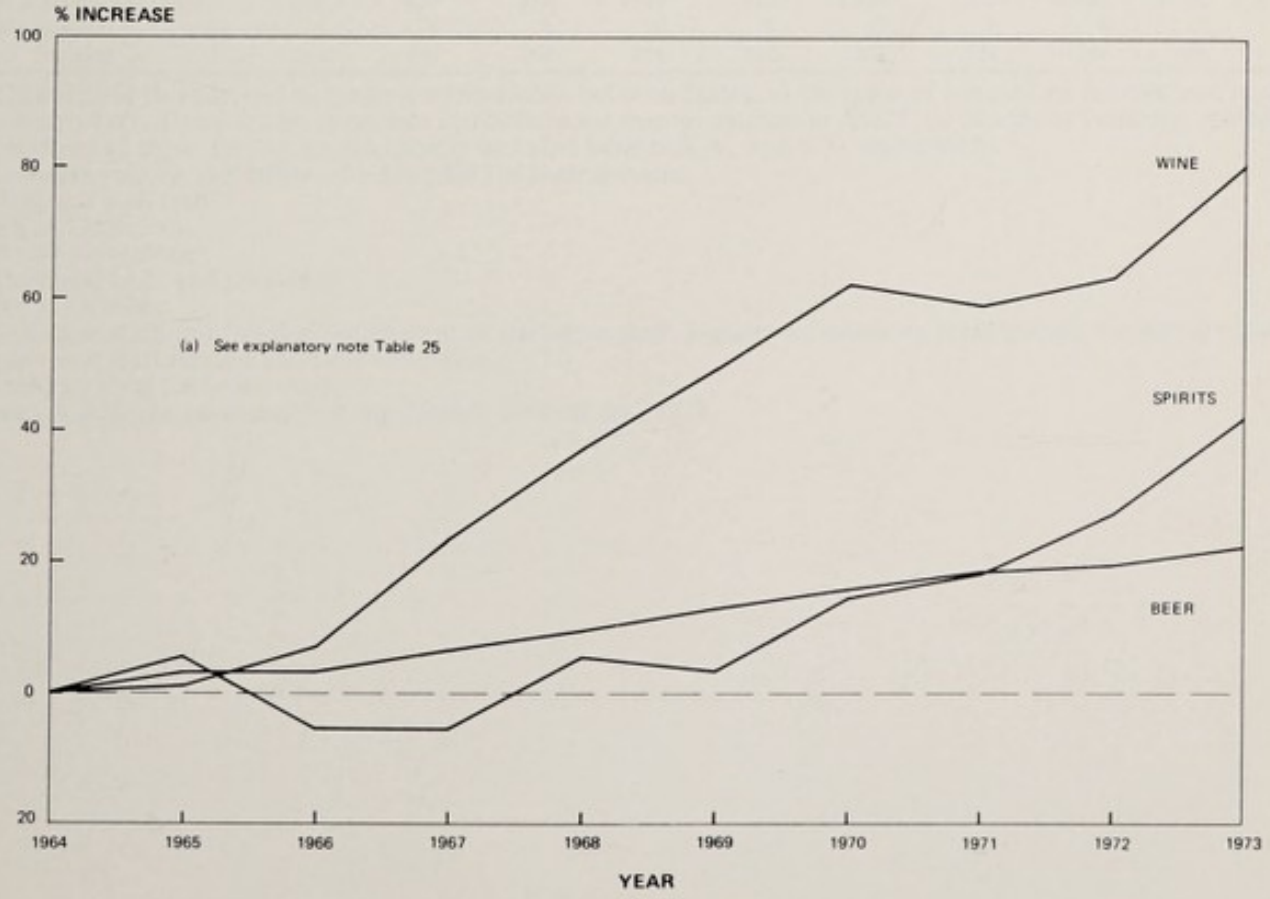
TABLE 25 ALCOHOL—APPARENT CONSUMPTION OF ALCOHOLIC BEVERAGES—1963-64 TO 1972-73

Year ended 30 June	Total consumption			Apparent consumption per head of population		
	Beer ('000 litres)	Wine (a) ('000 litres)	Spirits ('000 litres alcohol)	Beer (litres)	Wine (a) (litres)	Spirits (litres alcohol)
1964	1,178,497	60,931	9,633	106.56	5.51	0.88
1965	1,239,296	62,941	10,564	109.88	5.58	0.93
1966	1,266,218	69,601	9,570	110.10	5.59	0.83
1967	1,323,499	79,616	9,692	113.11	6.80	0.83
1968	1,391,972	90,117	11,073	116.88	7.57	0.93
1969	1,462,731	100,182	11,169	120.45	8.25	0.91
1970	1,532,328	110,856	12,657	123.54	8.94	1.01
1971	1,601,069	111,111	13,124	126.49	8.77	1.04
1972	1,640,925	116,284	14,253	127.24	9.02	1.12
1973	1,702,443	130,015	16,378	130.13	9.94	1.25

(a) Part of the apparent increase in consumption could be due to increased stocks of wine held for maturing.
Source: A.B.S. *Apparent Consumption of Foodstuffs and Nutrients.*

Tobacco and alcohol

GRAPH 10 ALCOHOL—PERCENTAGE INCREASE IN APPARENT CONSUMPTION OF BEER, WINE AND SPIRITS PER HEAD OF POPULATION (a)—1964 TO 1973



Tobacco and alcohol

TABLE 26 TOBACCO AND ALCOHOL—PERSONAL CONSUMPTION EXPENDITURE AND PERCENTAGE OF ALCOHOL AND TOBACCO EXPENDITURE TO TOTAL CONSUMPTION EXPENDITURE—1968-69 TO 1972-73

	Total expenditure ($ *Million*)					*Average expenditure per head of population*($)				
	1968-69	*1969-70*	*1970-71*	*1971-72*	*1972-73*	*1968-69*	*1969-70*	*1970-71*	*1971-72*	*1972-73*
Alcoholic drinks	1,076	1,183	1,305	1,416	1,550	88.60	95.37	103.18	109.80	118.47
Cigarettes & tobacco	492	510	556	605	654	40.51	41.11	43.93	46.91	50.00
Food	3,342	3,570	3,819	4,101	4,528	275.20	287.81	301.72	318.00	346.10
Rent	1,981	2,226	2,544	2,863	3,206	163.13	179.46	200.99	222.00	245.05
Household durables	1,202	1,314	1,429	1,569	1,783	98.98	105.93	112.90	121.66	136.28
Travel & communication	2,351	2,617	2,920	3,247	3,613	193.59	210.98	230.69	251.78	276.16
Clothing	1,553	1,659	1,793	1,928	2,142	127.88	133.75	141.66	149.50	163.72
Other	4,225	4,713	5,174	5,851	6,575	347.91	379.95	408.77	453.70	502.56
Total	16,220	17,791	19,540	21,579	24,052	1,335.64	1,434.28	1,543.75	1,673.27	1,838.40
Alcohol as % of total	6.63	6.65	6.68	6.56	6.44					
Tobacco as % of total	3.03	2.87	2.85	2.80	2.72					

Source: A.B.S. *Australian National Accounts*, 1972-73 Preliminary Statement No. 1.

Mental health

TABLE 27 NUMBER OF IN-PATIENT INSTITUTIONS, ACCOMMODATION AND STAFF—STATES (a) —1962-63 TO 1971-72

	At 30 June									
States	*1963*	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*	*1972*
New South Wales										
In-patient institutions	15	15	16	16	16	17	17	17	19	20
Beds and cots for patients	13,234	13,130	12,885	12,381	12,008	11,522	10,963	10,306	9,929	9,723
Staff—Medical	181 (b)	199 (b)	240 (b)	247 (b)	232 (b)	247 (b)	261 (b)	278 (b)	225 (c)	194 (c)
Nursing	2,764	3,137	3,244	3,423	3,362	3,540	3,530	3,600	3,827	4,137
Victoria										
In-patient institutions	23 (d)	26 (d)	26 (d)	27 (d)	29 (d)	28 (d)r	28 (d)	30 (e)	32 (e)	36 (e)
Beds and cots for patients (f)	9,420 (d)	9,586 (g)	9,695 (g)	9,470 (g)	9,434 (g)	9,249 (g)	9,102 (g)	9,127 (e)	8,858 (e)	8,712 (e)
Staff—Medical	134 (d)	143 (d)	136 (d)	145 (d)	145 (d)	150 (d)	156 (d)	164 (e)	166 (e)	149 (e)
Nursing	2,760 (d)	2,700 (d)	2,788 (d)	2,866 (d)	2,903 (d)	3,016 (d)	2,969 (d)	3,029 (e)	3,069 (e)	3,209 (e)
Queensland										
In-patient institutions	5	5	5	5	5	5	7	9	9	10
Beds and cots for patients	4,308	4,322	4,333	4,165	4,230	3,890	3,577	3,919	3,919	3,760
Staff—Medical	18	20	19	21	32	31	33	34	27 (h)	27 (h)
Nursing	1,172	1,218	1,198	1,204	1,208	1,232	1,351	1,402	1,439	1,419
South Australia										
In-patient institutions	4	4	4	4	4	4	5	5	6	6
Beds and cots for patients	2,756	2,636	2,523	2,434	2,313	2,230	2,122	2,086	2,161	2,144
Staff—Medical	24	28	32	30	27	27	37	39	51	48
Nursing	600	652	668	686	718	701	735	728	701	858
Western Australia										
In-patient institutions	6 (d)	6	6	6	5	5	5	5	5	5
Beds and cots for patients	1,926 (d)	1,923	1,921	1,921	1,683	1,519	1,514	1,539	1,538	1,494
Staff—Medical	16 (d)	17	17	15	15	19	19	27	23	27 (i)
Nursing	440 (d)	478	470	479	499	584	575	617	682	827
Tasmania										
In-patient institutions	1	1	2	1	1	1	1	1	1	1
Beds and cots for patients	850	850	930	930	950	1,030	1,030	1,030	1,030	1,028
Staff—Medical	5	6	8	10	9	10	6	8	10	11
Nursing	212	236	263	284	292	331	321	344	360	377

(a) Care should be exercised in making comparisons between States, as the types of institutions covered and recording systems vary. There are no in-patient institutions for mental patients in A.C.T. or Northern Territory. Accordingly residents of these Territories are usually included with N.S.W. and S.A. respectively.
(b) Includes visiting specialists who are paid for their services.
(c) Resident staff only.
(d) At 31 December.
(e) At 30 November.
(f) Occupied beds and cots only.
(g) At 31 October.
(h) Full-time staff and full-time equivalent of part-time staff. Figures for previous years include the actual number of part-time staff not the full-time equivalent.
(i) Includes total part-time staff.

Source: A.B.S. *Hospitals and Nursing Homes*, 1963-67 and 1972.

Mental health

TABLE 28 STATE GOVERNMENT EXPENDITURE—STATES—1962-63 TO 1971-72
($'000)

States	*1962-63*	*1963-64*	*1964-65*	*1965-66*	*1966-67*	*1967-68*	*1968-69*	*1969-70*	*1970-71*	*1971-72*
New South Wales:										
Maintenance .	15,616	17,755	17,586	18,849	22,827	25,351	23,608	29,634	33,270	38,011
Capital . .	4,310	3,758	4,695	5,151	6,652	6,256	3,851	4,564	2,828	2,650
Victoria:										
Maintenance .	15,702	15,923	15,721	17,286	20,739	22,029	23,727	26,068	29,610	34,862
Capital . .	1,980	3,522	4,384	4,700	3,577	4,144	2,400	1,893	1,596	1,656
Queensland:										
Maintenance .	5,224	5,388	5,287	5,917	6,494	6,785	7,507	8,453	10,315	12,214
Capital . .	334	158	242	439	863	587	645	1,203	928	2,338
South Australia:										
Maintenance .	2,818	3,405	4,062	4,081	4,620	5,067	5,873	6,201	7,946	8,043
Capital . .	264	349	500	726	578	190	865	2,598	1,818	492
Western Australia:										
Maintenance .	2,702	2,858	2,956	3,545	3,472	3,177	4,409	5,134	7,445	9,412
Capital . .	478	1,043	863	1,013	781	445	751	482	790	908
Tasmania:										
Maintenance .	1,148	1,252	1,372	1,689	1,902	2,167	2,348	2,524	2,941	3,230
Capital . .	164	732	666	1,586	2,469	1,075	798	215	438	370
Total:										
Maintenance .	43,210	46,582	46,984	51,367	60,054	64,576	67,472	78,014	91,527	105,772
Capital .	7,530	9,562	11,350	13,615	14,920	12,697	9,310	10,957	8,398	8,414

Source: A.B.S. *Official Year Books*, 1965 to 1972.
A.B.S. *Hospitals and Nursing Homes*, 1971 and 1972.

Mental health

TABLE 29 IN-PATIENTS AT MENTAL HEALTH INSTITUTIONS—STATES (a)—1971-72

	N.S.W.	*Vic (b)*	*Qld.*	*S.A.*	*W.A.*	*Tas.*
Total in-patients at 1 July 1971	9,939	10,169	3,901	2,193	2,503	940
Total admissions and re-admissions during year .	18,638	12,428	3,384	3,602	3,031	972
TOTAL IN-PATIENTS (CASES)						
Number treated during year . . .	28,577	22,597	7,285	5,795	5,534	1,912
Rate per 100,000 population . . .	*613*	*637*	*390*	*488*	*525*	*488*
Total discharges including deaths . . .	19,300	12,639	3,639	3,636	2,754	988
TOTAL IN-PATIENTS						
Number resident at 30 June 1972 . .	9,277	9,958	3,646	2,159	2,780	924
Rate per 100,000 population . . .	*199*	*281*	*195*	*182*	*264*	*236*

(a) See footnote (a) Table 27.
(b) 12 months ended 30 November 1972.
Source: A.B.S. *Hospitals and Nursing Homes*, 1972.

QUARANTINE

General

TABLE 30 VESSELS BOARDED AND CLEARED—1964-65 TO 1973-74

Year ended 30 June	Surface			Air		
	Vessels	Crew	Passengers	Vessels	Crew	Passengers
1965	3,359	220,229	220,355	2,936	31,566	188,033
1966	3,488	229,448	247,310	3,297	33,688	223,369
1967	4,040	240,833	238,646	3,918	39,316	262,961
1968	4,440	245,306	213,521	4,968	51,150	363,757
1969	4,813	276,853	248,852	5,896	57,936	460,773
1970	5,297	268,942	231,937	6,887	66,627	546,070
1971	6,233	302,632	183,743	8,127	86,425	633,672
1972	5,872	272,876	160,121	7,895	86,153	652,264
1973	5,975	256,232	144,042	11,879	92,289	777,812
1974	6,318	255,883	115,923	9,023	99,246	972,533

General

TABLE 31 VESSELS BOARDED AND CLEARED—STATES AND TERRITORIES—1973-74

State or Territory	Surface			Air		
	Vessels	Crew	Passengers	Vessels	Crew	Passengers
New South Wales	1,408	59,586	27,571	4,963	59,500	625,296
Victoria	485	21,341	9,825	777	9,653	109,492
Queensland	1,169	46,985	9,248	495	4,221	34,041
South Australia	235	9,951	4,652	30	351	1,059
Western Australia	2,253	97,776	63,992	1,163	12,852	110,504
Tasmania	442	11,320	27	1	6	—
Australian Capital Territory	n.a.	n.a.	n.a.	25	249	534
Northern Territory	326	8,924	608	1,569	12,414	91,607
Australia	6,318	255,883	115,923	9,023	99,246	972,533

General

TABLE 32 NUMBER OF CASES (a) OF INFECTIOUS DISEASES ON OVERSEAS VESSELS (b) ARRIVING IN AUSTRALIA—1969-70 TO 1973-74

Disease	*1969-70*	*1970-71*	*1971-72*	*1972-73*	*1973-74*
Chickenpox	89	54	33	36	37
Dysentery	1	—	—	2	3
Gastroenteritis	4	1	12	45	25
Glandular fever	—	2	2	2	2
Herpes	—	1	—	—	—
Infectious dermatitis	—	1	1	5	2
Infectious hepatitis	21	22	12	4	5
Influenza	25	5	1	13	6
Leprosy	—	1	—	15	1
Measles	410	223	44	53	24
Meningitis	1	—	—	5	—
Mumps	33	23	24	16	28
Rubella	10	9	32	2	7
Salmonella infection	—	—	—	4	3
Scarlet fever	1	—	2	—	—
Tuberculosis	—	2	2	1	3
Venereal disease	245	218	312	308	262
Total	840	562	477	511	408

(a) As notified by Quarantine Officers.
(b) Includes air and surface vessels.

General

TABLE 33 NUMBER OF PEOPLE QUARANTINED—1964-65 TO 1973-74

Year ended 30 June	*Sydney*	*Melbourne*	*Brisbane*	*Adelaide*	*Perth*	*Darwin*	*Total*
1965	17	—	—	1	1	(a)	19
1966	33	2	1	—	4	9	49
1967	57	3	6	1	4	(a)	71
1968	76	—	18	1	13	(a)	108
1969	103	—	15	—	17	9	144
1970	70	—	2	—	17	16	105
1971	121	7	6	—	24	37	195
1972	131	25	5	—	1	20	182
1973	214	20	18	—	35	48	335
1974	187	30	7	—	42	56	322

(a) Not available.

General

TABLE 34 NUMBER OF PASSENGERS VACCINATED AGAINST SMALLPOX ON ARRIVAL IN AUSTRALIA—1964-65 TO 1973-74

Year ended 30 June	*Sydney*	*Melbourne*	*Brisbane*	*Adelaide*	*Perth*	*Darwin*	*Total*
1965	1,284	1	(a)	—	160	(a)	1,445
1966	2,102	2	94	—	160	763	3,121
1967	1,860	7	120	—	189	(a)	2,176
1968	2,417	15	130	—	185	(a)	2,747
1969	2,374	21	101	—	243	779	3,518
1970	3,847	13	195	1	251	958	5,265
1971	5,021	342	249	—	494	639	6,745
1972	6,386	301	398	—	579	510	8,174
1973	3,176	165	242	—	423	653	4,659
1974	3,038	1,110	410	—	592	868	6,018

(a) Not available.

Animal

TABLE 35 NUMBER OF ANIMALS IMPORTED—1969-70 TO 1973-74

Type	*1969-70*	*1970-71*	*1971-72*	*1972-73*	*1973-74*
Animals for permanent quarantine in registered zoological gardens and circuses	587	111	252	299	131
Cats and dogs—from New Zealand	580	644	694	861	1,331
from United Kingdom	287	—	752	852	1,026
from Papua New Guinea	—	—	—	49	107
Cattle—from New Zealand	802	1,471	2,509	2,959	2,458
Horses—from New Zealand	895	964	924	1,124	1,339
from United Kingdom	98	175	170	58	504
Monkeys	404	300	—	630	548
Pigs—from New Zealand	—	9	23	16	18
Laboratory animals for scientific institutions	1,269	3,682	4,718	8,185	5,440
Goats—from New Zealand	—	—	—	—	3
Sheep—from New Zealand	—	—	—	—	159

Animal

TABLE 36 NUMBER OF ANIMALS EXPORTED—1973-74

Type	*Number*	*Type*	*Number*
Birds	12,091	Goats	10
Camels	5	Horses	824
Cats	817	Laboratory animals	1,551
Cattle	17,071	Pigs	614
Dogs	3,517	Poultry	748,713
Donkeys	51	Sheep	990,140
Fish	10,796	Zoological animals	416

Animal

TABLE 37 IMPORTATION OF CATTLE SEMEN—NUMBER OF DOSES—1973-74

Type	*Importations from*				
	Ireland	*Canada*	*New Zealand*	*United Kingdom*	*Total*
Aberdeen Angus	—	2,220	11,877	5,440	19,537
Ayrshire	—	2,838	1,950	772	5,560
Blonde d' Aquitaine	—	7,161	—	11,930	19,091
Brown Swiss	—	2,928	—	—	2,928
Canadian Holstein	—	100,552	—	16,140	116,692
Charolais	2,656	63,701	28,938	64,389	159,684
Chianina	—	65,001	—	—	65,001
Devon	—	—	—	2,227	2,227
Friesian (Holstein)	—	100	39,133	28,226	67,459
Galloway	—	—	—	502	502
Gelbvieh	—	1,072	—	—	1,072
Guernsey	—	2,500	—	7,812	10,312
Hays Converter	—	2,864	—	—	2,864
Hereford	—	3,359	5,024	23,460	31,843
Jersey	—	—	11,925	670	12,595
Limousin	—	24,393	—	19,416	43,809
Lincoln Red	—	250	—	1,950	2,200
Maine Anjou	—	32,014	—	6,085	38,099
Meuse-Rhine-Issel	—	—	—	1,200	1,200
Poll Charolais	—	200	—	—	200
Red Dane	—	—	—	50	50
Red Poll	—	—	—	87	87
Shorthorn	—	2,969	—	9,677	12,646
Simmental	7,570	74,083	11,424	83,060	176,137
South Devon	—	—	—	18,308	18,308
Sussex	—	—	—	1,450	1,450
Welsh Black	—	—	—	700	700
Total	10,226	388,205	110,271	303,551	812,253

Animal

TABLE 38 EXPORTS OF CATTLE SEMEN—NUMBER OF DOSES—1973-74

Type	*Export to*								
	Canada	*India*	*New Zealand*	*Malay-sia*	*Pakistan*	*Philip-pines*	*United States of America*	*Other*	*Total*
Aberdeen Angus	—	—	500	—	—	—	—	310	810
Australian Illawarra Shorthorn	—	—	1,498	650	—	—	8,068	—	10,216
Australian Milking Zebu	—	—	—	1,902	1,000	—	—	140	3,042
Beef Shorthorn	—	—	—	—	—	—	—	170	170
Bradford	—	—	236	100	—	—	—	—	336
Brahman	—	—	676	250	—	—	—	385	1,311
Dairy Shorthorn	—	—	512	—	—	—	—	—	512
Droughtmaster	—	—	—	—	—	—	—	20	20
Friesian (Holstein)	—	464	6,296	—	2,000	400	—	2,481	11,641
Hereford	—	—	1,100	—	—	—	—	170	1,270
Jersey	—	2,511	1,500	—	—	866	—	800	5,677
Murray Grey	1,547	—	21,490	250	—	—	—	920	24,207
Poll Hereford	—	—	6,349	108	—	—	—	500	6,957
Poll Shorthorn	500	—	730	—	—	—	—	40	1,270
Red Poll	—	—	—	—	—	—	—	—	—
Sahiwal	—	—	10	750	—	—	182	—	942
Sahiwal/Friesian	—	—	—	200	—	—	—	—	200
Santa Gertrudis	—	—	2,861	—	—	—	—	425	3,286
Tasmanian Grey	—	—	—	—	—	—	—	1,091	1,091
Total	2,047	2,975	43,758	4,210	3,000	1,266	8,250	7,452	72,958

Note: The figures in tables 39, 41 and 42 are based on actual cash payments and for the years 1972-73 and 1973-74 include amounts of $703,000 and $2,654,000 respectively which were paid in those years but relate to prescriptions processed during 1971-72 and 1972-73.

Tables 43 to 50 include these payments with the years to which they relate (1971-72 and 1972-73) instead of years of payment and will not therefore agree with the totals of tables 39, 41 and 42.

Pharmaceutical benefits

TABLE 39 COST OF PHARMACEUTICAL BENEFITS—1964-65 TO 1973-74
($'000)

Year ended 30 June	Australian Government payments			Patients' contributions on general benefit prescriptions	Total cost of benefit prescriptions	Australian Government payments to public hospitals and through miscellaneous services	Total cost of pharmaceutical benefits	Total Australian Government payments
	Benefit prescriptions							
	General (a)	Pensioner (b)	Total					
1965 . .	48,930	21,564	70,494	16,841	87,336	11,708	99,044	82,203
1966 . .	53,078	24,071	77,149	17,481	94,630	14,635	109,265	91,784
1967 . .	56,656	29,280	85,936	18,347	104,283	15,344	119,628	101,281
1968 . .	56,800	32,115	88,915	18,504	107,420	16,219	123,639	105,134
1969 . .	64,025	36,609	100,634	20,129	120,764	17,739	138,503	118,373
1970 . .	73,228	41,069	114,297	21,942	136,238	22,422	158,660	136,718
1971 . .	88,176	45,181	133,357	24,384	157,741	26,918	184,659	160,275
1972 . .	90,062	52,005	142,067	35,467	177,534	31,201	208,735	173,268
1973 . .	87,431	58,139	145,571	48,640	194,211	32,062	226,273	177,633
1974 . .	108,066	66,803	174,869	59,015	233,885	43,427	277,311	218,296

(a) Benefit prescriptions supplied to persons other than those eligible to receive pensioner pharmaceutical benefits.
(b) Benefit prescriptions supplied to persons eligible to receive pensioner benefits.

Pharmaceutical benefits

TABLE 40 NUMBER OF PHARMACEUTICAL CHEMISTS AND MEDICAL PRACTITIONERS DISPENSING PHARMACEUTICAL BENEFITS PRESCRIPTIONS—STATES AND TERRITORIES—1964-65 TO 1973-74

A. *Pharmaceutical Chemists* approved under Section 90 of the *National Health Act* 1953-1973 for the purpose of supplying pharmaceutical benefits.

B. *Medical Practitioners* approved under Section 92 of the *National Health Act* 1953-1973 for the purpose of supplying pharmaceutical benefits in areas in which there are no other pharmaceutical services available.

At 30 June	New South Wales (a)		Victoria		Queensland		South Australia (a)		Western Australia		Tasmania		Australian Capital Territory (a)		Northern Territory (a)		Australia	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
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
1968	2,228	30	1,602	3	843	5	527	9	382	5	146	14	—	—	—	—	5,728	66
1969	2,254	32	1,616	5	866	4	536	7	387	5	147	13	—	—	—	—	5,806	66
1970	2,268	31	1,628	5	893	6	539	6	398	5	150	14	—	—	—	—	5,876	67
1971	2,277	31	1,633	4	909	6	534	6	406	4	153	14	—	—	—	—	5,912	65
1972	2,257	33	1,617	2	922	5	534	5	410	5	151	15	—	—	—	—	5,891	65
1973	2,154	29	1,587	1	920	6	510	6	408	6	148	15	69	—	21	—	5,817	63
1974	2,102	29	1,573	2	897	6	522	6	408	4	146	14	71	—	20	—	5,739	61

(a) Prior to 1973, figures for Australian Capital Territory are included in New South Wales and Northern Territory in South Australia.

Pharmaceutical benefits

TABLE 41 PAYMENTS TO PUBLIC HOSPITALS AND THROUGH MISCELLANEOUS SERVICES—STATES AND TERRITORIES—1964-65 TO 1973-74

($'000)

Year ended 30 June	Payments to public hospitals: New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Australian Capital Territory (a)	Northern Territory (b)	Miscellaneous	Total
1965	3,039	4,396	2,114	738	764	414	—	—	243	11,708
1966	6,692	4,000	1,613	607	700	713	—	—	309	14,635
1967	5,233	5,000	2,041	1,110	1,100	538	—	—	322	15,344
1968	6,222	4,103	2,198	1,416	1,286	602	—	—	392	16,219
1969	6,586	4,160	2,655	1,403	1,803	706	—	—	427	17,739
1970	8,038	6,000	3,195	1,828	2,133	739	—	—	489	22,422
1971	9,194	7,229	4,097	2,153	2,679	919	—	—	646	26,918
1972	10,920	8,874	4,618	2,150	3,065	796	—	—	778	31,201
1973	11,600	6,218	5,324	2,714	3,751	995	255	251	955	32,062
1974	14,387	12,047	6,295	3,334	4,406	1,157	326	349	1,126 (c)	43,427

(a) Prior to 1973 figures for Australian Capital Territory are included in New South Wales.

(b) Prior to 1973 figures for Northern Territory are not included in this table. Related costs were charged to Northern Territory expenditure as Medical Supplies.

(c) In 1973-74 miscellaneous services expenditure consisted of:—

	$'000
Biological products and prophylactic materials	589
Australian Government Medical Officers and Immigration Medical Services	64
Royal Flying Doctor Service	67
Bush Nursing Organisations	98
Special Issues for Research	91
Colostomy and Ileostomy Association	216
Total	1,126

Pharmaceutical benefits

TABLE 42 COST OF BENEFIT PRESCRIPTIONS—STATES AND TERRITORIES—1973-74
($'000)

State or Territory	Australian Government payments (a) — Benefit prescriptions — General	Pensioner	Total	Patients' contributions on general benefit prescriptions	Total cost of benefit prescriptions
New South Wales	41,361	26,956	68,317	22,083	90,400
Victoria	30,532	16,212	46,744	16,665	63,409
Queensland	15,431	10,753	26,184	8,608	34,792
South Australia	9,055	6,264	15,319	5,037	20,356
Western Australia	7,254	4,428	11,682	4,166	15,848
Tasmania	2,700	1,924	4,624	1,534	6,158
Australian Capital Territory	1,423	237	1,660	752	2,412
Northern Territory	309	29	338	170	508
Australia	108,066	66,803	174,869	59,015	233,835

(a) Excludes payments for pharmaceutical benefits provided by public hospitals and through miscellaneous services (see footnote (c) Table 41).

Pharmaceutical benefits

TABLE 43 DISSECTION OF BENEFIT PRESCRIPTION COSTS (a) INTO INGREDIENT AND CONTAINER COST AND APPROVED SUPPLIERS' REMUNERATION—1964-65 TO 1973-74
($'000)

Year ended 30 June	Cost of ingredients and containers (b)	Suppliers' remuneration (c)	Total cost of benefit prescriptions
1965	52,139	35,197	87,336
1966	57,293	37,337	94,630
1967	63,676	40,608	104,283
1968	66,662	40,758	107,420
1969	75,314	45,450	120,764
1970	85,821	50,418	136,238
1971	99,620	58,121	157,741
1972	113,414	64,824	178,237
1973	120,529	75,633 r	196,162 r
1974	139,856	91,374	231,230

(a) Includes patients' contributions. Excludes costs in relation to pharmaceutical benefits provided by public hospitals and through miscellaneous services (see footnote (c) Table 41).
(b) Includes payments to suppliers for wastage on broken quantities of ready-prepared items.
(c) Includes mark-up on wholesale price and professional fees but does not include discount allowed to suppliers by wholesalers and manufacturers.

Pharmaceutical benefits

TABLE 44 DISSECTION OF BENEFIT PRESCRIPTION COSTS (a) INTO INGREDIENT AND CONTAINER COST AND APPROVED SUPPLIERS' REMUNERATION—STATES AND TERRITORIES—1973-74

($'000)

State or territory	*Cost of ingredients and containers (b)*	*Suppliers' remuneration (c)*	*Total cost of benefit prescriptions*
New South Wales	54,196	35,195	89,391
Victoria	38,006	24,690	62,696
Queensland	20,681	13,691	34,372
South Australia	12,110	8,012	20,122
Western Australia	9,415	6,253	15,668
Tasmania	3,670	2,418	6,088
Australian Capital Territory	1,465	923	2,388
Northern Territory	312	193	505
Australia	139,856	91,374	231,230

(a) See footnote (a) Table 43.
(b) See footnote (b) Table 43.
(c) See footnote (c) Table 43.

Pharmaceutical benefits

TABLE 45 NUMBER OF BENEFIT PRESCRIPTIONS AND AVERAGE COST PER BENEFIT PRESCRIPTION (a)—1964-65 TO 1973-74

Year ended 30 June	*Benefit prescriptions*			*Average cost per benefit prescription*		
	General	*Pensioner*	*Total*	*General*	*Pensioner*	*Total*
	'000	*'000*	*'000*	*$*	*$*	*$*
1965	33,715	13,841	47,556	1.95	1.56	1.83
1966	35,085	14,908	49,993	2.01	1.61	1.89
1967	36,751	16,936	53,687	2.04	1.73	1.94
1968	37,053	18,370	55,423	2.03	1.75	1.94
1969	40,453	19,954	60,408	2.08	1.83	2.00
1970	44,071	21,504	65,575	2.16	1.91	2.08
1971	48,971	22,515	71,487	2.30	2.01	2.21
1972	48,492	23,951	72,442	2.60	2.18	2.46
1973	49,115	25,561	74,676	2.81 r	2.31 r	2.64 r
1974	59,500	27,788	87,288	2.78	2.37	2.65

(a) See footnote (a) Table 43.

Pharmaceutical benefits

TABLE 46 NUMBER OF BENEFIT PRESCRIPTIONS AND AVERAGE COST PER BENEFIT PRESCRIPTION (a)—STATES AND TERRITORIES—1973-74

State or territory	Benefit prescriptions			Average cost per benefit prescription		
	General	Pensioner	Total	General	Pensioner	Total
	'000	'000	'000	$	$	$
New South Wales	22,276	11,225	33,501	2.82	2.37	2.67
Victoria	16,803	6,622	23,426	2.78	2.41	2.68
Queensland	8,655	4,573	13,228	2.75	2.32	2.60
South Australia	5,084	2,618	7,702	2.74	2.36	2.61
Western Australia	4,206	1,854	6,060	2.69	2.36	2.59
Tasmania	1,542	790	2,333	2.72	2.40	2.61
Australian Capital Territory	762	94	856	2.83	2.49	2.79
Northern Territory	170	11	182	2.79	2.61	2.78
Australia	59,500	27,788	87,288	2.78	2.37	2.65

(a) See footnote (a) Table 43.

Pharmaceutical benefits

TABLE 47 NUMBER OF BENEFIT PRESCRIPTIONS PER HEAD OF POPULATION AND AVERAGE COST PER HEAD OF POPULATION (a)—1964-65 TO 1973-74

Year ended 30 June	Benefit prescriptions per head of population			Average cost per head of population		
	General population (b)	Pensioner population (c)	Total population	General population (b)	Pensioner population (c)	Total population
				$	$	$
1965	3.23	16.42	4.22	6.30	25.57	7.74
1966	3.31	16.66	4.35	6.65	26.91	8.23
1967	3.44	16.59	4.59	7.02	28.68	8.91
1968	3.43	16.81	4.65	6.96	29.39	9.02
1969	3.67	17.61	4.97	7.64	32.31	9.94
1970	3.92	18.46	5.29	8.47	35.25	10.98
1971	4.28	18.69	5.65	9.83	37.50	12.46
1972	4.16	19.40	5.62	10.81	42.33	13.82
1973	4.16	19.74	5.71	11.65 r	45.41 r	14.98 r
1974	5.00	20.99	6.60	13.89	49.77	17.48

(a) See footnote (a) Table 43.
(b) Population excluding persons eligible to receive pensioner pharmaceutical benefits.
(c) Population of persons eligible to receive pensioner pharmaceutical benefits.

Pharmaceutical benefits

TABLE 48 NUMBER OF BENEFIT PRESCRIPTIONS PER HEAD OF POPULATION AND AVERAGE COST PER HEAD OF POPULATION (a)—STATES AND TERRITORIES—1973-74

State or territory	*Benefit prescriptions per head of population*			*Average cost per head of population*		
	General population (b)	*Pensioner population (c)*	*Total population*	*General population (b)*	*Pensioner population (c)*	*Total population*
				$	$	$
New South Wales	5.25	22.94	7.08	14.80	54.36	18.89
Victoria	5.15	19.19	6.49	14.30	46.35	17.37
Queensland	5.03	21.67	6.85	13.82	50.22	17.79
South Australia	4.70	20.74	6.38	12.90	48.93	16.67
Western Australia	4.29	18.92	5.62	11.52	44.59	14.52
Tasmania	4.37	17.56	5.86	11.87	42.19	15.30
Australian Capital Territory	4.50	19.77	4.92	12.73	49.16	13.73
Northern Territory	1.83	2.37	1.85	5.10	6.20	5.15
Australia	5.00	20.99	6.60	13.89	49.77	17.48

(a) See footnote (a) Table 43.
(b) See footnote (b) Table 47.
(c) See footnote (c) Table 47.

Pharmaceutical benefits

TABLE 49 RESTRICTED AND UNRESTRICTED DRUGS—COST, PRESCRIPTION VOLUME AND AVERAGE COST PER PRESCRIPTION (a)—1973-74

	Benefit prescriptions		*Total cost of benefit prescriptions*		*Average cost per benefit prescription*
	Number	*Percentage of total*	*Amount*	*Percentage of total*	
	'000	*%*	*$'000*	*%*	*$*
TYPE OF RESTRICTION:					
Authority required	1,136	*1.30*	9,624	*4.16*	8.47
Authority not required—purpose specified	10,961	*12.56*	42,993	*18.59*	3.92
Available as a pensioner benefit only	1,721	*1.97*	2,533	*1.10*	1.47
For use in approved private hospitals only	1	*0.00*	8	*0.00*	17.73
UNRESTRICTED BENEFITS	73,469	*84.17*	176,072	*76.15*	2.40
Total	87,288	*100.00*	231,230	*100.00*	2.65

(a) See footnote (a) Table 43.

Pharmaceutical benefits

TABLE 50 NUMBER OF BENEFIT PRESCRIPTIONS AND COST OF MORE FREQUENTLY PRESCRIBED DRUG GROUPS (a)—1973-74

Drug groups	*Benefit prescriptions*		*Total cost of benefit prescriptions*	
	Number	*Percentage of total*	*Amount*	*Percentage of total*
	'000	*%*	*$'000*	*%*
Analgesics	7,777	*8.91*	19,814	*8.57*
Anovulants (b)	5,244	*6.01*	11,790	*5.10*
Antacids	2,467	*2.83*	4,297	*1.86*
Anti-cholinergics	1,271	*1.46*	4,602	*1.99*
Anti-convulsants	462	*0.53*	2,079	*.90*
Anti-depressants	3,309	*3.79*	7,770	*3.36*
Anti-diabetics	737	*0.84*	4,152	*1.80*
Anti-histamines	4,391	*5.03*	9,280	*4.01*
Blood vessels—Drugs acting on	3,909	*4.48*	17,094	*7.39*
Broad spectrum antibiotics	6,492	*7.44*	20,560	*8.89*
Bronchial spasm preparations	3,221	*3.69*	12,889	*5.57*
Corticosteroids	781	*0.90*	2,304	*1.00*
Diuretics	4,744	*5.43*	16,820	*7.27*
Expectorants and cough suppressants	868	*0.99*	922	*0.40*
Eye drops	1,475	*1.69*	2,823	*1.22*
Gastro intestinal sedatives	757	*0.87*	1,788	*0.77*
Genito-urinary infections—Drugs acting on	1,552	*1.78*	*4,978*	2.15
Heart—Drugs acting on	1,861	*2.13*	7,288	*3.15*
Iron preparations	1,415	*1.62*	1,968	*0.85*
Parkinsons—Drugs used for	383	*0.44*	1,931	*0.84*
Penicillins	5,928	*6.79*	17,809	*7.70*
Sedatives and hypnotics	4,535	*5.20*	5,764	*2.49*
Sera vaccines	968	*1.11*	1,504	*0.65*
Sulphonamides	1,663	*1.91*	4,816	*2.08*
Tranquillisers	5,915	*6.78*	13,291	*5.75*
Water and electrolyte replacement	2,133	*2.44*	4,705	*2.03*
Other drug groups	13,030	*14.91*	28,194	*12.19*
Total	87,288	*100.00*	231,230	*100.00*

(a) See footnote (a) Table 43.
(b) Anovulants were included as Pharmaceutical Benefits in February 1973.

Therapeutic goods

TABLE 51 ADVERSE DRUG REACTION REPORTS—SOURCE OF REPORTS—1964 TO 1973

Year ended 31 December	Hospitals	Medical practitioners			Other (including dentists, pharmacists and pharmaceutical companies)	Total	Per cent from hospitals
		General practitioners	Specialist	Total			
	No.	No.	No.	No.	No.	No.	%
1964	38	(a)	(a)	82	—	120	31.7
1965	49	(a)	(a)	183	—	232	21.1
1966	69	(a)	(a)	253	—	322	21.4
1967	52	(a)	(a)	287	—	339	15.3
1968	133	(a)	(a)	387	16	536	24.8
1969	175	(a)	(a)	802	44	1,021	17.1
1970	396	405	241	646	66	1,108	35.7
1971	846	455	181	636	75	1,557	54.3
1972	1,102	494	224	718	97	1,917	57.5
1973	839	415	268	683	128	1,650	50.8

(a) Prior to 1970, separate figures for specialist and general practitioners are not available.

Therapeutic goods

TABLE 52 CONSUMPTION (LICIT) OF THE PRINCIPAL NARCOTIC DRUGS—1964 TO 1973

Year ended 31 December	Morphine		Codeine (a)		Ethylmorphine (a)		Cocaine		Pethidine		Methadone		Dextromoramide		Total principal narcotic drugs	
	kg	kg per million persons	kg	kg per million persons	kg	kg per million persons	kg	kg per million persons	kg	kg per million persons	kg	kg per million persons	kg	kg per million persons	kg	kg per million persons
1964	117	10.51	2,811	252.42	20	1.80	21	1.89	152	13.65	10	0.90	3	0.27	3,134	281.58
1965	99	8.71	3,221	283.54	11	0.97	18	1.58	235	20.69	21	1.85	6	0.53	3,611	317.59
1966	100	8.66	3,030	262.54	9	0.78	16	1.39	207	17.94	14	1.21	6	0.52	3,382	292.81
1967	82	6.98	3,334	283.72	10	0.85	19	1.62	236	20.08	9	0.77	8	0.68	3,698	314.72
1968	92	7.65	3,699	307.46	13	1.08	20	1.66	297	24.69	18	1.50	8	0.66	4,147	344.72
1969	58	4.72	4,136	336.37	15	1.22	13	1.06	194	15.78	8	0.65	7	0.57	4,431	360.54
1970	60	4.78	4,027	320.88	13	1.04	16	1.27	249	19.84	15	1.20	11	0.88	4,391	349.88
1971	76	5.97	3,839	301.57	11	0.86	15	1.18	244	19.17	11	0.86	10	0.79	4,206	330.40
1972	60	4.66	4,078	316.12	9	0.72	16	1.27	263	20.37	17	1.30	10	0.74	4,453	345.19
1973	62	4.73	3,471	264.96	8	0.61	18	1.37	265	20.23	23	1.76	9	0.69	3,856	294.35

(a) Includes quantities of these drugs used in the manufacture of preparations for export.
Note: kg = kilogram.

National Biological Standards Laboratory

TABLE 53 SUMMARY OF ALL SAMPLES EXAMINED—1972-73 AND 1973-74

Type	*Number examined*		*Failures*		*Percentage failures*	
	1972-73	*1973-74*	*1972-73*	*1973-74*	*1972-73*	*1973-74*
For Department of Health—						
Products on the Pharmaceutical Benefits list	883	796	91	64	10.3	8.0
Products recommended by the Pharmaceutical Benefits Advisory Committee	73	31	9	1	12.3	3.2
New brands of existing Pharmaceutical Benefits	62	75	11	7	17.7	9.3
Veterinary products—						
Viral vaccines	19	13	—	1	—	7.7
Veterinary antibiotics	16	61	9	26	56.3	42.6
Veterinary vaccines	41	60	8	12	19.5	20.0
Miscellaneous	89	13	—	3	—	23.1
For other Federal Departments (a)	135	164	16	19	11.9	11.6
Dressings	—	7	—	3	—	42.9
Medical equipment (b)	354	121	1	1	0.3	0.8
Miscellaneous drug samples (c)	92	28	26	13	28.3	46.4
Total	1,716	1,307	171	145	10.0	11.1

(a) 1973-74 figures include 62 samples examined and 5 failures also shown elsewhere. The corresponding figures for 1972-73 were 48 and Nil respectively.
(b) Number of batches tested.
(c) Samples of products about which complaints have been received, samples taken prior to granting authories to import subject to Customs (Prohibited Imports) Regulations and samples tested on behalf of other authorities.

National Biological Standards Laboratory

TABLE 54 SAMPLES EXAMINED—REASONS FOR FAILURE AS PERCENTAGE OF TOTAL FAILURES —1972-73 AND 1973-74

%

Reason	*Products for human use (a)*		*Products for veterinary use (b)*	
	1972-73	*1973-74*	*1972-73*	*1973-74*
Acidity or alkalinity	3.5	2.3	5.0	—
Container content	2.9	3.1	—	—
Disintegration	8.2	4.7	10.0	—
Dressings (various reasons other than sterility) (c)	—	3.9	—	—
Labelling	5.3	7.0	15.0	13.0
Loss on drying	4.7	—	—	—
Miscellaneous (e.g. colouring, physical appearance)	11.2	11.7	10.0	13.0
Particulate matter	5.9	11.7	—	4.3
Potency	40.6	36.7	50.0	39.3
Safety, contamination or misidentification	2.4	0.8	—	—
Sterility	1.8	3.9	10.0	30.4
Uniformity of weight	13.5	14.2	—	—
Total	100.0	100.0	100.0	100.0

(a) Includes samples which failed for two or more reasons: 1972-73, 19; 1973-74, 15.
(b) Includes samples which failed for two or more reasons: 1972-73, 3; 1973-74, 6.
(c) Depending on types of dressing up to twenty-six tests, such as absorbency, ash content, threads per inch, fluorescence, fabric construction, etc., may be applied.

National Biological Standards Laboratory

TABLE 55 NUMBER OF SAFETY TESTS PERFORMED—1972-73 AND 1973-74

Type	*Examined*		*Failed*		*Indeterminable*	
	1972-73	*1973-74*	*1972-73*	*1973-74*	*1972-73*	*1973-74*
Disposable medical equipment	491	160	27	1	25	5
Histamine-like substances	70	57	—	—	—	—
Pyrogens	252	163	—	—	—	1
Sterility	1,026	536	43	6	50	9
Toxicity	161	128	1	—	—	—
Viral vaccine identity and safety testing	—	11	—	—	—	—
Total	2,000	1,055	71	7	75	15

Notifiable diseases

TABLE 56 NOTIFIABLE DISEASES: NUMBER OF CASES NOTIFIED FOR DISEASES CONCURRENTLY NOTIFIABLE IN ALL STATES AND TERRITORIES (a)—1969 TO 1973

Disease	*1969*	*1970*	*1971*	*1972*	*1973*
Anthrax	1	—	—	11	—
Brucellosis	136	137	77	66	74
Cholera	1	—	—	41	—
Diphtheria	31	75	31	61	82
Gonorrhoea	9,648	9,542	10,539	11,037	11,337
Hepatitis, infective	7,450	7,571	7,509	6,118	4,358
Hydatid	(b)	37	43	31	24
Leprosy	61	67	32	39	31
Leptospirosis	69	72	97	67	50
Malaria	(b)	234	215	189	203
Ornithosis	2 (c)	4 (c)	2 (c)	10	6
Paratyphoid fever	13	1	5	7	5 (c)
Plague	—	—	—	—	—
Poliomyelitis	1	1	1	7	—
Smallpox	—	—	—	—	—
Syphilis	1,072	946	1,077	1,217	1,430
Tetanus	19	21	24	18	17
Tuberculosis	1,823	1,712	1,482	1,475	1,561
Typhoid fever	34	19	36	15	18
Typhus (all forms)	3	5	7	3	4
Yellow fever	—	—	—	—	—

(a) The figures shown in this table are the number of cases notified to State Health Departments.
(b) Cases previously notified on a financial year basis. The figure for hydatid for the year ended 30 June 1969 was 45. The corresponding figure for malaria was 189.
(c) Not notifiable in all States and Territories.

Notifiable diseases

TABLE 57 NOTIFIABLE DISEASES: NUMBER OF CASES NOTIFIED FOR DISEASES CONCURRENTLY NOTIFIABLE IN ALL STATES AND TERRITORIES (a)—STATES AND TERRITORIES—YEAR ENDED 31 DECEMBER 1973

Disease	*N.S.W.*	*Vic.*	*Qld.*	*S.A.*	*W.A.*	*Tas.*	*A.C.T.*	*N.T.*	*Aust.*
Anthrax	—	—	—	—	—	—	—	—	—
Brucellosis	45	17	7	4	1	—	—	—	74
Cholera	—	—	—	—	—	—	—	—	—
Diphtheria	13	2	61	1	5	—	—	—	82
Gonorrhoea	3,356	1,931	2,192	1,472	1,662	165	35	524	11,337
Hepatitis, infective	1,460	993	793	319	473	40	44	236	4,358
Hydatid	6	4	—	4	1	9	—	—	24
Leprosy	—	7	4	1	5	—	—	14	31
Leptospirosis	9	6	29	3	3	—	—	—	50
Malaria	29	44	59	15	9	2	18	27	203
Ornithosis	2	2	2	—	—	—	—	—	6
Paratyphoid fever	1	(b)	—	2	1	1	—	—	5 (c)
Plague	—	—	—	—	—	—	—	—	—
Poliomyelitis	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—
Syphilis	363	143	362	178	296	1	2	85	1,430
Tetanus	6	4	6	—	—	1	—	—	17
Tuberculosis	591	369	226	109	136	48	23	59	1,561
Typhoid fever	6	8	2	2	—	—	—	—	18
Typhus (all forms)	—	—	4	—	—	—	—	—	4
Yellow fever	—	—	—	—	—	—	—	—	—

(a) The figures shown in this table are the number of cases notified to State Health Departments.
(b) Not notifiable.
(c) Not notifiable in all States and Territories.

Notifiable diseases

TABLE 58 ADDITIONAL NOTIFIABLE DISEASES: NUMBER OF CASES NOTIFIED FOR DISEASES NOT CONCURRENTLY NOTIFIABLE IN ALL STATES AND TERRITORIES (a)—1969 TO 1973

Disease	*1969*	*1970*	*1971*	*1972*	*1973*
Acute rheumatism	55	56	36	25	14
Amoebiasis	16	24	7	11	14
Ankylostomiasis	180	94	82	254	254
Arbovirus infection	—	—	—	—	—
Diarrhoea, infantile	668	738	982	1,044	1,000
Dysentery bacillary	639	544	268	736	480
Encephalitis	83	76	64	52	54
Hepatitis, serum	18	—	72	90	96
Puerperal fever	21	16	12	11	14
Q fever	148	140	168	140	124
Rubella	1,506	1,134	731	827	861
Salmonella infection	562	664	641	455	699
Scarlet fever	480	383	370	248	184
Shigella	181	218	241	272	227
Trachoma	4	4	12	2	1

(a) The figures shown in this table are the number of cases notified to State Health Departments.

Notifiable diseases

TABLE 59 ADDITIONAL NOTIFIABLE DISEASES: NUMBER OF CASES NOTIFIED FOR DISEASES NOT CONCURRENTLY NOTIFIABLE IN ALL STATES AND TERRITORIES (a)—STATES AND TERRITORIES—YEAR ENDED 31 DECEMBER 1973

Disease	*N.S.W.*	*Vic.*	*Qld.*	*S.A.*	*W.A.*	*Tas.*	*A.C.T.*	*N.T.*	*Aust.*
Acute rheumatism	(b)	5	8	—	(b)	(b)	—	1	14
Amoebiasis	(b)	2	9	—	2	—	—	1	14
Ankylostomiasis	—	—	8	—	—	—	—	246	254
Arbovirus infection	—	—	—	—	(b)	—	—	—	—
Diarrhoea, infantile	751	(b)	152	13	(b)	(b)	72	12	1,000
Dysentery bacillary	(b)	15	154	—	212	(b)	—	99	480
Encephalitis	16	17	10	1	—	(b)	8	2	54
Hepatitis, serum	16	79	(b)	—	—	1	—	—	96
Puerperal fever	(b)	7	4	—	1	—	—	2	14
Q fever	14	1	109	(b)	—	—	(b)	—	124
Rubella	(b)	529	21	311	(b)	(b)	—	—	861
Salmonella infection	(b)	70	(b)	239	308	30	20	32	699
Scarlet fever	(b)	118	31	20	10	(b)	5	—	184
Shigella	(b)	—	—	126	—	31	—	70	227
Trachoma	—	(b)	(b)	1	(b)	—	—	—	1

(a) The figures shown in this table are the number of cases notified to State Health Departments.
(b) Not notifiable.

Notifiable diseases

TABLE 60 VENEREAL DISEASE—ALL FORMS—NOTIFICATIONS AND DEATHS—STATES AND TERRITORIES—1964 TO 1973

State or Territory	*1964*	*1965*	*1966*	*1967*	*1968*	*1969*	*1970*	*1971*	*1972*	*1973*
					NOTIFICATIONS					
New South Wales	4,336	4,539	4,991	4,841	5,343	4,463	3,945	4,305	4,026	3,719
Victoria . .	1,361	1,625	1,811	1,927	1,639	1,750	2,151	2,229	2,344	2,074
Queensland .	1,396	1,490	1,630	1,553	1,693	2,087	1,739	2,052	2,270	2,554
South Australia .	(a)	4 (a)	263	420	548	741	724	939	1,194	1,650
Western Australia	403	462	701	838	778	1,026	1,325	1,492	1,727	1,958
Tasmania . .	198	202	173	220	179	99	82	127	156	166
Australian Capital Territory .	41	54	28	36	61	53	59	40	59	37
Northern Territory	77	219	237	508	531	501	463	432	478	609
Australia .	7,812 (a)	8,595 (a)	9,834	10,343	10,772	10,720	10,488	11,616	12,254	1,7672
Rate per 100,000 population .	*77.11 (b)*	*83.26 (b)*	*84.75*	*87.61*	*89.61*	*87.34*	*83.71*	*90.87*	*94.32*	*96.97*
					DEATHS (c)					
New South Wales	22	35	26	30	11	3	12	6	10	7
Victoria . .	27	27	22	18	9	6	7	4	7	5
Queensland .	10	7	11	6	9	6	4	5	1	1
South Australia .	7	6	3	2	1	2	3	1	2	3
Western Australia	3	1	7	4	2	3	1	5	4	1
Tasmania . .	3	1	2	1	2	1	1	—	2	1
Australian Capital Territory .	—	—	—	—	1	—	—	—	—	—
Northern Territory	—	—	—	1	—	—	1	—	—	—
Australia .	72	77	71	62	35	21	29	21	26	18

(a) Not notifiable in South Australia prior to 4 November 1965.
(b) Based on population excluding South Australia.
(c) Source: A.B.S. *Causes of Death*, 1963 to 1972.

Radio and television scripts on medical matters

TABLE 61 NUMBER OF SCRIPTS EXAMINED—1969-70 TO 1973-74

	Approved		*Approved as amended*		*Rejected*		*Examined*	
Type of script	*Number*	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*
Radio—								
1969-70	214	*33.0*	375	*57.8*	60	*9.3*	649	*100.0*
1970-71	380	*47.3*	356	*44.3*	68	*8.5*	804	*100.0*
1971-72	617	*61.6*	218	*21.8*	166	*16.6*	1,001	*100.0*
1972-73	433	*53.5*	157	*19.4*	219	*27.1*	809	*100.0*
1973-74	300	*50.7*	204	*34.5*	88	14.9	592	*100.0*
Television—								
1969-70	113	*37.7*	166	*55.3*	21	*7.0*	300	*100.0*
1970-71	113	*52.3*	97	*44.9*	6	*2.8*	216	*100.0*
1971-72	205	*59.6*	71	*20.6*	68	*19.8*	344	*100.0*
1972-73	131	*51.4*	69	*27.1*	55	*21.6*	255	*100.0*
1973-74	126	*47.4*	105	*39.5*	35	*13.2*	266	*100.0*
Total—								
1969-70	327	*34.5*	541	*57.0*	81	*8.5*	949	*100.0*
1970-71	493	*48.3*	453	*44.4*	74	*7.3*	1,020	*100.0*
1971-72	822	*61.1*	289	*21.5*	234	*17.4*	1,345	*100.0*
1972-73	564	*53.0*	226	*21.2*	274	*25.8*	1,064	*100.0*
1973-74	426	*49.7*	309	*36.0*	123	*14.3*	858	*100.0*

Tuberculosis

TABLE 62 NUMBER OF ALLOWANCES, NOTIFICATIONS, REACTIVATIONS AND MORTALITY—1964 TO 1973

Year ended 31 December	Allowances current at 31 December	Notifications (a)				Reactivations	Deaths	
		Pulmonary	All forms	Pulmonary per 100,000 of population	All forms per 100,000 of population	All forms	All forms	All forms per 100,000 of population
1964	1,573	3,113	3,446	27.9	30.9	(b)	413	3.7
1965	1,378	2,624	2,903	23.0	25.5	242	294	2.6
1966	1,177	2,276	2,549	19.6	22.0	212	321	2.8
1967	1,009	2,005	2,293	17.0	19.4	239	275	2.3
1968	858	1,926	2,233	16.0	18.6	198	243	2.0
1969	625	1,570	1,823	12.8	14.9	157	213	1.7
1970	532	1,455	1,712	11.6	13.7	199	203	1.6
1971	420	1,247	1,482	9.8	11.6	149	182	1.4
1972	457	1,260	1,475	9.7	11.4	130	150	1.2
1973	374	1,275	1,561	9.7	11.9	151	126	1.0

(a) Excludes reactivations.
(b) Not available.

Tuberculosis

TABLE 63 NUMBER OF ALLOWANCES, NOTIFICATIONS, REACTIVATIONS AND MORTALITY—STATES AND TERRITORIES—YEAR ENDED 31 DECEMBER 1973

State or Territory	Allowances current at 31 December 1973	Notifications (a) 1973				Reactivations 1973	Deaths 1973	
		Pulmonary	All forms	Pulmonary per 100,000 of population	All forms per 100,000 of population	All forms	All forms	All forms per 100,000 of population
New South Wales	111	482	591	10.2	12.5	66	36	0.8
Victoria	75	292	369	8.1	10.3	38	45	1.3
Queensland	81	205	226	10.7	11.8	9	12	0.6
South Australia	32	81	109	6.7	9.7	15	9	0.7
Western Australia	21	100	136	9.3	12.7	7	13	1.2
Tasmania	27	44	48	11.1	12.1	7	7	1.8
Australian Capital Territory	—	20	23	11.8	13.6	4	2	1.2
Northern Territory	27	51	59	53.2	61.6	5	2	2.1
Australia	374	1,275	1,561	9.7	11.9	151	126	1.0

(a) Excludes reactivations.

Tuberculosis

TABLE 64 NUMBER AND PERCENTAGE OF NOTIFICATIONS OF PULMONARY DISEASE (EXCLUDING REACTIVATIONS)—AGE GROUPS—STATES AND TERRITORIES—YEAR ENDED 31 DECEMBER 1973

Age group	*N.S.W.*	*Vic.*	*Qld.*	*S.A.*	*W.A.*	*Tas.*	*A.C.T.*	*N.T.*	*Aust.*
				NUMBER OF NOTIFICATIONS					
0- 4	9	21	2	3	—	3	—	2	40
5- 9	3	6	—	1	—	—	—	—	10
10-14	5	3	—	—	—	—	—	1	9
15-19	8	7	1	1	2	3	1	3	26
20-24	27	11	3	2	4	—	—	2	49
25-29	21	15	3	4	9	2	2	2	58
30-34	31	11	7	5	5	4	2	6	71
35-39	31	19	14	4	5	5	2	3	83
40-44	50	23	14	6	6	—	1	7	107
45-49	57	30	24	12	12	9	4	6	154
50-54	35	31	23	13	6	3	1	6	118
55-59	44	21	25	5	11	6	3	3	118
60-64	42	34	21	7	13	2	2	3	124
65-69	49	24	23	4	9	5	—	1	115
70-74	25	8	23	2	10	—	—	4	72
75 and over	45	28	21	12	8	2	2	2	120
Not stated	—	—	1	—	—	—	—	—	1
Total	482	292	205	81	100	44	20	51	1,275
				PERCENTAGE OF NOTIFICATIONS					
0- 4	1.9	7.2	1.0	3.7	—	6.8	—	3.9	3.1
5- 9	0.6	2.0	—	1.2	—	—	—	—	0.8
10-14	1.0	1.0	—	—	—	—	—	2.0	0.7
15-19	1.7	2.4	0.5	1.2	2.0	6.8	5.0	5.9	2.0
20-24	5.6	3.8	1.5	2.5	4.0	—	—	3.9	3.8
25-29	4.4	5.1	1.5	4.9	9.0	4.5	10.0	3.9	4.5
30-34	6.4	3.8	3.4	6.2	5.0	9.1	10.0	11.8	5.6
35-39	6.4	6.5	6.8	4.9	5.0	11.4	10.0	5.9	6.5
40-44	10.4	7.9	6.8	7.4	6.0	—	5.0	13.7	8.4
45-49	11.8	10.3	11.7	14.8	12.0	20.5	20.0	11.8	12.1
50-54	7.3	10.6	11.2	16.0	6.0	6.8	5.0	11.8	9.3
55-59	9.1	7.2	12.2	6.2	11.0	13.6	15.0	5.9	9.3
60-64	8.7	11.6	10.2	8.6	13.0	4.5	10.0	5.9	9.7
65-69	10.2	8.2	11.2	4.9	9.0	11.4	—	2.0	9.0
70-74	5.2	2.7	11.2	2.5	10.0	—	—	7.8	5.6
75 and over	9.3	9.6	10.2	14.8	8.0	4.5	10.0	3.9	9.4
Not stated	—	—	0.5	—	—	—	—	—	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Tuberculosis

TABLE 65 NUMBER AND PERCENTAGE OF NOTIFICATIONS OF ALL FORMS OF DISEASE (EXCLUDING REACTIVATIONS)—AGE GROUPS—STATES AND TERRITORIES—YEAR ENDED 31 DECEMBER 1973

Age group	*N.S.W.*	*Vic.*	*Qld.*	*S.A.*	*W.A.*	*Tas.*	*A.C.T.*	*N.T.*	*Aust.*
				NUMBER OF NOTIFICATIONS					
0- 4	25	24	4	6	13	3	—	2	77
5- 9	8	10	1	1	3	—	—	—	23
10-14	7	8	—	1	—	—	1	2	19
15-19	10	7	1	1	2	3	1	5	30
20-24	32	15	5	5	6	—	—	3	66
25-29	27	20	3	6	12	3	2	2	75
30-34	41	15	8	6	9	4	3	7	93
35-39	35	31	15	6	5	5	3	5	105
40-44	63	30	17	11	8	—	1	7	137
45-49	66	38	25	15	15	10	4	6	179
50-54	46	36	27	18	8	4	1	6	146
55-59	48	25	28	5	12	6	3	3	130
60-64	49	40	22	8	13	3	2	4	141
65-69	52	27	23	4	10	5	—	1	122
70-74	29	11	25	3	11	—	—	4	83
75 and over	52	32	21	13	9	2	2	2	133
Not stated	1	—	1	—	—	—	—	—	2
Total	591	369	226	109	136	48	23	59	1,561
				PERCENTAGE OF NOTIFICATIONS					
0- 4	4.2	6.5	1.8	5.5	9.6	6.3	—	3.4	4.9
5- 9	1.4	2.7	0.4	0.9	2.2	—	—	—	1.5
10-14	1.2	2.2	—	0.9	—	—	4.3	3.4	1.2
15-19	1.7	1.9	0.4	0.9	1.5	6.3	4.3	8.5	1.9
20-24	5.4	4.1	2.2	4.6	4.4	—	—	5.1	4.2
25-29	4.6	5.4	1.3	5.5	8.8	6.3	8.7	3.4	4.8
30-34	6.9	4.1	3.5	5.5	6.6	8.3	13.0	11.9	6.0
35-39	5.9	8.4	6.6	5.5	3.7	10.4	13.0	8.5	6.7
40-44	10.7	8.1	7.5	10.1	5.9	—	4.3	11.9	8.8
45-49	11.2	10.3	11.1	13.8	11.0	20.8	17.4	10.2	11.5
50-54	7.8	9.8	11.9	16.5	5.9	8.3	4.3	10.2	9.4
55-59	8.1	6.8	12.4	4.6	8.8	12.5	13.0	5.1	8.3
60-64	8.3	10.8	9.7	7.3	9.6	6.3	8.7	6.8	9.0
65-69	8.8	7.3	10.2	3.7	7.4	10.4	—	1.7	7.8
70-74	4.9	3.0	11.1	2.8	8.1	—	—	6.8	5.3
75 and over	8.8	8.7	9.3	11.9	6.6	4.2	8.7	3.4	8.5
Not stated	0.2	—	0.4	—	—	—	—	—	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Tuberculosis

TABLE 66 RESULTS OF MASS X-RAY SURVEYS—1964 TO 1973

Year ended 31 December	*Number examined*	*Active and probably active T.B. cases*	
		Number found	*Rate per 1,000 examined*
1964	1,979,416	3,535	1.79
1965	2,033,728	1,729	0.85
1966	1,947,552	988	0.51
1967	1,974,142	827	0.42
1968	2,067,558	990	0.48
1969	1,846,111	457	0.25
1970	1,679,680	323	0.19
1971	1,526,679	268	0.18
1972	1,536,648	295	0.19
1973	1,453,385	264	0.18

Tuberculosis

TABLE 67 RESULTS OF MASS X-RAY SURVEYS—STATES AND TERRITORIES —YEAR ENDED 31 DECEMBER 1973

State or territory	*Number examined*	*Active and probably active T.B. cases*	
		Number found	*Rate per 1,000 examined*
New South Wales	395,659	69	0.17
Victoria	598,721	81	0.14
Queensland	232,049	56	0.24
South Australia	62,551	8	0.13
Western Australia	—	—	—
Tasmania	69,900	9	0.13
Australian Capital Territory	68,569	13	0.19
Northern Territory	25,936	28	1.08
Australia	1,453,385	264	0.18

Tuberculosis

TABLE 68 SOURCES OF NOTIFICATIONS AND REACTIVATIONS—PULMONARY—STATES AND TERRITORIES—YEAR ENDED 31 DECEMBER 1973

Source of discovery	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*A.C.T.*	*N.T.*	*Aust.*	*% of total*
Mass X-ray surveys	99	88	70	8	3	9	13	26	316	22.36
Private medical practitioners	134	48	17	15	23	2	4	—	243	17.20
General and chest hospitals	88	59	85	19	17	12	—	9	289	20.45
Chest clinics	150	92	21	26	45	24	5	20	383	27.11
Repatriation clinics and hospitals	48	25	10	13	6	4	—	—	106	7.50
Death certificates (a)	13	8	8	3	5	—	—	—	37	2.62
Special surveys:										
Mental hospital surveys	12	2	1	—	3	—	—	—	18	1.27
Gaol surveys	1	—	—	—	—	—	—	—	1	0.07
Others	1	1	2	11	5	—	—	—	20	1.42
Total	546	323	214	95	107	51	22	55	1,413	100.00
% from mass X-ray surveys	18.13	27.24	32.71	8.42	2.80	17.65	59.09	47.27	22.36	

(a) Not previously notified cases who died from active tuberculosis.

Tuberculosis

TABLE 69 EXPENDITURE UNDER THE *TUBERCULOSIS ACT* (1948)—1964-65 TO 1973-74

($'000)

Year ended 30 June	*Reimbursements to States and Federal payments in territories*		*Allowances paid to sufferers through Department of Social Security*	*Total*
	Capital (a)	*Maintenance*		
1965	703	10,337	1,458	12,497
1966	689	13,577	1,286	15,552
1967	499	11,238	1,193	12,930
1968	780	11,508	1,091	13,380
1969	847	11,743	921	13,511
1970	593	10,882	771	12,246
1971	469	10,938	659	12,067
1972	438	9,941	630	11,009
1973	388	11,242	780	12,409
1974	441	11,741	716	12,898

(a) Excludes capital payments for A.C.T. and N.T.

Tuberculosis

TABLE 70 EXPENDITURE UNDER THE *TUBERCULOSIS ACT* (1948)—STATES AND TERRITORIES —1973-74

($'000)

State or Territory	Reimbursements to states and Federal payments in territories: Capital	Reimbursements to states and Federal payments in territories: Maintenance (a)	Allowances paid to sufferers through Department of Social Security	Total
New South Wales	22	3,346	222	3,589
Victoria	—	3,628	169	3,797
Queensland	22	2,247	130	2,399
South Australia	395	988	48	1,430
Western Australia	—	785	39	824
Tasmania	2	253	54	308
Australian Capital Territory	(b)	24	1	25 (c)
Northern Territory	(b)	470	55	525 (c)
Australia	441 (c)	11,740	716	12,897 (c)

(a) Includes $427,139 payable from the Consolidated Revenue Fund.
(b) Not available.
(c) Excludes capital payments for A.C.T. and N.T.

Australian Dental Standards Laboratory

TABLE 71 NUMBER OF SAMPLES TESTED FOR WHICH LABORATORY REPORTS WERE ISSUED—1966-67 TO 1973-74

Year ended 30 June	Local manufacturers and distributors	Overseas manufacturers	Public instrumentalities	Internal	Total
1967	119	55	17	18	209
1968	148	23	16	10	197
1969	128	18	38	29	213
1970	177	19	60	29	285
1971	165	22	317	70	574
1972	146	37	197	24	404
1973	129	19	317	23	488
1974	68	42	433	18	561

Australian Dental Standards Laboratory

TABLE 72 NUMBER OF SAMPLES TESTED FOR WHICH LABORATORY REPORTS WERE ISSUED—1973-74

Type of product	Local manufacturers and distributors	Overseas manufacturers	Public instrumentalities	Internal	Total
Mineral products	10	2	43	—	55
Cements	2	15	36	—	53
Metals and alloys	19	9	14	—	42
Synthetic resins	19	6	65	—	90
Waxes and impression materials	9	10	84	14	117
Instruments and devices	1	—	138	1	140
Therapeutic materials	8	—	53	3	64
Total	68	42	433	18	561

Pathology laboratories

TABLE 73 NUMBER OF PATHOLOGY EXAMINATIONS AND LABORATORY TESTS PERFORMED AND NUMBER OF PATIENT REQUESTS—1972-73 AND 1973-74

	Examinations and tests		*Patient requests (a)*	
Health laboratory	*1972-73*	*1973-74*	*1972-73*	*1973-74*
Albury	126,412	139,797	35,081	38,391
Alice Springs	47,560	67,741	13,639	22,767
Bendigo	178,333	197,172	65,835	65,247
Cairns	331,211	373,621	113,830	137,655
Canberra (b)	806,009	955,406	183,620	218,985
Darwin (c)	285,036	312,874	81,173	95,695
Hobart	241,704	251,762	70,505	68,017
Kalgoorlie	79,185	101,363	25,567	34,529
Launceston	99,844	155,980	39,048	53,491
Lismore	278,723	325,107	72,516	85,078
Port Pirie	28,364	32,936	11,564	10,727
Rockhampton	440,341	245,271	134,974	75,184
Tamworth	185,964	237,578	66,603	73,761
Toowoomba	260,084	281,473	85,310	91,290
Townsville	294,880	315,934	103,567	102,741
Total	3,683,650	3,994,015	1,102,832	1,173,558

(a) Number of persons on behalf of whom tests were performed in the major work specialisation areas of the laboratory, e.g. Haematology, Biochemistry, Microbiology, etc. Involves some measure of multiple counting in the case of work done for patients in more than one of the areas.
(b) Includes figures for Woden Valley hospital.
(c) Includes figures for Gove.

Note: In addition to normal diagnostic pathology work, Health Laboratories may undertake laboratory work of a public health nature—for example, bacteriological analysis of water. Serological examination of local donor blood is also undertaken in most of the Laboratories on behalf of the Red Cross Blood Transfusion Service. Figures relating to this additional work are included in the statistics presented above.

National Acoustic Laboratories

TABLE 74 NEW CASES EXAMINED—1969-70 TO 1973-74

Category	*1969-70*	*1970-71*	*1971-72*	*1972-73*	*1973-74*
Persons under 21 years (a)	8,590	9,800	11,322	13,036	14,495
Pensioners (excluding repatriation) (b)	9,673	8,907	8,765	9,119	11,414
Repatriation (c)	5,588	5,885	5,586	4,983	4,833
Armed Forces (serving)	918	982	877	728	753
Federal Departments (d)	862	719	571	540	531
State Departments (Queensland only) (e)	279	309	238	133	150
Other	1,128	991	1,119	912	913
Sub-total	*27,038*	*27,593*	*28,478*	*29,451*	*33,089*
Civil aviation referrals (f)	1,059	1,166	806	616	746
Total	28,097	28,759	29,284	30,067	33,835

(a) All persons under 21 years of age included in this category irrespective of source of referral.
(b) Pensioners and their dependants as defined in the National Health Act.
(c) Persons referred by Repatriation Department.
(d) Mainly referrals by Australian Government Medical Officers; persons in this category are not entitled to fitting of a hearing aid except in compensation cases.
(e) Referred by the Queensland Government in connection with cases of compensation for loss of hearing; hearing aids not provided to these persons.
(f) Audiometric examinations of flight crews as required by Department of Civil Aviation and for which a charge is made; hearing aids are not provided to these persons.

National Acoustic Laboratories

TABLE 75 NEW CASES EXAMINED—STATES—1973-74

Category	*N.S.W. (incl. A.C.T.)*	*Vic.*	*Qld*	*S.A. (incl. N.T.)*	*W.A.*	*Tas.*	*Aust.*
Persons under 21 years (a)	4,116	3,430	3,888	1,286	1,179	596	14,495
Pensioners (excluding repatriation) (b)	3,957	2,857	1,957	1,328	844	471	11,414
Repatriation (c)	2,087	1,387	548	392	311	108	4,833
Armed Forces (serving)	347	100	171	53	50	32	753
Federal Departments (d)	155	133	104	90	20	29	531
State Departments (Queensland only) (e)	—	—	150	—	—	—	150
Other	6	35	686	45	54	87	913
Sub-total	*10,668*	*7,942*	*7,504*	*3,194*	*2,458*	*1,323*	*33,089*
Civil aviation referrals (f)	224	200	165	70	51	36	746
Total	10,892	8,142	7,669	3,264	2,509	1,359	33,835

(a), (b), (c), (d), (e) and (f); see footnotes, Table 74.

National Acoustic Laboratories

TABLE 76 CALAID HEARING AIDS FITTED—1969-70 TO 1973-74

Recipients	*1969-70*	*1970-71*	*1971-72*	*1972-73*	*1973-74*
Persons under 21 years (a)	1,586	2,035	2,981	2,774	2,451
Pensioners (excluding repatriation) (b)	9,244	8,497	9,272	9,772	12,029
Repatriation (c)	3,800	3,462	2,945	3,425	3,292
Armed Forces (serving)	20	20	12	14	21
Federal Departments (d)	27	23	35	51	55
Other	1	—	—	—	—
Total	14,678	14,037	15,245	16,036	17,848

(a), (b), (c) and (d); see footnotes, Table 74.

National Acoustic Laboratories

TABLE 77 CALAID HEARING AIDS FITTED—STATES—1973-74

Recipients	*N.S.W. (incl. A.C.T.)*	*Vic.*	*Qld*	*S.A. (incl. N.T.)*	*W.A.*	*Tas.*	*Aust.*
Persons under 21 years (a)	919	552	464	297	181	38	2,451
Pensioners (excluding repatriation) (b)	4,984	2,477	2,159	1,292	699	418	12,029
Repatriation (c)	1,401	639	535	339	245	133	3,292
Armed Forces (serving)	8	7	4	2	—	—	21
Federal Departments (d)	8	7	34	3	2	1	55
Total	7,320	3,682	3,196	1,933	1,127	590	17,848

(a), (b), (c) and (d); see footnotes, Table 74.

National Acoustic Laboratories

TABLE 78 CALAID HEARING AIDS ON LOAN—1969-70 TO 1973-74

	At 30 June				
Borrower	*1970*	*1971*	*1972*	*1973*	*1974*
Persons under 21 years (a)	10,249	11,619	13,816	15,700	17,396
Pensioners (excluding repatriation) (b)	19,348	26,490	33,417	40,194	48,698
Repatriation (c)	20,793	22,266	23,191	24,581	26,174
Armed Forces (serving)	113	128	139	147	170
Federal Departments (d)	1,888	1,907	1,926	1,971	2,020
Other	1	1	—	—	—
Total	52,392	62,411	72,489	82,593	94,458

(a), (b), (c) and (d); see footnotes, Table 74.

National Acoustic Laboratories

TABLE 79 CALAID HEARING AIDS ON LOAN—STATES—AT 30 JUNE 1974

Borrower	*N.S.W. (incl. A.C.T.)*	*Vic.*	*Qld*	*S.A. (incl. N.T.)*	*W.A.*	*Tas.*	*Aust.*
Persons under 21 years (a)	4,935	5,085	3,257	2,231	1,274	614	17,396
Pensioners (excluding repatriation) (b) . .	19,343	10,955	7,812	5,155	3,721	1,712	48,698
Repatriation (c) . .	10,158	6,426	3,329	2,632	2,617	1,012	26,174
Armed Forces (serving) .	53	57	19	30	10	1	170
Federal Departments (d) .	1,106	56	109	466	277	6	2,020
Total . . .	35,595	22,579	14,526	10,514	7,899	3,345	94,458

(a), (b), (c) and (d); see footnotes, Table 74.

Australian Radiation Laboratory

TABLE 80 EXPENDITURE FROM THE NATIONAL WELFARE FUND ON RADIOPHARMACEUTICALS FOR MEDICAL DIAGNOSIS AND THERAPY PURPOSES—1964-65 TO 1973-74

($)

Year ended 30 June	*Expenditure*	*Year ended 30 June*	*Expenditure*
1965	67,942	1970	410,144
1966	81,755	1971	616,807
1967	132,201	1972	925,097
1968	154,764	1973	1,326,240
1969	257,277	1974	1,611,999

Australian Radiation Laboratory

TABLE 81 NUMBER OF RADIOPHARMACEUTICALS ISSUED FOR MEDICAL DIAGNOSIS AND THERAPY PURPOSES—1964-65 TO 1973-74

Year ended 30 June	*Issues (a)*	*Year ended 30 June*	*Issues (a)*
1965	22,498	1970	123,381
1966	24,751	1971	202,566
1967	37,549	1972	246,467
1968	64,237	1973	679,400 r
1969	86,944	1974	932,900

(a) Denotes a radiopharmaceutical container despatched from the laboratory. For in vivo use the radiopharmaceutical in the container may consist either of an individual patient dose or of a bulk issue from which a number of patient doses will be dispensed. For in vitro use where the radiopharmaceutical is in kit form the number of issues is the number of tests that may be performed. This number will be greater than the number of patient assays performed since they are generally done in duplicate and standards and controls are necessary. For in vitro use where the radiopharmaceutical is not in kit form the number of issues is the number of containers despatched and the material in each container may be used for a large number of assays.

Australian Radiation Laboratory

TABLE 82 RADIOPHARMACEUTICALS PROCURED—1964-65 TO 1973-74

Year ended 30 June	*Shipments received*		
	From overseas	*From Australian Atomic Energy Commission*	*Total*
1965	1,622	83	1,705
1966	1,994	156	2,150
1967	2,135	266	2,401
1968	2,255	370	2,625
1969	2,482	1,946	4,428
1970	1,352	6,096	7,448
1971	1,548	9,954	11,502
1972	1,439	10,922	12,361
1973	1,512 r	14,002 r	15,514 r
1974	1,527	13,457	14,984

Australian Radiation Laboratory

TABLE 83 RADIOCHEMISTRY AND LOW LEVEL MEASUREMENT OF RADIOACTIVITY—1964-65 TO 1973-74

Year ended 30 June	*Samples processed*	*Year ended 30 June*	*Samples processed*
1965	1,065	1970	3,312
1966	1,717	1971	7,404
1967	10,370	1972	7,209
1968	4,737	1973	4,669
1969	8,622	1974	5,028

Australian Radiation Laboratory

TABLE 84 FILM-BADGE SERVICE (a)—FILMS ASSESSED AND CENTRES REGISTERED—1964-65 TO 1973-74

Year ended 30 June	*Films assessed during year*	*Centres registered at end of year*
1965	65,299	815
1966	66,528	956
1967	74,711	1,063
1968	77,301	1,186
1969	81,682	1,293
1970	75,103	1,407
1971	71,008	1,527
1972	74,345	1,646
1973	79,550	1,776
1974	88,067	1,919

(a) Issue of film-badges to people working with ionising radiations to permit assessment of the doses of radiation received by them in the course of their work.

Australian Radiation Laboratory

TABLE 85 RADON SERVICES—ISSUES (a)—1964-65 TO 1973-74

(mCi)

Year ended 30 June	*Hospitals*	*Private practitioners*	*Veterinary use*	*Miscellaneous purposes*	*Total all purposes*
1965	21,083	10,306	—	2,402	33,791
1966	19,922	11,250	116 (b)	315	31,603
1967	19,545	10,088	1,712	616	31,961
1968	18,608	10,727	771	336	30,442
1969	17,893	6,541	90	417	24,941
1970	17,454	6,262	593	228	24,537
1971	16,904	7,879	2,338	154	27,275
1972	14,084	8,161	1,631	202	24,078
1973	14,019	8,027	991	90	23,127
1974	13,357	8,616	790	106	22,869

(a) The activities of radon in millicuries (mCi) at time of use.
(b) Radon was first supplied for veterinary use in 1966.

School of Public Health and Tropical Medicine

TABLE 86 LABORATORY AND CLINICAL EXAMINATIONS—1969-70 TO 1973-74

Sub-section	*Number of examinations*				
	1969-70	*1970-71*	*1971-72*	*1972-73*	*1973-74*
Industrial health—					
Medical examinations	385	679	337	647	2,317
Laboratory examinations:					
Routine	1,733	497	182	212	283
Consultative	77	81	50	49	134
Medical examinations at Australian Government factories in New South Wales	33,330	40,030	29,388	29,303	27,003
Total	35,525	41,287	29,957	30,211	29,737
Parasitology—					
Routine	244	240	1,648	1,134	1,782
Research	5,021	5,427	2,903	2,033	3,414
Total	5,265	5,667	4,551	3,167	5,196
Pathology and microbiology—					
Histopathology (consultant)	894	736	765	902	1,135
Serology	1,273	1,295	1,871	1,884	2,135
Bacteriology	630	176	288	605	434
Mycology	345	473	152	140	157
Quarantine exclusion tests	55	14	23	669	47
Animals issued	2,197	2,844	1,345	1,361	1,288
Total	5,394	5,538	4,444	5,561	5,196
Total examinations performed	46,184	52,492	38,952	38,939	40,129

Australian Government Medical Officers

TABLE 87 NUMBER OF CLINICAL EXAMINATIONS BY AUSTRALIAN GOVERNMENT MEDICAL OFFICERS—1965-66 TO 1973-74

Year ended 30 June	*Staff of Australian Government Departments and Authorities*	*Seamen*	*Pensioners*	*Others*	*Total*
1966	61,847	2,221	14,919	1,377	80,364
1967	64,884	1,912	16,572	2,137	85,505
1968	63,964	1,953	16,511	3,265	85,693
1969	64,885	1,886	16,242	3,023	86,036
1970	73,086	2,079	17,104	1,681	93,950
1971	73,886	2,542	16,258	1,266	93,952
1972	71,205	1,883	15,899	1,192	90,179
1973	69,757	2,848	16,878	1,354	90,837
1974	76,464	1,428	16,392	1,678	95,962

Australian Government Medical Officers

TABLE 88 NUMBER OF CLINICAL EXAMINATIONS BY AUSTRALIAN GOVERNMENT MEDICAL OFFICERS—STATES AND TERRITORIES—1973-74

State or territory	*Staff of Australian Government Departments and Authorities*	*Seamen*	*Pensioners*	*Others*	*Total*
New South Wales	27,807	844	6,036	—	34,687
Victoria	17,898	239	2,634	15	20,786
Queensland	6,827	143	2,322	—	9,292
South Australia	4,434	42	2,914	369	7,759
Western Australia	3,972	141	1,735	—	5,848
Tasmania	1,153	11	404	46	1,614
Australian Capital Territory	12,141	—	217	278	12,636
Northern Territory	2,232	8	130	970	3,340
Australia	76,464	1,428	16,392	1,678	95,962

Australian Government Medical Officers

TABLE 89 NUMBER OF VACCINATIONS BY AUSTRALIAN GOVERNMENT MEDICAL OFFICERS—1965-66 TO 1973-74

Year ended 30 June	Cholera and combined cholera and typhoid (a)	Gamma globulin	Influenza	Plague	Small-pox	Tetanus	Typhoid and T.A.B.	Typhus	Yellow fever	Total
1966	42,061	85	7,164	92	40,640	1,905	4,636	4	2,135	98,722
1967	56,017	441	5,261	185	45,850	1,853	8,480	86	2,389	120,562
1968	46,667	394	10,464	473	51,511	4,031	8,596	159	2,998	125,293
1969	59,882	921	3,853	543	62,816	1,972	10,744 (b)	384	3,572	144,687
1970	73,307	536	32,684	266	83,601	2,036	10,381	123	4,060	206,994
1971	144,377 (c) r	703	21,740 r	357 r	102,708 r	2,061 r	19,540 r	190	4,597	296,273
1972	171,628	511	1,202	330	134,803	2,731	19,430	151	4,790	335,576
1973	227,963	419	94	207	149,192	2,662	(d)	375	5,411	386,323
1974	246,808	339	24	164	137,830	1,302	—	244	6,553	393,264

(a) Figures for all States except S.A. represent the total number of injections given. Figures for S.A. show the number of courses given.
(b) Prior to 1968-69, T.A.B. only.
(c) Prior to 1970-71, cholera only.
(d) As from 1 July 1972, T.A.B. injections have not been given. Typhoid injections have only been given combined with cholera.

Australian Government Medical Officers

TABLE 90 NUMBER OF VACCINATIONS BY AUSTRALIAN GOVERNMENT MEDICAL OFFICERS—STATES AND TERRITORIES—1973-74

State or territory	Cholera and combined cholera and typhoid (a)	Gamma globulin	Influenza	Plague	Small-pox	Tetanus	Typhus	Yellow fever	Total
New South Wales	123,847	37	4	30	67,679	35	30	2,434	194,096
Victoria	37,057	1	—	6	25,162	78	—	1,822	64,126
Queensland	21,477	—	—	2	11,997	113	174	596	34,359
South Australia	8,839	—	7	6	8,843	74	24	494	18,287
Western Australia	10,226	—	—	—	5,397	1	—	679	16,303
Tasmania	5,149	—	2	2	2,498	4	2	112	7,769
Australian Capital Territory	18,980	67	10	84	9,560	278	11	297	29,287
Northern Territory	21,233	234	1	34	6,694	719	3	119	29,037
Australia	246,808	339	24	164	137,830	1,302	244	6,553	393,264

(a) Figures for all States except S.A. represent the total number of injections given. Figures for S.A. show the number of courses given.

International health

TABLE 91 TRAINING—STATES AND TERRITORIES—1972-73 AND 1973-74

State or territory	Number of persons in training during 1973-74 (a)			Number of institutional places (b) involved in training in 1973-74		Man-months of training in 1973-74 (f)
	Type of course			Type of course		
	Formal (c)	Ad hoc (d)	Group (e)	Formal (c)	Ad hoc (d)	
New South Wales	17	30	—	30	59	221.0
Victoria	4	24	—	22	63	143.0
Queensland	—	10	—	9	12	48.5
South Australia	—	7	—	—	20	22.5
Western Australia	—	6	—	—	16	23.5
Tasmania	—	—	—	3	5	—
Australian Capital Territory	—	1	—	12	7	8.5
Northern Territory	—	—	—	3	4	—
Interstate (g)	7	20	20	n.a.	n.a.	183.5
Australia—1973-74	28	98	20	79	186	650.5
1972-73	30	134	16	48	310	853.0

(a) Overseas postgraduate, medical, dental and paramedical personnel sponsored under various Australian and international schemes for training in the health field.
(b) An individual institution is counted once for each trainee. Details are not available for group courses.
(c) A formal course is one conducted by a University or College of Advanced Education leading to the award of a qualification from that institution.
(d) Ad hoc courses are mainly short courses arranged for individual applicants at various health institutions. These courses do not lead to the award of a qualification from the institutions.
(e) A group course is one organised for a number of overseas trainees to attend one or more health institutions for instruction as a group.
(f) Excludes induction periods and English training.
(g) Training at institutions located in more than one State.

International health

TABLE 92 NUMBER OF PERSONS IN TRAINING (a)—1973-74

Type of course (b)	*In training at beginning of year*		*Training commenced during 1973-74*		*Training completed during 1973-74*		*In training at end of year*	
	Males	*Females*	*Males*	*Females*	*Males*	*Females*	*Males*	*Females*
Formal courses: (c)								
Australian Government (d)	9	—	4	1	8	—	5	1
Other . . .	6	5	—	3	6	4	—	4
Total . . .	15	5	4	4	14	4	5	5
Ad hoc courses: (e)								
Australian Government (d)	16	5	22	1	25	5	13	1
Other . . .	10	5	29	10	20	10	19	5
Total . . .	26	10	51	11	45	15	32	6
Group courses: (f)								
Australian Government (d)	—	—	11	—	11	—	—	—
Other . . .	—	—	9	—	9	—	—	—
Total . . .	—	—	20	—	20	—	—	—
All courses:								
Australian Government (d)	25	5	37	2	44	5	18	2
Other . . .	16	10	38	13	35	14	19	9
Total . . .	41	15	75	15	79	19	37	11

(a) See footnote (a) Table 91.
(b) Excludes English and induction courses.
(c) See footnote (c) Table 91.
(d) Training courses arranged through Australian Government training schemes such as the Colombo Plan.
(e) See footnote (d) Table 91.
(f) See footnote (e) Table 91.

Medical practitioners

The tables below contain the results of a special survey undertaken primarily in response to a request from the Committee on Medical Schools of the Australian Universities Commission for current and comprehensive statistics of medical practitioners active in Australia.

A representative sample of registered medical practitioners was selected and their relevant particulars checked against various sources of information to determine, principally, activity and if resident in Australia. Where necessary, individual cases were followed up. From these results, estimates were made of the total number of active resident medical practitioners in Australia at 30 June 1972.

Medical practitioners

TABLE 93 ESTIMATES OF THE TOTAL NUMBER OF REGISTERED, RESIDENT AND ACTIVE MEDICAL PRACTITIONERS (a)—AT 30 JUNE 1972

	Number
Registrations of medical practitioners (b)	28,269
Less: Duplications of registration between states	4,406
Registered medical practitioners	23,863
Less: Medical practitioners with registered addresses overseas	1,935
	21,928
Less: Medical practitioners with registered addresses in Australia but absent overseas (c)	2,451
	19,477
Less: Medical practitioners found to be resident in Australia but inactive (d)	1,505
Total Registered, Resident and Active Medical Practitioners in Australia	17,972

(a) The estimates are based on a sample selected from state medical board registers and are thus subject to sample error. The standard error of the total number of registered, resident and active medical practitioners in Australia of 17,972 is 380. There are 19 chances in 20 that the true value lies within two standard errors of the estimate, that is in the range 17,212 to 18,732.
(b) Estimate based on number of listings in medical board registers (including amendments) of all states and territories. Resident medical officers are included in these estimates.
(c) Medical practitioners found to be absent overseas at 30 June 1972.
(d) Medical practitioners found to be inactive at 30 June 1972.

Medical practitioners

TABLE 94 ESTIMATES OF THE TOTAL NUMBER OF REGISTERED RESIDENT AND ACTIVE MEDICAL PRACTITIONERS (a)—STATES (b)—AT 30 JUNE 1972

State	*Number*	*Standard error*
New South Wales (including Australian Capital Territory)	7,256	210
Victoria	5,248	220
Queensland	2,199	130
South Australia (including Northern Territory)	1,631	140
Western Australia and Tasmania (c)	1,638	130
Australia	17,972	380

(a) See footnote (a) Table 93.
(b) Medical practitioners registered in more than one state have been assigned to the main state of practice.
(c) Western Australia and Tasmania have been combined on account of the relatively large sample errors for the individual states.

Home nursing organisations

The Home Nursing Subsidy Scheme, which came into operation on 1 January 1957, was designed to assist in the extension of home nursing activities, either by the expansion of existing organisations or the formation of new ones. To be eligible to receive the subsidy, an organisation must provide a home nursing service, be non-profit making, employ registered nurses and be in receipt of assistance from a State government, a local government body or other authority established under a State Act. The amount of subsidy paid by the Australian Government is limited to the assistance received from the State and/or local government. The continued expansion of home nursing services is of interest to the Government in its overall consideration of health care services in Australia.

Since 1966-67 reports have been prepared annually in the Research Section on the growth in home nursing services and the financial operations of the organisations involved. For the past five years, each organisation in receipt of federal subsidy has been asked to complete a standard form setting out details of its financial operations. Since 1967-68 the organisations have been asked also to indicate the number of patients treated. Additional information relating to the number of nurses employed by home nursing organisations and the number of visits made by those nurses from 1963-64 onwards has been derived from the quarterly claim forms submitted to the Department by the organisations.

Home nursing organisations

TABLE 95 NUMBER OF HOME NURSING ORGANISATIONS—STATES—1968-69 TO 1972-73

At 30 June	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*Total*
1969	44	19	7	1	1	6	78
1970	50	25	7	1	2	9	94
1971	52	31	7	1	4	12	107
1972	63	34	7	1	4	15	124
1973	70	43	8	1	5	17	144

Home nursing organisations

TABLE 96 NUMBER OF VISITS MADE BY HOME NURSING ORGANISATIONS —STATES—1963-64 TO 1972-73

('000)

Year ended 30 June	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*Total*
1964	334	358	230	145	193	18	1,278
1965	372	418	271	146	224	21	1,452
1966	432	442	338	154	249	25	1,640
1967	484	458	379	150	265	26	1,762
1968	519	486	416	147	268	32	1,868
1969	579	506	484	168	287	40	2,064
1970	632	541	521	181	310	55	2,240
1971	706	567	574	197	355	66	2,465
1972	768	615	651	211	420	71	2,736
1973	805	633	692	229	439	78	2,876

Home nursing organisations

TABLE 97 NUMBER OF VISITS MADE BY HOME NURSING ORGANISATIONS PER 1,000 POPULATION—STATES—1963-64 TO 1972-73

Year ended 30 June	*N.S.W.*	*Vic.*	*Qld*	*S.A.*	*W.A.*	*Tas.*	*Total*
1964	82	116	144	142	242	51	117
1965	90	133	167	139	274	58	130
1966	103	138	204	142	298	68	145
1967	113	141	225	136	307	70	153
1968	119	147	242	131	300	85	159
1969	131	151	276	148	309	104	172
1970	140	158	292	157	322	142	183
1971	155	163	317	168	351	169	198
1972	165	174	352	179	401	181	216
1973	171	177	365	192	413	197	224

Home nursing organisations

TABLE 98 AVERAGE NUMBER OF NURSES EMPLOYED (a) BY HOME NURSING ORGANISATIONS—STATES—1963-64 TO 1972-73

Year ended 30 June	*N.S.W.*	*Vic.*	*Qld (b)*	*S.A.*	*W.A.*	*Tas.*	*Total*
1964	127	146	79	53	61	8	474
1965	144	169	88	52	69	10	532
1966	158	195	108	53	80	10	604
1967	169	208	115	52	87	10	641
1968	191	229	127	53	90	12	702
1969	206	242	154	54	94	15	765
1970	226	254	164	60	101	21	826
1971	248	268	178	63	118	26	901
1972	270	291	197	68	133	31	990
1973	286	323	230	71	146	35	1,091

(a) Federal subsidies to home nursing organisations are based on the number of nurses employed over and above the number employed at 30 September 1956 in the case of organisations existing at that date, and on the total number of nurses employed by home nursing organisations formed after that date. The actual numbers of nurses employed at 30.9.56 were: N.S.W., 42; Vic., 83; Qld., 16; S.A., 38; W.A., 29; Tas., 2 Total: 210.

(b) From 1 July 1968 includes part-time nurses employed by Blue Nursing Service expressed as full-time equivalents. Figures for earlier years not strictly comparable with those for other states.

TERRITORY HEALTH

Australian Capital Territory health

TABLE 99 NUMBER OF LICENCES ISSUED UNDER THE PUBLIC HEALTH ORDINANCE—1969 TO 1973

Type	*1969*	*1970*	*1971*	*1972*	*1973*
Barber shops	87	104	98	105	106
Boarding houses	69	68	73	68	71
Eating houses	103	109	110	97	104
Ice cream vendors	9	5	9	10	12
Meat vendors	72	94	87	85	94
Milk distributors	85	87	97	(a)	—
Milk vendors	234	239	280	(a)	—
Prepared meat vendors	276	275	271	335	301
Total	935	981	1,025	700	688

(a) From 1 January 1972 licences for milk distributors and vendors were issued by the Australian Capital Territory Milk Authority.

Australian Capital Territory health

TABLE 100 NUMBER OF NEW REGISTRATIONS GRANTED—1969-70 TO 1973-74

Type	*1969-70*	*1970-71*	*1971-72*	*1972-73*	*1973-74*
Dental practitioners	5	13	8	15	16
Medical practitioners	52	71	50	56	60
Nurses	341	343	359	546	438
Nursing aides	89	63	94	97	114
Optometrists	1	—	2	—	2
Pharmacists	25	23	20	27	26
Veterinary surgeons	1	1	2	4	8
Total	514	514	535	745	664

Australian Capital Territory health

TABLE 101 NUMBER OF SAMPLES COLLECTED BY HEALTH INSPECTION SECTION—1972-73 AND 1973-74

	For bacteriological examination		*For chemical examination*	
Type	*1972-73*	*1973-74*	*1972-73*	*1973-74*
Cream	182	208	83	204
Meat	—	299	57	54
Milk	1,755	1,822	1,009	932
Other foods	386	370	176	107
Sewage	271	76	13	55
Water—				
City Supply	1,207	1,456	149	156
Fluoride Tests	—	—	278	202
Lake Burley Griffin and Molonglo River	295	2,428	25	95
Picnic resorts and other supplies	736	435	280	293
Swimming pools	172	260	25	48
Total	5,004	7,354	2,095	2,146

Australian Capital Territory health

TABLE 102 SCHOOL MEDICAL SERVICE EXAMINATIONS—1969-70 TO 1973-74

	1969-70	*1970-71*	*1971-72*	*1972-73*	*1973-74*
Number examined	16,956	19,610	19,162	23,863	26,609
Defects notified—					
Hearing	365	263	224	435	212
Psychological and emotional	123	72	142	103	92
Severe dental caries	62	11	6	16	17
Speech	42	56	42	60	32
Squint	55	50	42	59	157
Vision	621	718	796	1,176	924
All others	225	317	346	539	739
Total	1,493	1,487	1,598	2,388	2,173
Referrals—					
Child Guidance Clinic	127	99	153	102	67
Acoustic Laboratory	178	112	104	138	41
Educational Clinic	13	14	34	84	28
Parent interviews	1,854	1,480	2,599	2,421	1,805

Northern Territory health

TABLE 103 NUMBER OF LICENCES ISSUED UNDER THE PUBLIC HEALTH ORDINANCE—YEAR ENDED 31 DECEMBER 1973

Type	*Darwin*	*Alice Springs*	*Katherine*	*Tennant Creek*	*Gove*
Barber shops	23	10	1	1	—
Boarding houses and caravan parks (a)	108	56	18	6	2
Dairies—Dairymen	2	2	—	—	—
Eating houses	68	26	8	2	—
Food shops (milk)	83	56	23	7	—
Itinerant food vendors	7	—	—	—	—
Milk vendors	6	4	—	—	—
Septic tank applications	55	38 (b)	11	5	—
Total	352	192	61	21	2

(a) Figures do not include licences issued to motels and roadside inns located within the Northern Territory.
(b) Includes 27 in rural areas.

Northern Territory health

TABLE 104 NUMBER OF NEW REGISTRATIONS GRANTED—1972-73 AND 1973-74

Type	*1972-73*	*1973-74*
Dental practitioners	6	22
Dental therapists (a)	n.a.	2
Medical practitioners	102	112
Nurses	313	350
Optometrists	1	1
Pharmacists	14	18
Total	436	505

(a) Registration requirement introduced 12 July 1973 by amendment to Dentists Registration Ordinance 1953-1973.

Northern Territory health

TABLE 105 IMMUNISATIONS—SUMMARY OF DOSES ADMINISTERED AT MAIN HOSPITALS AND INFANT HEALTH CENTRES—1969-70 TO 1973-74

	Hospitals					*Infant Health Centres (a)*				
	1969-70	*1970-71*	*1971-72*	*1972-73*	*1973-74*	*1969-70*	*1970-71*	*1971-72*	*1972-73*	*1973-74*
Darwin	3,412	2,620	1,202	1,676	1,585	7,344	10,156	10,634	11,323	14,012
Alice Springs	1,133	1,642	1,196	2,332	1,233	867	1,064	1,258	1,184	1,023
Katherine	843	1,022	879	1,047	1,037	55	651	478	570	1,320
Tennant Creek	1,089	1,823	383	623	553	503	902	1,221	1,500	1,657
Gove	801(b)	1,580	2,265	1,445	298	—	—	—	300(c)	937
Adelaide River	n.a.	n.a.	n.a.	n.a.	n.a.	(d)	(d)	(d)	34	34
Batchelor	n.a.	n.a.	n.a.	n.a.	n.a.	(d)	(d)	(d)	70	108

(a) Figures for Darwin include immunisations at Infant Health Centres conducted by Schools Medical Staff.
(b) Immunisations commenced 23 July 1969.
(c) Infant Health Service operative from October 1972.
(d) Not available.

Northern Territory health

TABLE 106 NUMBER OF SAMPLES COLLECTED FOR BACTERIOLOGICAL EXAMINATION BY HEALTH INSPECTION SECTION—1973-74

Type	*Darwin*	*Alice Springs*	*Katherine*	*Tennant Creek*	*Gove*
Milk	15	279	—	13	—
Water—City Supply	450	546	31	9	10
Fluoride tests	490	98	—	—	—
Picnic resorts and other supplies	100	—	—	—	—
Swimming pools	66	—	—	12	—

Northern Territory health

TABLE 107 SCHOOL MEDICAL SERVICE EXAMINATIONS—1973-74

	Northern region (a)	*Southern region*	*East Arnhem region*	*Total*
Number examined	8,857	13,293	313	22,463
Defects notified—				
Hearing	407	445	23	875
Psychological and emotional	12	52	15	79
Severe dental caries	224	195	48	467
Speech	30	11	7	48
Squint	—	31	9	40
Vision	89	273	18	380
All others	624	1,180	54	1,858
Total	1,386	2,187	174	3,747
Referrals—				
Child Guidance Clinic, Acoustic Laboratory, Educational Clinic	10	106	—	116
Parent interviews	5	422	68	495

(a) Includes school visits by Darwin Community Health Staff.

Northern Territory health

TABLE 108 AERIAL MEDICAL SERVICE—1973-74

	Darwin	*Alice Springs*	*Gove*	*Total*
Northern Territory Aerial Medical Service—				
Routine flights	310	193	48	551
Emergency flights	208	30	62	300
Inter-hospital transfers	13	19	20	52
Ferry flights	—	—	—	—
Mercy flights	—	—	—	—
Miles flown	244,519	131,189	51,909	527,617
Hours flown	1,803	962	401	3,166
Landings made	1,431	730	326	2,487
Patients carried	897	398	322	1,617
Royal Flying Doctor Service—				
Emergency flights	—	267	—	267
Patients carried	—	397	—	397
Charter and diversion flights—				
Number of flights	44	41	32	117
Patients carried	54	54	64	172
Commercial flights—				
Patients carried	1,433	13	245	1,691
Radio medical consultations (a)	2,418	1,443	—	3,861
Charter boats—				
Number of boats	3	—	—	3
Patients carried	4	—	—	4

(a) Excludes radio telephone consultations.

Northern Territory health

TABLE 109 HEALTH SERVICES PROVIDED AT MAIN NORTHERN TERRITORY HOSPITALS—1973-74

	Darwin	*Alice Springs*	*Katherine*	*Tennant Creek*	*Gove*
Average daily number of in-patients	314	118	40	12	20
Number of—Admissions	11,615	4,692	1,918	1,025	1,200
Bed days	114,516	43,158	14,720	4,505	7,328
Births	1,556	528	155	44	118
Deaths in hospital (a)	113	66	20	6	5
Major operations	1,670	405	59	—	38
Minor operations	3,925	1,187	579	281	172
Dental operations	130	62	6	—	5
Out-patient attendances	120,148	44,573	9,816	19,655	26,238
Postmortem examinations	151	74	27	8	4
Ambulance Services					
Number of—Trips	3,487	800	409	149	256
Miles travelled	40,349	30,991	25,235	14,629	2,773
Patients carried	4,507	815	400	203	213
Dispensaries—Prescriptions dispensed	210,382	101,471	34,175	15,068	72,480
Average number of prescriptions dispensed per working day	831.55	410.81	138.36	57.73	289.92
Physiotherapy Department (b)					
Number of—Patients	7,418	1,227	—	—	435
Treatments	34,202	8,458	—	—	2,092
Occupational Therapy Department (b)					
Number of—Patients	1,474	—	—	—	—
Treatments	13,893	—	—	—	—
Speech Therapy Department					
Number of—Patients	166 (c)	—	—	—	—
Treatments	425 (c)	—	—	—	—
X-ray Department (b)					
Number of exposures	73,647	16,636	5,523	5,409	4,041

(a) Does not include neonatal non-admitted or dead on arrival.
(b) In-patients and out-patients.
(c) Commenced February, 1974.

Northern Territory health

TABLE 110 DENTAL SERVICES PROVIDED IN THE NORTHERN TERRITORY—1973-74

	Darwin Dental Clinic	*Nightcliff Dental Clinic*	*Aerial Mobile—Darwin based*	*Overland Mobile—Darwin based*	*Alice Springs*		*Gove Dental Clinic*	*Total*
					Clinic	*Mobile*		
Amalgam	4,832	4,076	945	922	5,222	273	2,172	18,442
Bridges	40	31	—	—	1	—	4	76
Consultations and examinations	2,535	1,681	2,445	853	2,517	418	1,188	11,637
Crowns	140	129	—	1	27	—	17	314
Dressings	1,782	1,346	100	177	1,120	106	740	5,371
Extractions	3,276	1,682	600	498	1,819	265	1,286	9,426
General anaesthetics (a)	143	1	—	3	42	—	10	199
Inlays	82	18	—	—	10	—	7	117
Jaw fracture	38	—	—	2	12	2	—	54
Oral surgery	216	10	17	22	52	6	40	363
Orthodontist	3,372	86	—	1	984	3	21	4,467
Periodontal treatment	80	386	50	110	306	18	181	1,131
Prosthetic	2,345	741	3	206	1,205	97	914	5,511
Recements	103	91	—	8	57	4	30	293
Root treatment	347	290	13	22	195	7	116	990
Scale and clean	422	116	23	16	44	5	244	870
Silicates	1,314	993	194	171	782	99	604	4,157
Study models	103	31	—	—	32	1	44	211
X-rays	1,919	1,258	52	165	921	70	640	5,025
Other treatments	2,280	734	71	115	1,663	91	296	5,250
Total treatments	25,369	13,700	4,513	3,292	17,011	1,465	8,554	73,904
Patients treated								
Aboriginal adults—								
Paying	6	—	6	26	8	3	2	51
Exempt	396	15	777	155	191	90	545	2,169
Non-aboriginal adults—								
Paying	9,907	4,888	81	983	4,304	420	3,356	23,939
Exempt	760	178	169	47	346	98	110	1,708
Children—								
Aboriginal	71	1	1,733	161	162	98	215	2,441
Non-aboriginal	8,540	5,269	69	471	5,893	192	1,386	21,820
Total patients treated	19,680	10,351	2,835	1,843	10,904	901	5,614	52,128

(a) For dental surgery performed in hospitals.

Northern Territory health

TABLE 111 INFANT HEALTH CENTRES—NUMBER OF ATTENDANCES—1969-70 TO 1973-74

	1969-70	*1970-71*	*1971-72*	*1972-73*	*1973-74*
Darwin	19,050	21,324	23,249	22,328	23,382 (a)
Alice Springs	3,706	4,458	4,895	4,819	4,453
Katherine	2,241	1,680	2,411	2,124	2,016
Tennant Creek	1,557	2,109	3,239	3,653	2,392
Gove (b)	—	—	—	163	1,979
Alyangula	230	326	309	459	275
Adelaide River	148	98	105	152	89
Batchelor	274	219	307	384	412

(a) Includes attendances at Community Health Centre.
(b) Service operative from October 1972.

Northern Territory health

TABLE 112 INFANT HEALTH CENTRES—NUMBER OF SERVICES PROVIDED BY TYPE OF SERVICE—1973-74

	Darwin	*Alice Springs*	*Katherine*	*Tennant Creek*	*Gove (a)*	*Alyangula*	*Adelaide River*	*Batchelor*
New babies enrolled	1,223	288	160	74	78	21	5	18
Test feeds	92	7	—	—	1	13	—	8
Babies referred to doctor	650	162	68	44	29	21	5	31
Home visits	6,068	1,322	200	332	23	—	4	31
Hospital visits	1,279	480	240	24	79	—	—	—
Baby care lectures	70	39	—	3	28	—	—	—
Lecture attendances	532	74	—	30	159	—	—	—
Immunisations	14,012	1,023	1,320	1,657	937	—	34	108
Paediatric clinics	4	29	—	12	—	—	—	1
Paediatric attendances	80 (a)	99	—	50	—	—	—	6
Minor medical and miscellaneous visits	—	1,113	100	468	7	—	2	12

(a) Includes 63 attendances at Community Health Centre.

Northern Territory health

TABLE 113 HOME NURSING SERVICE—NUMBER OF VISITS AND MILES TRAVELLED—1969-70 TO 1973-74

	1969-70	*1970-71*	*1971-72*	*1972-73*	*1973-74*
			Number of visits		
Darwin	42,295	42,673	47,545	65,630	86,207 (a)
Alice Springs	31,832	29,320	27,025	56,231	83,223
Katherine	103	1,250	1,306	622	1,356
Gove (b)	—	—	—	341	345
Total	74,230	73,243	75,876	122,824	171,131
			Miles travelled		
Darwin	57,098	64,065	69,385	82,495	94,695 (a)
Alice Springs	18,895	21,927	24,661	29,008	34,605
Katherine	1,810	3,412	5,925	6,592	10,000
Gove (b)	—	—	—	535	1,193
Total	77,803	89,404	99,971	118,630	140,493

(a) Includes Community Health Centre.
(b) Service operative from February 1973.

Northern Territory Health

TABLE 114 HOME NURSING SERVICE—NUMBER OF VISITS BY TYPE OF VISIT—1972-73 AND 1973-74

	Darwin		*Alice Springs*		*Katherine*		*Gove (a)*		*Total*	
	1972-73	*1973-74 (b)*	*1972-73*	*1973-74*	*1972-73*	*1973-74*	*1972-73*	*1973-74*	*1972-73*	*1973-74*
Gaol	19,884	29,508	6,606	3,491	—	—	—	—	26,490	32,999
Home—										
Departmental patients	36,936	42,865	42,072	62,049	96	552	341	345	79,445	105,811
Private	8,810	13,834	7,553	1,554	—	—	—	—	16,363	15,388
School	—	—	—	—	142	300	—	—	142	300
Camps	—	—	—	—	384	504	—	—	384	504
Total	65,630	86,207	56,231	67,094	622	1,356	341	345	122,824	155,002

(a) Service operative from February 1973.
(b) Includes Community Health Centre.

EXPENDITURE ON HEALTH

Departmental expenditure

TABLE 115 EXPENDITURE—1969-70 TO 1973-74

($'000)

Type	*1969-70*	*1970-71*	*1971-72*	*1972-73*	*1973-74*
SPECIAL APPROPRIATIONS					
Payments to or for the States—					
Mental health institutions—					
Contributions to capital expenditure	5,501	4,199	4,207	3,430	2,249
States grants—Nursing homes	—	337	460	1,019	658
States grants—Paramedical services	—	—	7	77	97
TOTAL PAYMENTS TO OR FOR THE STATES	5,501	4,536	4,674	4,526	3,004
National Welfare Fund					
Medical benefits	56,863	95,604	132,574		
Medical services for pensioners	19,230	19,898	27,804		
Hospital benefits	40,258	49,812	67,305	(a)	
Payments to public hospitals for pensioners	24,157	23,555	24,065		
Nursing home benefits	46,960	49,477	70,593		
Handicapped persons' homes—Children's benefit	485	456	438		
Pharmaceutical benefits	95,650	115,094	121,263	119,493	151,493
Pharmaceutical benefits for pensioners	41,069	45,181	52,005	58,139	66,803
Milk for school children	10,051	10,160	11,845	11,717	8,079
Tuberculosis medical services and allowances (b)	11,326	11,256	10,226	11,635	12,047
Miscellaneous	4,955	6,612	8,436	9,723	12,444
TOTAL NATIONAL WELFARE FUND	351,004	427,106	526,553	210,708	250,866
TOTAL SPECIAL APPROPRIATIONS	356,505	431,642	531,226	215,234	253,870
CONSOLIDATED REVENUE FUND					
Administrative expenditure	17,762	21,610	26,420	29,633 (c)	34,939
Australian Capital Territory health services	4,531	6,465	7,577	9,028	4,568
Northern Territory health services	7,625	9,420	11,913	14,694	20,453
Capital works and services	1,252	5,707	2,071	4,780	4,527
Payments to or for the States	2,698	2,128	2,561	3,275	23,209
TOTAL CONSOLIDATED REVENUE FUND	33,868	45,330	50,542	61,410	87,696
TOTAL EXPENDITURE	390,373	476,973	581,769	276,644	341,566

(a) These items came under the control of the Department of Society Security from 1 March 1973. Expenditure for the whole of 1972-73 is excluded.
(b) Includes allowances paid through the Department of Social Security—see Tables 69 and 70.
(c) The administration of the Health Insurance and Benefits Division of the Department of Health was transferred to the Department of Social Security from 1 March 1973 and expenditure incurred by that Division since that date is excluded.

Health Grants

TABLE 116 ALLOCATION OF GRANTS—1964-65 TO 1973-74

($'000)

Year ended 30 June	*Home Nursing Subsidy Scheme*	*Mental Health Institutions—Capital Grants*	*Milk for School Children Scheme*	*Nursing Homes—Capital Grants*	*Paramedical Services Scheme*	*Red Cross Blood Transfusion Service*
1965	465	2,504	8,059	—	—	435
1966	546	4,539	8,493	—	—	490
1967	664	4,973	9,021	—	—	974
1968	765	4,243	9,831	—	—	656
1969	933	4,655	10,054	—	—	765
1970	1,094	5,501	10,051	—	—	754
1971	1,450	4,199	10,160	337	—	885
1972	1,835	4,207	11,845	460	7	1,049
1973	2,502	3,430	11,717	1,019	77	1,262
1974	3,390	2,249	8,079	658	164	1,976

Health Grants

TABLE 117 ALLOCATION OF GRANTS (a)—STATES AND TERRITORIES—1973-74

($'000)

Type	*N.S.W.*	*Vic.*	*Qld.*	*S.A.*	*W.A.*	*Tas.*	*A.C.T.*	*N.T.*	*Other*	*Aust.*
GENERAL HEALTH GRANTS										
Home Nursing Subsidy Scheme	829	1,025	647	227	575	87	—	—	—	3,390
Mental Health Institutions—Capital Grants	1,203	237	247	344	187	31	—	—	—	2,249
Milk for School Children Scheme	2,894	1,837	1,319	700	596	533	111	89	—	8,079
Nursing Homes—Capital Grants	—	512	146	—	—	—	—	—	—	658
Paramedical Services Scheme	—	131	—	30	—	3	—	—	—	164
Red Cross Blood Transfusion Service	588	506	304	252	183	37	41	65	—	1,976
COMMUNITY HEALTH GRANTS										
Community Health Programme	2,700	3,115	1,024	1,155	704	42	—	—	1,136	9,877
Community Mental Health Programme	2,682	851	1,178	637	940	363	—	—	74	6,725
Hospital Development Programme	689	150	250	441	695	140	—	—	—	2,365
Planning and Research Programme	180	—	65	50	81	25	—	—	146	547

(a) Community Health Grants were introduced in 1973-74, these are excluded from Table 116.

Health Grants

TABLE 118 ROYAL FLYING DOCTOR SERVICE—1964-65 TO 1973-74

($)

Year ended 30 June	*Operational*	*Capital*	*Special Capital (a)*
1965	110,000	79,968	—
1966	150,000	124,280	—
1967	150,000	86,350	—
1968	150,000	179,350	—
1969	180,000	170,000	—
1970	180,000	169,957	—
1971	180,000	158,444	12,526
1972	315,000	170,000	119,070
1973	315,000	169,545	198,934
1974	315,000	170,177	154,310

(a) Mandatory changeover of twelve base radio stations from double sideband to single sideband radio operation.

National Health and Medical Research Council Grants

TABLE 119 GRANTS MADE FROM THE MEDICAL RESEARCH ENDOWMENT FUND—TYPE OF INSTITUTION—1969-70 TO 1973-74

($)

Universities, institutions and hospitals	*1969-70*	*1970-71*	*1971-72*	*1972-73*	*1973-74*
Universities—					
Sydney	220,367	274,462	300,253	372,675	544,268
New South Wales	111,673	142,551	184,367	309,156	420,317
Newcastle	—	—	1,000	3,922	11,142
New England	—	—	—	—	7,740
Melbourne	260,487	536,877	430,590	571,753	815,500
Monash	194,536	324,627	297,564	320,086	427,437
Latrobe	—	—	1,500	4,833	550
Queensland	106,537	167,362	209,837	265,384	363,854
Griffith	—	—	—	—	550
James Cook	—	—	12,090	830	—
Adelaide	139,746	133,134	162,675	157,460	200,255
Flinders	—	—	—	—	19,332
Western Australia	136,731	148,012	132,966	135,524	212,713
Tasmania	4,100	16,246	24,415	50,156	81,389
Australian National University	—	12,329	12,329	13,683	—
Total	1,174,177	1,755,600	1,769,586	2,205,462	3,105,047
Institutes and hospitals—					
New South Wales	118,991	161,856	245,507	309,534	529,242
Victoria (a)	407,683	458,880	609,183	891,560	1,179,842
Queensland	37,312	18,839	29,066	21,828	77,249
South Australia	13,254	21,571	11,906	33,196	117,920
Western Australia	12,130	9,762	16,331	24,503	29,856
Tasmania	1,280	3,744	2,975	2,000	14,296
Australian Capital Territory	—	7,605	550	1,698	4,500
Special Grants	—	—	7,500 (b)	40,000 (c)	64,000 (d)
Total	590,650	682,257	923,018	1,324,319	2,016,905
Grand total	1,764,827	2,437,857	2,692,604	3,529,781	5,121,952

(a) Includes grants for the following institutions:

	Walter and Eliza Hall Institute of Medical Research, Melbourne	Howard Florey Institute of Experimental Physiology and Medicine, Melbourne
1969-70	$285,514	—
1970-71	$322,355	—
1971-72	$354,323	$108,295
1972-73	$417,568	$188,168
1973-74	$614,226	$333,067

(b) Special grant of $7,500 made available to the Bureau of Maternal and Child Health, New South Wales Department of Health, to further studies in its Anthropometric Survey of Australian Children.
(c) Grant of $40,000 to the National Heart Foundation for a Hypertension Trial.
(d) Includes a grant of $60,000 to the National Heart Foundation for a Hypertension Trial and $4,000 for the Market Basket Survey, 1974.

National Health and Medical Research Council Grants

TABLE 120 GRANTS MADE FROM THE MEDICAL RESEARCH ENDOWMENT FUND—ANALYSIS OF GRANTS—1965-66 TO 1973-74

($)

Year ended 30 June	*Salaries, graduate research workers*	*Research scholarship stipends*		*Technical assistance and maintenance expenses*	*Equipment*	*Travelling fellowships*	*Miscellaneous grants*	*Total*
		Undergraduate	*Postgraduate (a)*					
1966	388,539	198,620		304,294		(b)	(b)	891,453
1967	420,828	74,286		476,267		(b)	(b)	971,381
1968	686,483	158,794		633,007		(b)	(b)	1,478,284
1969	663,638	266,255		660,962		54,942	(b)	1,645,797
1970	625,594	16,170	233,867	679,570	110,492	99,134	(b)	1,764,827
1971	899,509	17,820	298,810	943,072	214,774	48,568	15,304	2,437,857
1972	1,066,047	35,923	305,900	982,717	155,274	128,269	18,474	2,692,604
1973	1,319,515	22,400	329,000	1,279,569	358,422	124,170	96,705	3,529,781
1974	2,217,867	19,200	391,383	1,704,015	378,856	188,841	221,790	5,121,952

(a) Includes $500 basic consumable allowance for medical and dental postgraduate scholars prior to 1973-74. This was increased to $600 for 1973-74.
(b) Figures for travelling fellowships and miscellaneous grants have been included in the figures for salaries and technical assistance and maintenance expenses.

National Health and Medical Research Council Grants

TABLE 121 GRANTS MADE FROM THE MEDICAL RESEARCH ENDOWMENT FUND—1973-74 (a)
($)

Universities, institutions and hospitals	*Salaries graduate research workers*	*Research scholarship stipends*		*Technical assistance and maintenance expenses*	*Equipment*	*Travelling fellowships*	*Miscellaneous grants*	*Total*
		Undergraduate	*Postgraduate (b)*					
Universities—								
Sydney	229,068	4,000	69,350	127,679	61,548	52,623	—	544,268
New South Wales	202,189	1,600	39,000	137,407	40,121	—	—	420,317
Newcastle	—	—	—	11,142	—	—	—	11,142
New England	5,740	—	—	2,000	—	—	—	7,740
Melbourne	260,745	3,200	93,633	350,111	91,211	16,600	—	815,500
Monash	164,035	4,400	53,400	145,973	45,279	14,350	—	427,437
Latrobe	—	—	—	550	—	—	—	550
Queensland	165,358	800	16,400	137,711	43,585	—	—	363,854
Griffith	—	—	—	550	—	—	—	550
James Cook	—	—	—	—	—	—	—	—
Adelaide	75,014	2,000	34,900	80,511	7,830	—	—	200,255
Flinders	5,332	—	—	14,000	—	—	—	19,332
Western Australia	70,574	3,200	15,400	78,348	15,248	29,943	—	212,713
Tasmania	18,495	—	7,700	27,081	1,650	—	26,463	81,389
Australian National University	—	—	—	—	—	—	—	—
Total	1,196,550	19,200	329,783	1,113,063	306,472	113,516	26,463	3,105,047
Institutes and hospitals—								
New South Wales	345,862	—	23,600	109,938	40,427	4,415	5,000	529,242
Victoria	621,983	—	38,000	427,773	8,321	57,338	26,427	1,179,842 (c)
Queensland	33,711	—	—	28,270	15,268	—	—	77,249
South Australia	5,740	—	—	1,800	4,480	6,000	99,900	117,920
Western Australia	9,693	—	—	10,591	2,000	7,572	—	29,856
Tasmania	4,328	—	—	8,080	1,888	—	—	14,296
Australian Capital Territory	—	—	—	4,500	—	—	—	4,500
Special Grants	—	—	—	—	—	—	64,000 (d)	64,000 (d)
Total	1,021,317	—	61,600	590,952	72,384	75,325	195,327	2,016,905
Grand total	2,217,867	19,200	391,383	1,704,015	378,856	188,841	221,790	5,121,952

(a) Recommended by the 75th Session of Council, May 1973 and 76th Session, November 1973, for use in 1973-74.
(b) Includes $600 basic consumable allowance for Medical and Dental Postgraduate Scholars.
(c) Includes grants totalling $614,226 to the Walter and Eliza Hall Institute of Medical Research, Melbourne and $333,067 to the Howard Florey Institute of Experimental Physiology and Medicine, Melbourne.
(d) Includes a grant of $60,000 to the National Heart Foundation for a Hypertension Trial and $4,000 for the Market Basket Survey, 1974.

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